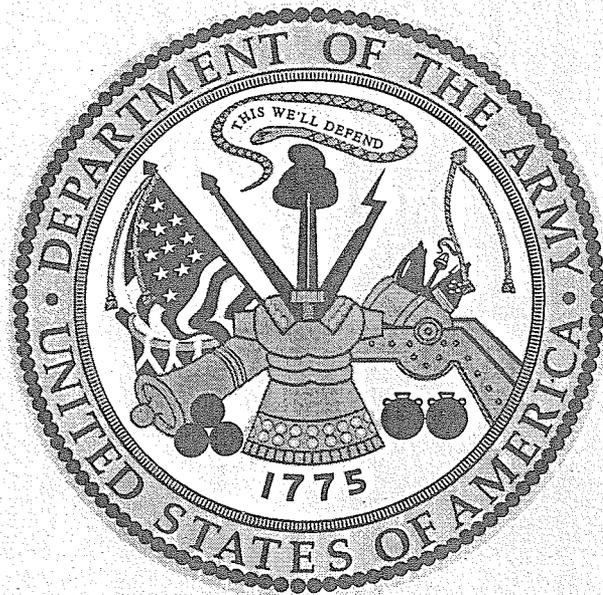


Final
**Environmental Assessment
for BRAC 95 Disposal and Reuse of
Fort Totten, New York**



Prepared for

US Military District of Washington

by

**US Army Corps of Engineers
Mobile District**

with Technical Assistance from

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Section 106 consultations are ongoing for this BRAC action and will be completed before disposal of any Fort Totten properties determined to be eligible for the NRHP.

4.13 *ECONOMIC DEVELOPMENT*

This section describes the contribution of Fort Totten to the economy and the sociological environment in the region. The socioeconomic indicators used for this study include regional economic activity, population, housing, and schools. In addition, recreational and community facilities, and public and social services are discussed. These indicators characterize the region of influence (ROI).

An ROI is a geographic area selected as a basis on which social and economic impacts of project alternatives are analyzed. The criteria used to determine the ROI are the residential distribution of Fort Totten employees, commuting distances and times, and the location of businesses providing goods and services to Fort Totten, its personnel, and their dependents. Based on these criteria, the ROI for the social and economic environment is defined as Queens and Nassau counties in New York. The ROI covers an area of 396 square miles and is a part of the New York City metropolitan area.

The baseline year for socioeconomic data is 1995, the date of the BRAC Commission's announcement of the Fort Totten realignment. This base year represents the most recent fiscal year in which Fort Totten staffing and operations were conducted under "normal" conditions. Where 1995 data are not available, the most recent data available are presented.

4.13.1 *Regional Economic Activity*

Fort Totten is located in a highly developed region that contains a mix of industrial, commercial, and residential areas, all located within a short distance of Manhattan. The regional economy is diverse and includes a wide range of production and service facilities. Employment in the ROI, however, is almost exclusively nonagricultural since land available for farming is very scarce. The primary sources of employment are services, wholesale and retail trade, government, finance, insurance, and real estate. During 1995 these industries accounted for over 78 percent of regional employment. Table 4-7 shows ROI employment by industry category for 1990 and 1995.

The largest source of jobs in the ROI was the service sector, which provided 36.9 percent of the total employment. Wholesale and retail trade provided 21.7 percent of the total number of jobs, while finance, insurance, and real estate accounted for 10.6 percent. Government and government enterprises accounted for 9.3 percent of the total employment. The manufacturing sector, which has declined in importance over recent decades, lost almost 29,000 jobs during the period from 1990 to 1995. In fact, only the service and finance sectors showed an increase in jobs during the same period. As shown in the table, there was actually a small net loss of jobs in the ROI between 1990 and 1995. The ROI civilian labor force totaled 1,581,826 in 1995. The unemployment rate in the region was 6.3 percent in 1995 (Table 4-8). Unemployment in New York State was also 6.3 percent in 1995, which was higher than the U.S. average of 5.6 percent.

