

Fort Drum Impact Estimator Version 2.0

Prepared for:



Fort Drum Regional Liaison Organization

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INTRODUCTION

This report contains the following materials related to the Fort Drum Impact Estimator volume

- 1) An explanation of changes to the model, including assumptions that have been updated as well as features that have been added
- 2) An overview of the results of model outputs using inputs from the 2007 Economic Impact Statement.
- 3) A users guide to assist future users of the model

MODEL UPDATES AND NEW FEATURES

Overview

Analysis of the economic and fiscal impacts of Fort Drum was first conducted by Nutter Associates and Economic Development Research Group during 1999. The findings are presented in a report, dated June 1999. The original projections and estimations of Fort Drum's impact were made using an economic simulation model that was developed for the tri-county area by Regional Economic Models, Inc. (REMI). The model was last updated in 2004 at the request of the Fort Drum Regional Liaison Organization (FDRLO). Since the REMI model was rented and would not be available for updated estimates, the project team developed a spreadsheet model that could be used to provide those estimates. The *Fort Drum Economic Impact Estimator* is the name of the original spreadsheet application.

The purpose of the current update is twofold. First, the model uses assumptions regarding the ratio of payroll per worker, number of children per worker and average household size, local and statewide consumer spending per person and taxes generated per person/household/employee. Additional assumptions allocate the costs and revenues among individual counties based on the distribution of Fort Drum worker residences as well as the workplace locations of Fort Drum suppliers. As these assumptions change over time, the model merits periodic updates.

Furthermore, the base transformation that took place between December, 2003 and September, 2007 resulted in material changes concerning the mix of military and civilian workers, the portion living off-base, and the assumed volume of Army and National Guard trainees passing through (relative to longer term base workers). Both base transformation and the current deployment climate have resulted in changes to rates of family accompaniment as well as the actual number of Fort Drum soldiers and their families present in the region.

This updated tool estimates regional economic impacts using IMPLAN multipliers. It is designed to calculate the complete economic and fiscal impact of Fort Drum based on the personnel and expenditure information published in the annual Fort Drum Economic Impact Statement produced by FDRLO.

The results of this update model have been tested against the previous version to ensure comparable results. Model updates and new features are described below, as

well as a discussion of how and why results of this model differ from those that would have been generated by the previous model.

Changes to Inputs

1. **On-Base Employment & Payroll** – the model has been calibrated to consider the impacts of retirees who remain in the area. The DoD Office of the Actuary reports the number of retirees from all branches of service living in the region as well as the total amount of benefits these retirees receive, as reported in the annual Fort Drum Economic Impact Statement. These figures are to be entered along with civilian personnel and payroll, as indicated on the model input form.
2. **Non-construction Spending** – The previous model used fixed ratios to allocate total non-construction spending across spending categories. These ratios were based on intensive review of base procurement patterns. However, each spending category has a different impact on the local economy depending on local use of supplies and labor, and a comparison of expenditures reported in the 2006 and 2007 Economic Impact Statements showed appreciable fluctuation in some categories. As a result, version 2.0 of the model allows the user to input non-construction expenditures by category, based on categories reported in the annual Economic Impact Statement. This feature allows the model to better account for changes in base expenditure patterns.
3. **Basic Demographic Information** – One of the most significant changes to this version of the model is the ability of the user to change assumptions regarding accompaniment rates for non-deployed soldiers, deployment rates, and accompaniment rates for deployed soldiers. In recent years, these patterns have shifted significantly, and they can be expected to continue to shift as time goes on. It should be noted that one of the results of this change is that while local fiscal costs drop immediately as soldiers are deployed and their families leave the area, revenues drop by a smaller proportion. For example, families who remain continue to generate sales tax by spending the household income generated by the deployed soldier, and families who leave, may leave a house unoccupied but still generating property tax (as property tax does not depend on occupancy).

Implications for Outputs

Economic Impacts

Deployed soldiers, and particularly soldiers whose families leave the region during deployment have a much smaller impact on the regional economy. This model accounts for all military payroll under direct impacts, but only the payroll associated with soldiers who are not deployed or whose families remain during deployment is allowed to flow through the economy to generate indirect/induced multiplier effects.