The per capita income in the ROI was \$29,902 in 1995, an increase of over 15 percent since 1990. During the same period, the national per capita income increased 21.1 percent to \$23,196. There is,

Table 4-7
Fort Totten ROI Employment by Industry

Employment Sector	1990 ROI Employment (Percent of Total Employment)	1995 ROI Employment (Percent of Total Employment)
Services	453,100 (33.5)	492,236 (36.9)
Wholesale and Retail Trade	297,481 (22.0)	289,298 (21.3)
Manufacturing	131,482 (9.7)	102,014 (8.0)
Construction	75,882 (5.6)	65,042 (4.9)
Finance, Insurance, and Real Estate	136,070 (10.1)	140,957 (10.6)
Transportation and Public Utilities	117,899 (8.7)	113,658 (8.5)
Mining	716 (0.1)	670 (0.1)
Other Nonfarm Private Sector	6,257 (0.5)	7,869 (0.6)
Government and Government Enterprises	132,121 (9.8)	123,633 (9.3)
Total Nonfarm Employment	1,351,008 (100.0)	1,334,262 (100.0)
Farm Employment	124 (0.0)	107 (0.0)
Total Employment	1,351,132	1,334,369

Source: BEA, 1997.

Table 4-8
Unemployment Trends

	1990 Unemployment Rate	1995 Unemployment Rate
Nassau County	3.5%	4.5%
Queens County	6.0%	7.6%
ROI	4.9%	6.3%
New York	5.3%	6.3%
United States	5.5%	5.6%

Source: BLS, 1997.

however, large disparity in per capita income between the two counties composing the ROI: Nassau County had a 1995 per capita income of \$36,609 compared to only \$25,214 for Queens County.

4.13.2 Installation Workforce Structure and Salaries

During fiscal year 1995, there were a total of 523 military, civilian, and tenant employees at Fort Totten. The 318 tenants constituted the largest proportion of the site workforce, followed by 93 enlisted military personnel. There were 27 military officers and 69 civilian workers on site. Sixteen additional workers were either contractual or other non-appropriated fund employees. Average salaries ranged from \$30,000 for non-appropriated fund workers to \$71,100 for military officers. Total salary expenditures for FY 1995 were more than \$21.5 million.

4.14 SOCIOLOGICAL ENVIRONMENT

4.14.1 Demographics

Population characteristics in the ROI are provided for the baseline year of 1995 or the most recent year for which data are available. To illustrate trends, Table 4-9 provides data for 1980 and 1990, as well as forecasts through 2010.

The Fort Totten region has been characterized by slow growth over the past 15 years. In fact, Nassau County has experienced a net population loss during this period. The total ROI population, which reached 3,269,400 in 1995, had increased by less than 1 percent from 1990. During the 1980s, the ROI population increased by only 0.8 percent. Growth rates, however, are expected to increase over the next 15 years, and the ROI population is projected to grow an additional 4.4 percent between 1995 and 2010.

4.14.2 Housing

On-Base Housing. In 1995, there were 188 family housing units on post and 60 billets for personnel. The 113 occupied family units housed 395 sponsors and dependents, while 51 persons were housed in the barracks (Paidoussis, personal communication, 1997b).

Off-Base Housing. There were 1,198,982 housing units in the ROI in 1990, as shown in Table 4-10. The median value of owner-occupied housing was \$209,500 in Nassau County and \$191,000 in Queens County. The median contract rent ranged from \$513 in Queens County to \$678 in Nassau County (U.S. DOC, 1992).

Table 4-9
Fort Totten ROI Population Trends

	Population 1980	Population 1990	Population 1995	Population 2000 (projected)	Population 2010 (projected)
Nassau County	1,321,582	1,287,348	1,305,772	1,318,800	1,349,800
Queens County	1,891,325	1,951,598	1,963,628	1,999,000	2,062,400
Total ROI	3,212,907	3,238,946	3,269,400	3,317,800	3,412,200

Sources: U.S. DOC, 1994, 1996; NYMTC, 1997.

Table 4-10
ROI Housing Quantity and Quality

	Nassau County	Queens County	ROI
Total housing units	446,292	752,690	1,198,982
Occupied housing units	431,515	720,149	1,151,664
Owner-occupied	347,143	305,573	652,716
Renter-occupied	84,372	414,576	498,948
Vacant housing units	14,777	32,541	47,318
Homeowner vacancy rate (%)	1.2	2.1	NA
Rental vacancy rate (%)	4.1	3.2	NA
Lacking complete plumbing facilities	1,067	4,787	5,854
Lacking complete kitchen facilities	1,394	4,529	5,923

Source: U.S. DOC, 1992.

4.14.3 Public Safety

Law Enforcement Services. Security for Fort Totten has been provided by contract services. In addition, the New York City Police Department (NYPD) conducted canine training on site. Additional law enforcement in the ROI is provided by the NYPD.

Fire Protection Services. Fire protection at Fort Totten has been provided by the FDNY. In addition, the FDNY's Bureau of Fire Investigation is located at Fort Totten, and the FDNY has offered emergency medical services training on site.

Medical Services. Health care in the Fort Totten ROI is provided by more than 30 hospitals. These hospitals provide more than 11,200 beds (AHA, 1995). Facilities in western Queens are extremely crowded, and many other areas of Queens have limited access to a wide range of primary and tertiary care (Shulman, 1994).

4.14.4 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*. The Executive order is designed to focus the attention of federal agencies on the human health and environmental conditions in minority communities and low-income communities. Environmental justice analyses are performed to identify potential disproportionately high and adverse impacts from proposed actions and to identify alternatives that might mitigate these impacts.

The ROI has a larger proportion of minority residents than the state of New York or the United States as a whole, as shown in Table 4-11. In 1990, 69.3 percent of the ROI population was white, 16.5 percent was black, and 8.6 percent was Asian Pacific Islander. All other racial groups composed 5.7 percent of the population, while 14.2 percent of the population was of Hispanic ethnicity. In the state of New York, 74.4 percent of the population was white, 15.9 percent was black, 9.7 percent was

Table 4-11
Race, Ethnicity, and Poverty Status for the Fort Totten ROI,
New York, and the United States

	ROI	New York	United States
White	69.3%	74.4%	80.3%
Black	16.5%	15.9%	12.1%
American Indian, Eskimo, Aleut	0.3%	0.3%	0.8%
Asian Pacific Islander	8.6%	3.9%	2.9%
Other	5.4%	5.5%	3.9%
Hispanic	14.2%	12.3%	9.0%
Living in Poverty	8.1%	13.0%	0.131

Source: U.S. DOC, 1994.

another racial group, and 12.3 percent was of Hispanic ethnicity. In the United States as a whole, 80.3 percent of the population was white, 12.1 percent black, and 7.6 percent other racial groups. Nine percent of the U.S. population was Hispanic.

Table 4-11 depicts race, ethnicity, and poverty status characteristics of the population in the Fort Totten ROI, New York, and the United States.

The 1989 median household income ranged from \$34,186 in Queens County to \$54,283 in Nassau County. The U.S. poverty threshold is \$11,921 for a family of three (Grolier, 1995). The Census Bureau bases the poverty status of families and individuals on 48 threshold variables, including income, family size, number of family members under 18 and over 65 years of age, and amount spent on food.

In 1990, approximately 8.1 percent of the ROI residents were classified by the U.S. Census Bureau as living in poverty, somewhat lower than the 13.0 percent in the state of New York and the 13.1 percent in the United States as a whole (U.S. DOC, 1994).

4.14.5 Protection of Children

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, seeks to protect children from disproportionately incurring environmental health risks or safety risks that might arise as a result of Army policies, programs, activities, and standards. Children have been present at Fort Totten either as dependents living in family housing or as occasional visitors. The Army has taken precautions for their safety by a number of means, including use of fencing, limitations on access to certain areas, and provision of adult supervision.

4.14.6 Homeless and Other Special Programs

There are a number of shelters and assistance programs for individuals and families in need of temporary placement due to lack of a fixed, regular, or adequate residence in the area. These programs are supported by a mix of government and private funding.

In Queens, the government provides shelter for approximately 956 families in 13 facilities scattered throughout the borough. In addition, three armories provide shelter for 665 single adults. The borough has a number of strategic goals and policies in place to prevent homelessness and to meet the needs of homeless persons in the borough. These include assistance in housing problems to prevent families and single persons from becoming homeless, continuation of community-based programs, and elimination of large institutional shelters that lack necessary social services (Shulman, 1994).

In Nassau County, much of the assistance available to homeless persons is provided through private programs such as the Interfaith Nutrition Network. This program provides emergency shelter, single-room-occupancy housing, and long-term housing for low-income and homeless individuals and families. In addition, the program runs soup kitchens throughout Long Island that serve approximately 3,000 meals per day and provides free medical care to homeless persons and others who lack access to health care.

4.15 QUALITY OF LIFE

4.15.1 Schools

The U.S. Department of Education provides federal impact aid to school districts that have federal lands within their jurisdiction. This federal impact aid is authorized under Public Law 103-382 as payment in lieu of taxes that would have been paid if the land were not held by the federal government.

School districts receive federal funding for each student whose parent or parents live on or work on federal property. The amount of federal school aid a school district receives is dependent on the number of "federal" students the district supports in relation to the total district student population. Schools receive more funding for those students whose parents both live and work on federal property. Total funding varies year by year according to congressional appropriations for the program, but in general, funding has ranged from \$250 to \$1,750 per pupil. There are approximately 65 public school districts in the ROI, most of which are in Nassau County, with approximately 418,800 students. In Queens, where the districts are a part of the New York City school system, many of the schools are operating at or above their capacity. This limits the ability of districts to offer certain educational programs. Nassau County's 57 school districts have a much lower enrollment and not as many problems with overcrowding.