Fiscal Impacts

As with economic impacts, changes in deployment and accompaniment patterns have changed tax revenue and expenditure generation associated with Fort Drum. Because base expansion was accompanied by significant deployment, fiscal impacts were somewhat muted. Nonetheless, per capita fiscal costs in key categories such as general government and education (particularly at the local level) are on the rise, as are some revenue sources such as aid to local school districts.

REVIEW OF 2007 IMPACTS

Economic Impacts

Overview of Methodology

While the assumptions used to drive the Fort Drum Impact Estimator version 2.0 have been updated, the basic methodology is consistent with the previous version. A summary of the basic methodology is as follows. The economic impact portion of the estimator uses Implan multipliers to trace the impact of military and civilian payroll, as well as construction and non-construction expenditures through the regional economy. Impact categories are defined as follows:

Direct Impacts - The direct economic effects are comprised of 1) payroll (military and civilian on-post employees, including contract workers) spent by the US Department of Defense, and 2) non-payroll (outside) spending by the Department of Defense to vendors providing goods and services to Fort Drum.

Indirect Impacts - The indirect economic effects are additional (off-site) jobs and income supported by Fort Drum's non-payroll expenditures for services and supplies. The magnitude of total indirect effects depend on the types of purchases made and the extent to which those purchases go to businesses located within the region.

Induced Impacts - The induced economic effects result from re-spending of wages associated with direct and indirect employment. As workers re-spend their income on consumer purchases, they generate business sales and employment in other sectors of the economy, and as with indirect impacts, the magnitude of these induced effects depends on: the profile of consumer spending (amount and type of purchases) and the extent to which that spending goes to businesses in the region.

The estimator evaluates several measures of economic impact: Output, Gross Regional Product, and Personal Income. The model also estimates the employment, household and population generation that occur as a result of Fort Drum activities. Results for the 2007 fiscal year¹ are shown below in Table 1.

¹ Using base activity inputs from the "Fort Drum Economic Impact Statement for Fiscal Year 2007"

TABLE 1. SUMMARY OF ECONOMIC IMPACTS, 2007

Impact	Direct Impacts	Indirect/Induced Impacts	Total Impacts
Gross Output (\$ millions)	\$1,469.7	\$572.8	\$1,853.6
Business Sales (\$ millions)	n/a	\$572.8	\$572.8
GRP (Value added \$ millions)	\$1,032.4	\$582.9	\$1,615.3
Personal Income (Wages, \$ millions)	\$1,032.4	\$193.2	\$1,225.4
Employment	22,886	7,918	30,804
Fort Drum Population	34,618	20,191	54,809

Source: Fort Drum Impact Estimator v2.0 (Economic Development Research Group) using inputs from the Fort Drum Economic Impact Statement for FY 2007.

Fiscal Impacts

As with earlier versions of the estimator, this model evaluates the impacts of Fort Drum on local and state government revenues and expenditures. They reflect both the direct impact of Fort Drum itself, but also the government revenues and expenditures occurring because of indirect and induced changes in the region's employment and population base.

Local Government Impacts

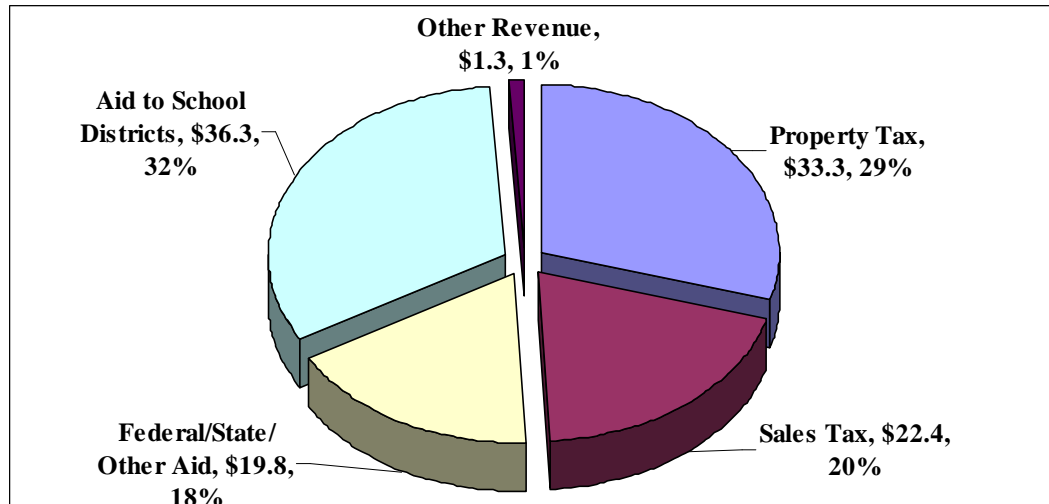
Local Government Revenues

Revenues for the counties, cities, towns, villages, fire districts and school districts in the region (Jefferson, Lewis, and St. Lawrence Counties) were summed to estimate region-wide government revenues in the following categories: (1) property taxes, (3) county sales tax, (4) aid to school districts, (5) other federal/state/miscellaneous aid, and (6) other taxes and fees.²

The total impact of Fort Drum on local government revenues in the region was an estimated \$113.2 million in 2007. This includes direct, indirect and induced impacts of Fort Drum on the region's economy and population. Revenue impacts by category are shown below in Figure 1. The leading source of revenues is aid to school districts (\$36.3 million), followed by property tax (\$33.3 million) and sales tax (\$22.4 million).

² The source for 2006 revenues and expenditures is the New York Office of the State Comptroller Local Government and School Accountability Division, Financial Data for Local Governments (Summary of Local Government Finances).

FIGURE 1. LOCAL REVENUE IMPACTS BY CATEGORY (\$S IN MILLIONS), 2007



Source: Fort Drum Impact Estimator v2.0 (Economic Development Research Group) using inputs from the Fort Drum Economic Impact Statement for FY 2007.

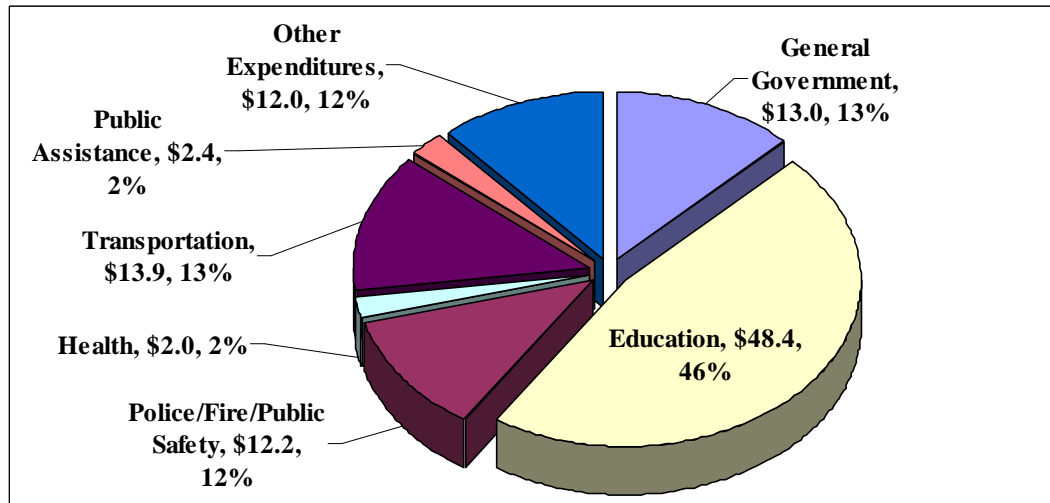
Local Government Expenditures

Categories of government expenditures incurred at the local level include: (1) general government (administration), (2) education, (3) police, (4) fire, (5) other public safety, (6) health, (7) transportation, (8) public assistance and (9) other (miscellaneous). Expenditures in these categories for all counties, cities, towns, villages, fire districts and school districts in Jefferson, Lewis and St. Lawrence Counties were summed to estimate region-wide government expenditures.

In general, these expenditures were estimated using constant per capita factors, which were applied to the change in population due to Fort Drum. The per capita factors for Fort Drum impacts were the same as those for the population at large, with the exception of **Health** and **Public Assistance** categories. Fort Drum provides on-base health and public assistance for its military personnel. For that reason, Fort Drum's military personnel put far lower per capita demands on these types of services offered by local government.

The fiscal impact model estimated the total impact of Fort Drum local government expenditures in the region at approximately \$103.9 million in 2007. This includes direct, indirect and induced impacts of Fort Drum on the region's economy and population. As figure 2 shows, the largest expenditure category is education (\$48.4 million), followed by general government administration (\$13.0 million).

FIGURE 2. LOCAL EXPENDITURE IMPACTS BY CATEGORY, 2007
 (\$ IN MILLIONS)



Source: Fort Drum Impact Estimator v2.0 (Economic Development Research Group) using inputs from the Fort Drum Economic Impact Statement for FY 2007.