There are numerous opportunities for higher education in the ROI and the surrounding area. More than 120 colleges and universities are located in New York City or on Long Island, including branches of the City University of New York and the State University of New York.

4.15.2 Family Support

Family support services for Fort Totten personnel have been provided through programs and facilities located at Fort Hamilton.

4.15.3 Shops and Services

Fort Totten contains several service facilities including a gas station, a post exchange (PX), and a YMCA. In addition to these facilities available at Fort Totten, the ROI provides ample opportunity for

shopping and services. Because the ROI is a part of the New York City metropolitan area, residents have access to one of the world's largest centers of commerce.

4.15.4 Recreation

The ROI offers a wide range of recreational facilities including parks and beaches, professional sports stadiums, and visual and performing arts centers. In Queens County alone, more than 7,000 acres of land is dedicated parkland. The public facilities range from recreation centers to bocci courts. The ROI is home to two major league sports teams, the New York Mets and the New York Islanders. There are several performing arts centers and numerous art galleries and museums in the area. The ROI's proximity to Manhattan and the other boroughs of New York City provides access to the almost unlimited entertainment and recreational opportunities available.

4.15.5 Visual and Aesthetic Values

Fort Totten's unique architecture and its location at the confluence of Long Island and the East River give the installation a high aesthetic value. The installation's buildings range from contemporary institution design to frame Victorian and Greek-Revival structures, with muted-red-brick buildings in the USCG area. Trees and vegetation on the installation screen these buildings from areas outside the fort. Many of the historical buildings, dating back to the Civil War era, remain intact and in usable condition. The Battery itself, of Civil War vintage, affords scenic views of the Sound and Fort Schuyler. The fort also contains former parade grounds that have been converted to recreational fields.

4.16 INSTALLATION AGREEMENTS

Fort Totten has no mutual agreements with local agencies for fire or police protection. The fort does hold numerous leases and licenses with tenants located on site. Fort Totten agreements with tenant organizations are listed in Table 4-12.

Table 4-12
Tenants at Fort Totten

Agreement Type	Grantee	Term
License	Young Mens Christian Association (YMCA) ¹	Indefinite
License	Eastern Paralyzed Veterans Association	1 Sep 89 - 1 Sep 97
License	NY City Fire Department Bureau of Fire Investigation	2 Sep 89 - 1 Sep 97
License	Bayside Historical Society	1 Aug 93 - 31 Jul 98
Lease	NY City Fire Department EMS Training	2 Jul 92 - 1 Sep 97
Lease	NY City Police Department, K-9 Corps	1 Sep 92 - 1 Sep 97
Interim Lease	NY City Fire Department	23 Dec 96 - 23 Dec 2006

Source: Dennis, personal communication, 1997.

¹YMCA owns Building 318 and the Army provides a license to use the ground underneath the building.

5.5.13 Economic Development

Methodology. Socioeconomic effects of the implementation of the reuse scenarios are estimated using the EIFS model (USACERL, 1994). The EIFS model is a computer-based economic activity assessment tool that calculates multipliers to estimate the direct and indirect effects resulting from a given action. Changes in base employment and spending represent the direct effects of the action. Based on the input data and calculated multipliers, the model estimates ROI changes in sales volume, employment, income, population, housing, and school enrollments, accounting for the direct and indirect effects of the action.

The analysis uses the social and economic indicators presented in Section 4.13 through 4.15. The EIFS model outputs for each reuse scenario represent net changes in sales volume, employment, income, population, housing, and schools from baseline levels.

For purposes of this analysis, a change is considered significant if it falls outside the normal range of ROI economic variation. To determine historical variability, the EIFS model calculates a rational threshold value (RTV) profile for the ROI. This analytical process uses historical data for the ROI and calculates fluctuations in sales volume, employment, income, and population patterns. The historical extremes for the ROI become the threshold of significance for social and economic change. If the estimated effect of a reuse scenario falls outside the RTV, the effect is considered significant. Appendix H discusses this methodology in more detail and presents the model output tables developed for this analysis.

The model requires the following input data: the names of counties composing the ROI, the number of civilian and military personnel affected by the scenario and their salaries, and the change in local procurement due to the action. The model also requires the percent of civilians expected to relocate. For each reuse intensity the percent expected to relocate from outside the ROI would be zero. Any new jobs created by reuse under any scenario would more than likely be filled by unemployed persons already in the area. The EIFS model input parameters are shown in Table 5-4. Appendix H describes the EIFS model in more detail and contains the model input and output tables.

Table 5-4
EIFS Model Input Parameters

Reuse Intensity	Employee Population ¹	Change in Employee Population ²	Total Expenditure per Employee ³	Change in Total Expenditures ⁴
MIR	700	382	\$21,451	\$8,194,142
MLIR	530	212	\$21,451	\$4,547,534
LIR	250	-68	\$21,451	-\$1,458,643

¹ See Table 3-3 for derivation of employee population for reuse scenarios.

² Projected reuse population minus the baseline tenant population (318).

³ Average expenditure per employee calculated from national BEA employment levels weighted to reflect county employment levels (see Appendix H). Reuse was assumed to be 70 percent institutional (not-for-profit organizations and the fire department academy) and 30 percent commercial (retail stores or catering).

⁴ Total expenditure per employee multiplied by the change in employee population.

Medium Intensity Reuse, Direct. Long-term minor beneficial effects would be expected. Approximately 700 employees would work on the reused site under this scenario—382 more than baseline employment. Approximately 98 jobs would be created as a result of direct expenditures associated with reuse activities, generating increases in local income and spending (Table 5-5). ROI income would increase by approximately \$2.2 million as a result of direct jobs generated by reuse activities. Sales volume increases directly attributable to reuse would total almost \$14.3 million.

Medium Intensity Reuse, Indirect. Long-term minor beneficial effects would be expected. Reuse activities would generate secondary jobs and additional income in the region. Secondary jobs created, in combination with the direct employment, would boost total employment in the ROI by 709 jobs. Additional income generated from indirect expenditures would increase ROI income by approximately \$18.8 million. Total sales volume (direct and indirect) would increase by almost \$47.7 million. These changes fall within historical fluctuations and would be considered minor.

Medium-Low Intensity Reuse, Direct. Long-term minor beneficial effects would be expected. Approximately 530 employees would work on the reused site, an increase of 212 over baseline employment. Approximately 54 jobs would be generated as a result of direct expenditures associated with reuse activities, generating increases in local income and spending (Table 5-6). ROI income would increase by approximately \$1.2 million as a result of direct jobs generated by reuse activities. Sales volume increases directly attributable to reuse would total more than \$7.9 million.

Table 5-5
EIFS Standard Model Output for MIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	\$14,248,000	N/A	N/A
Total Sales Volume	\$47,654,000	0.060%	-4.616% to 8.803%
Direct Employment	98	N/A	N/A
Total Employment	709	0.053%	-2.203% to 2.375%
Direct Income	\$2,170,000	N/A	N/A
Total Income	\$18,803,000	0.022%	-3.587% to 7.355%
Local Population	0	N/A	-0.616% to 1.036%
Local Off-Base Population	0	N/A	N/A
Number of School Children	0	N/A	N/A
Demand for Housing			
Rental	0	N/A	N/A
Owner-Occupied	0	N/A	N/A
Total Housing Demand	0	N/A	N/A
Civilian Employees Expected to Relocate	0	N/A	N/A
Military Employees Expected to Relocate	0	N/A	N/A

Note: N/A = not applicable
Source: EIFS model.

Table 5-6
EIFS Standard Model Output for MLIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	\$7,907,000	N/A	N/A
Total Sales Volume	\$26,447,000	0.033%	-4.616% to 8.803%
Direct Employment	54	N/A	N/A
Total Employment	393	0.030%	-2.203% to 2.375%
Direct Income	\$1,204,000	N/A	N/A
Total Income	\$10,435,000	0.012%	-3.587% to 7.355%
Local Population	0	N/A	-0.616% to 1.036%
Local Off-Base Population	0	N/A	N/A
Number of School Children	0	N/A	N/A
Demand for Housing			
Rental	0	N/A	N/A
Owner-Occupied	0	N/A	N/A
Total Housing Demand	0	N/A	N/A
Civilian Employees Expected to Relocate	0	N/A	N/A
Military Employees Expected to Relocate	0	N/A	N/A

Source: EIFS model.

Medium-Low Intensity Reuse, Indirect. Long-term minor beneficial effects would be expected. Reuse activities would generate secondary jobs and additional income in the region. Secondary jobs created, in combination with direct employment, would boost total employment in the ROI by 393 jobs. Additional income generated from indirect expenditures would increase ROI income by approximately \$10.4 million. Total sales volume (direct and indirect) would increase by almost \$26.5 million. These increases would be within historical fluctuations and considered minor.