State Government Impacts

This model consider revenue and expenditure impacts attributable to (1) military personnel and their accompanying family members and (2) civilian employees of Fort Drum as well as indirect/induced employment generated by the base, but not family members of civilian and indirect/indirect employees.

State Government Revenues

For the purposes of this analysis, state revenues were divided into seven categories: (1) personal income tax, (2) sales and other consumer taxes, (3) business taxes, (4) other taxes and fees, and (5) gaming, lottery and casino revenues.

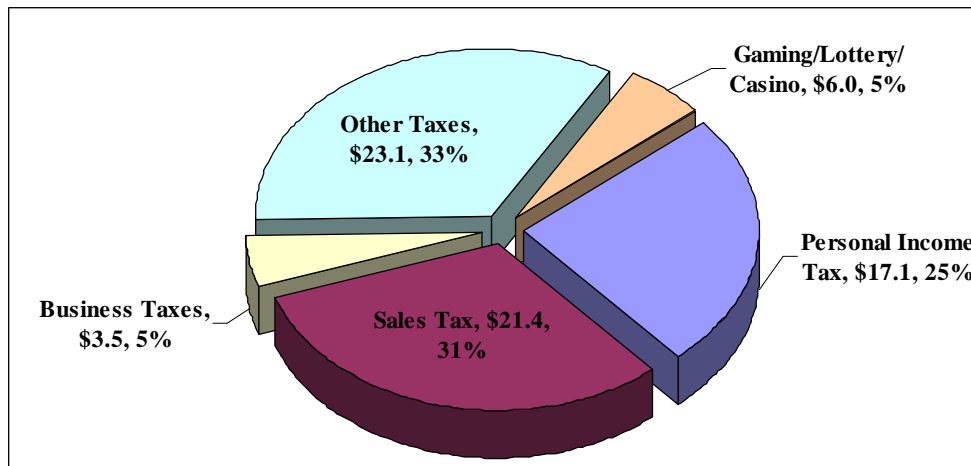
Key state tax revenue generation assumptions are as follows:

- The portion of income spent on taxable retail purchases (as opposed to housing and non-taxable services) by military personnel and their families is assumed to be roughly the same rate as that of the general population. However, they generate slightly less *Sales Tax* revenue, insofar as some of their purchases are made tax-free at the Post Exchange (PX).
- Military personnel contribute very little to New York State *Income Tax* revenues, as only a small portion of soldiers stationed at Fort Drum claim New York State as their state of residence. Therefore, the principal source of personal income tax revenue is accompanying spouses who are employed.

- While Fort Drum is the single largest employer in the Tri-County region, the base is a public facility and hence does not contribute to state **Corporate Tax** revenues. However, the indirect private business growth (generated as a consequence of Fort Drum spending) does generate additional state corporate tax income.
- **Federal Grant** aid is the largest category of revenue in the New York State budget. It is disbursed through a complex set of mechanisms, driven by many factors including population, poverty levels and unemployment. The actual effect of Fort Drum's military population on federal grants to New York State is unknown. The current estimates assume that federal grant receipts are proportional to the statewide population change associated with the base.

Given the assumptions described above, the total impact of Fort Drum on New York State government revenues was an estimated \$68.9 million in 2007, which includes revenue for both direct and indirect/induced employment and business activity. Figure 3 shows state revenue impacts by category.

FIGURE 3. STATE GOVERNMENT REVENUE IMPACTS BY CATEGORY, 2007 (\$ IN MILLIONS)



Source: Fort Drum Impact Estimator v2.0 (Economic Development Research Group) using inputs from the Fort Drum Economic Impact Statement for FY 2007.