Low Intensity Reuse, Direct. Long-term minor adverse effects would be expected. Approximately 250 employees would work on the reused site under this scenario, a decrease of 68 employees from baseline conditions. Approximately 17 jobs would be lost in the ROI as a result in the decrease in direct expenditures associated with reuse activities, generating losses in local income and spending (Table 5-7). ROI income would decrease by approximately \$386,000 as a result of the loss in employment. Sales volume would decrease more than \$2.5 million.

Low Intensity Reuse, Indirect. Long-term minor adverse effects would be expected. Total employment would decrease by 126 jobs while total income would fall by approximately \$3.3 million. Total sales volume (direct and indirect) would decrease by almost \$8.5 million. These changes would fall within historical fluctuations and be considered minor.

Table 5-7
EIFS Standard Model Output for LIR

Indicator	Projected Change	Percentage Change	RTV Range
Direct Sales Volume	-\$2,536,000	N/A	N/A
Total Sales Volume	-\$8,483,000	-0.011%	-4.616% to 8.803%
Direct Employment	-17	N/A	N/A
Total Employment	-126	-0.010%	-2.203% to 2.375%
Direct Income	-\$386,000	N/A	N/A
Total Income	-\$3,347,000	-0.004%	-3.587% to 7.355%
Local Population	0	N/A	-0.616% to 1.036%
Local Off-Base Population	0	N/A	N/A
Number of School Children	0	N/A	N/A
Demand for Housing			
Rental	0	N/A	N/A
Owner-Occupied	0	N/A	N/A
Total Housing Demand	0	N/A	N/A
Civilian Employees Expected to Relocate	0	N/A	N/A
Military Employees Expected to Relocate	0	N/A	N/A

Source: EIFS model.

5.5.14 Sociological Environment (Including Environmental Justice and Protection of Children)

Medium Intensity Reuse, Direct. No effects would be expected.

Medium Intensity Reuse, Indirect. No effects would be expected.

Medium-Low Intensity Reuse, Direct. No effects would be expected.

Medium-Low Intensity Reuse, Indirect. No effects would be expected.

Low Intensity Reuse, Direct. No effects would be expected.

Low Intensity Reuse, Indirect. No effects would be expected.

5.5.15 Quality of Life

Medium Intensity Reuse, Direct. No effects would be expected.

Medium Intensity Reuse, Indirect. No effects would be expected.

Medium-Low Intensity Reuse, Direct. No effects would be expected.

Medium-Low Intensity Reuse, Indirect. No effects would be expected.

Appendix H: Economic Impact Forecast System (EIFS) Model and Outputs

Socioeconomic Impact Assessment

Socioeconomic impacts are linked through cause-and-effect relationships. Military payrolls and local procurement contribute to the economic base for the region of influence (ROI). In this regard, the reuse of the DDMT BRAC parcel will have a multiplier effect on the local and regional economy. With reuse, direct jobs will be created, generating new income and increasing personal spending. This spending generally creates secondary jobs, increases business volume, and increases revenues for schools and other social services. In contrast, if reuse is not implemented, jobs will not be created, and any negative economic effects from the realignment of DDMT would remain. Potential in-migration can reduce available housing. This situation could lead to indirect effects, such as reduced income generation, reduced business volume, reduced housing demand, out-migration, and less funding for schools and other social services.

The Economic Impact Forecast System

The US Army, with the assistance of many academic and professional economists and regional scientists, developed the Economic Impact Forecast System (EIFS) to address the economic impacts of major Army actions and to measure their significance. As a result of its designed applicability, and in the interest of uniformity, EIFS is mandated by ASA (IL&E) for use in NEPA assessment for Base Closure and Realignment. The entire system is designed for the scrutiny of a populace affected by the actions being studied. The algorithms in EIFS are simple and easy to understand, but still have firm, defensible bases in regional economic theory.

EIFS is included as one of the tools of the Environmental Technical Information System (ETIS) and is implemented as an on-line system supported by USACERL through the University of Illinois. The system is available to anyone with an approved login and password. It is available at all times through toll-free numbers, Telenet, and other commonly used communications. The ETIS Support Center at the university and the staff of USACERL are available to assist with the use of EIFS.

The databases in EIFS are national in scope and cover the approximately 3,700 counties, parishes, and independent cities that are recognized as reporting units by federal agencies. EIFS allows the user to "define" an economic ROI by simply identifying the counties to be analyzed. Once the ROI is defined, the system aggregates the data, calculates "multipliers" and other variables used in the various models in EIFS, and prompts the user for input data.

The EIFS Impact Models

The basis of the EIFS analytical capabilities is the calculation of multipliers that are used to estimate the impacts resulting from Army-related changes in local expenditures and/or employment. In calculating the multipliers, EIFS uses the economic base model approach, which relies on the ratio of total economic activity to "basic" economic activity. Basic, in this context, is defined as the production or employment engaged to supply goods and services outside the ROI or by federal activities (such as military installations and their employees). According to economic base theory, the ratio of total income to basic income is measurable (as the multiplier) and sufficiently stable so that future changes in economic activity can be forecast. This

technique is especially appropriate for estimating "aggregate" impacts and makes the economic base model ideal for the EA/EIS process.

The multiplier is interpreted as the total impact on the economy of the region resulting from a unit change in its basic sector; for example, a dollar increase in local expenditures due to an expansion of a military installation. EIFS estimates its multipliers using a "location quotient" approach based on the concentration of industries within the region relative to the industrial concentrations for the Nation.

The user selects a model to be used from a menu of options. EIFS has models for three basic military activity scenarios: standard, construction, and training. The user inputs into the selected model those data elements which describe the Army action: civilian and military to be moved and their salaries, and the local procurement associated with the activity being relocated. Once these are entered into the system, a projection of changes in the local economy is provided. These are projected changes in sales volume, employment, income, and population. These four "indicator" variables are used to measure and evaluate socioeconomic impacts. It should be noted, however, that the EIFS models were designed as one-year projection models. The analyst must use the projections given and extrapolate expected changes in the socioeconomic environment over a number of years, allowing time for full build-out of each reuse scenario.

EIFS Input and Output Data for Reuse Scenarios

The Standard EIFS Forecast Model requires that the user input estimated changes in employment, changes in total expenditures for services and supplies, average income of incoming workers, and the percent of workers expected to relocate from outside the ROI.

Change in employment is calculated by subtracting the baseline worker population from the number of workers anticipated under each reuse intensity defined in Section 3.0. The average expenditure per employee is calculated from Bureau of Economic Analysis national inter-industry intermediate expenditures per employee that have been weighted to reflect county employment levels. The change in total expenditures for services and supplies is calculated for each reuse intensity by multiplying the expected change in number of workers by the average expenditure per employee for that reuse scenario.

The average income of workers is the average earnings for the county or counties in which the installation is located. Percent of workers expected to relocate from outside the ROI varies according to indicators such as unemployment and commuting patterns.

Following this text are the EIFS input and output data for each ROI under each reuse intensity scenario. These data form the basis for the socioeconomic impact analysis presented in Section 5.0.

The Significance of Socioeconomic Impacts

Once model projections are obtained, the Rational Threshold Value (RTV) profile allows the user to evaluate the "significance" of the impacts. This analytical tool reviews the historical trends for the defined region and develops measures of local historical fluctuations in sales volume, employment, income, and population. These evaluations identify the range of positive and negative changes within which a project can affect the local economy without creating a significant impact. The greatest historical changes define the boundaries that provide a basis for comparing an action's impact on the historical fluctuation in a particular area. Specifically, EIFS sets the boundaries by multiplying the maximum historical deviation of the following variables:

	<u>Increase</u>	<u>Decrease</u>	
Business volume	x	100%	75%
Personal income	x	100%	67%
Total employment	x	100%	67%
Total population	x	100%	50%

These boundaries determine the amount of change that will affect an area. The percentage allowances are arbitrary but sensible. The maximum positive historical fluctuation is allowed with expansion because economic growth is beneficial. While cases of damaging economic growth have been cited, and although the zero-growth concept is being accepted by many local planning groups, military base reductions and closures generally are more injurious to local economics than are expansions.

The major strengths of the RTV are its specificity to the region under analysis and its basis on actual historical data for the region. The EIFS impact models, in combination with the RTV, have proven successful in addressing perceived socioeconomic impacts. The EIFS model and the RTV technique for measuring the intensity of impacts have been reviewed by economic experts and have been deemed theoretically sound.

STANDARD EIFS FORECAST MODEL FOR FORT TOTTEN MEDIUM INTENSITY REUSE

Default price deflators:

baseline year (ex. business volume)	(CPI - 1987)	= 100.0
output and incomes (ex b.v.)	(CPI - 1993)	= 126.3
baseline year (business volume)	(PPI - 1987)	= 100.0
local services and supplies	(PPI - 1993)	= 115.7
output and incomes (business volume)	(PPI - 1993)	= 115.7

(Enter decreases as negative numbers)

If entering total expenditures, enter 1

local expenditures, enter 2 : 1

Change in expenditures for services and supplies: 8,194,141.95

Change in expenditures for local services and supplies: 5,744,197.50
(calculated)

Change in civilian employment: 382

Average income of affected civilian personnel: 30,224.70

Percent expected to relocate (enter <cr> to accept default): (0.0)

Change in military employment: 0

*** STANDARD EIFS MODEL FORECAST FOR FORT TOTTEN MEDIUM INTENSITY REUSE ***

Export income multiplier:	3.3446	
Change in local		
Sales volume	Direct:	\$14,248,000
	Induced:	\$33,406,000
	Total:	\$47,654,000 (0.060%)
Employment	Direct:	98
	Total:	709 (0.053%)
Income	Direct:	\$2,170,000
	Total (place of work):	\$18,803,000
	Total (place of residence):	\$18,803,000 (0.022%)
Local population		0 (0.000%)
Local off-base population		0
Number of school children		0
Demand for housing	Rental:	0
	Owner occupied:	0
Government expenditures.....		\$691,000
Government revenues		\$800,000
Net Government revenues		\$109,000
Civilian employees expected to relocate:		0
Military employees expected to relocate:		0

STANDARD EIFS FORECAST MODEL FOR FORT TOTTEN MEDIUM-LOW INTENSITY REUSE

Default price deflators:

baseline year (ex. business volume)	(CPI - 1987)	= 100.0
output and incomes (ex b.v.)	(CPI - 1993)	= 126.3
baseline year (business volume)	(PPI - 1987)	= 100.0
local services and supplies	(PPI - 1993)	= 115.7
output and incomes (business volume)	(PPI - 1993)	= 115.7

(Enter decreases as negative numbers)

If entering total expenditures, enter 1
 local expenditures, enter 2 : 1

Change in expenditures for services and supplies: 4,547,534.27
 Change in expenditures for local services and supplies: 3,187,879.25
 (calculated)
 Change in civilian employment: 212
 Average income of affected civilian personnel: 30224.70
 Percent expected to relocate (enter <cr> to accept default): (0.0)
 Change in military employment: 0

*** STANDARD EIFS MODEL FORECAST FOR FORT TOTTEN MEDIUM-LOW INTENSITY REUSE***

Export income multiplier:	3.3446	
Change in local		
Sales volume	Direct:	\$7,907,000
	Induced:	\$18,540,000
	Total:	\$26,447,000 (0.033%)
Employment	Direct:	54
	Total:	393 (0.030%)
Income	Direct:	\$1,204,000
	Total (place of work):	\$10,435,000
	Total (place of residence):	\$10,435,000 (0.012%)
Local population		0 (0.000%)
Local off-base population		0
Number of school children		0
Demand for housing	Rental:	0
	Owner occupied:	0
Government expenditures.....		\$383,000
Government revenues		\$444,000
Net Government revenues		\$60,000
Civilian employees expected to relocate:		0
Military employees expected to relocate:		0

STANDARD EIFS FORECAST MODEL FOR FORT TOTTEN LOW INTENSITY REUSE

Default price deflators:

baseline year (ex. business volume) (CPI - 1987)	= 100.0
output and incomes (ex b.v.) (CPI - 1993)	= 126.3
baseline year (business volume) (PPI - 1987)	= 100.0
local services and supplies (PPI - 1993)	= 115.7
output and incomes (business volume) (PPI - 1993)	= 115.7

(Enter decreases as negative numbers)

If entering total expenditures, enter 1

local expenditures, enter 2 : 1

Change in expenditures for services and supplies: -1,458,643.07

Change in expenditures for local services and supplies: -1,022,527.25
(calculated)

Change in civilian employment: -68

Average income of affected civilian personnel: 30,224.70

Percent expected to relocate (enter <cr> to accept default): (0.0)

Change in military employment:

*** STANDARD EIFS MODEL FORECAST FOR FORT TOTTEN LOW INTENSITY REUSE ***

Export income multiplier:	3.3446	
Change in local		
Sales volume	Direct:	
	Induced:	
	Total:	(\$ -8,483,000) (-0.011%)
Employment	Direct:	
	Total:	(-126) (-0.010%)
Income	Direct:	
	Total (place of work):	(\$-3,347,000)
	Total (place of residence):	(\$-3,347,000) (-0.004%)
Local population		(0.000%)
Local off-base population		
Number of school children		
Demand for housing	Rental:	
	Owner occupied:	
Government expenditures		-\$123,000
Government revenues		-\$142,000
Net Government revenues		-\$19,000
Civilian employees expected to relocate:		0
Military employees expected to relocate:		0