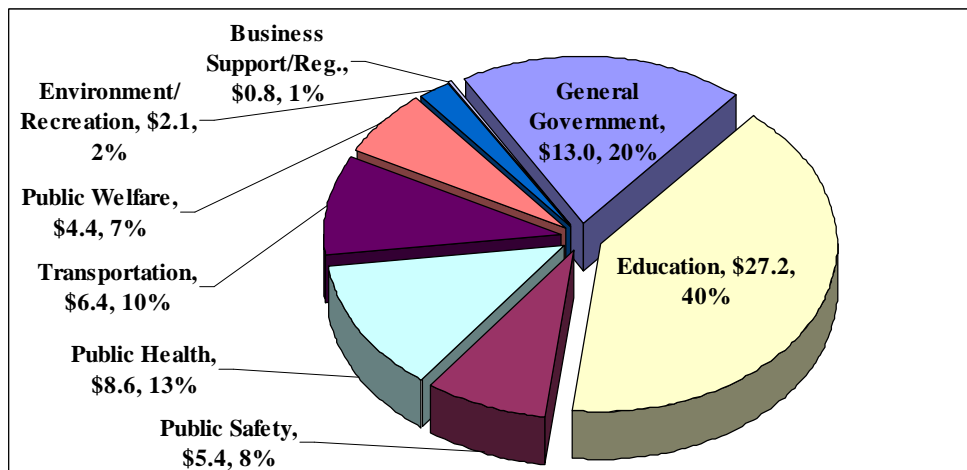
State Government Expenditures

The major categories of State government expenditures are: (1) general government, (2) education, (3) public safety, (4) public health, (5) transportation, (6) public welfare, (7) environment/recreation and (7) business support/regulation. These expenditures are estimated using per capita factors, applied to population associated with Fort Drum. In general, it is assumed that Fort Drum’s population generates expenditures at the same rate as the general population, with the exception of public health and public welfare. Because

the military provides these services for its soldiers and their dependents, the per capita factors for these categories are much lower.

The total impact of Fort Drum on New York State government expenditures was an estimated \$66.6 million in 2007. As with local expenditures, the largest category is education (\$27.2 million). The next largest categories were general government (\$13.0 million) and public health (\$8.6 million).

FIGURE 4. STATE GOVERNMENT EXPENDITURE IMPACTS BY CATEGORY, 2007 (\$ IN MILLIONS)



Source: Fort Drum Impact Estimator v2.0 (Economic Development Research Group) using inputs from the Fort Drum Economic Impact Statement for FY 2007.

Comparison with Previous Fiscal Impact Analysis

As discussed in the previous section, the current analysis reflects somewhat higher impacts than previous analyses, in terms of both costs and revenues for at the state and particularly the local level. The principal factors driving these increases are (1) rising costs of providing government services across the board, and tax increases to meet those costs and (2) increased numbers of personnel at Fort Drum. These factors are particularly evident at the local level, where most of the base’s economic activity takes place. Changing deployment and accompaniment patterns are also at play, as local fiscal costs drop while soldiers are deployed and their families leave the area, but revenues drop by a smaller proportion. For example, families who remain continue to generate sales tax by spending the household income generated by the deployed soldier, and families who leave, may leave a house unoccupied but still generating property tax (as property tax does not depend on occupancy).

Summary of Economic & Fiscal Impacts of Fort Drum

Fiscal Year 2007

Direct impacts occur on-base, while indirect/induced impacts occur off-base

ECONOMIC IMPACTS			
<u>Impact</u>	<u>Direct</u>	<u>Indirect/ Induced</u>	<u>Total Impact</u>
Gross Output (\$ millions)	\$1,469.7	\$572.8	\$2,042.5
Business Sales (\$ millions)	n/a	\$572.8	\$572.8
GRP (Value added \$m)	\$1,234.0	\$439.7	\$1,673.7
Personal Income (Wages, \$millions)	\$964.1	\$261.6	\$1,225.7
Employment	22,886	7,918	30,804
Fort Drum Population	34,618	20,191	54,809
FISCAL IMPACTS			
<i>LOCAL TAX IMPACTS*</i>		<i>STATE TAX IMPACTS</i>	
REVENUES	<u>(millions)</u>	REVENUES	<u>(millions)</u>
Local Tax Revenue Category		State Tax Revenue Category	
Property Tax	\$33.3	Personal Income Tax	\$17.1
Sales Tax	\$22.4	Sales Tax	\$21.4
Federal/State/Other Aid	\$19.8	Business Taxes	\$3.5
Aid to School Districts	\$36.3	Other Taxes	\$23.1
Other Revenue	\$1.3	Gaming/Lottery/Casino	\$3.9
Total Local Revenues	\$113.2	Total State Revenues	\$68.9
EXPENDITURES	<u>(millions)</u>	EXPENDITURES	<u>(millions)</u>
Local Tax Expenditure Category		State Tax Expenditure Category	
General Government	\$13.0	General Government	\$13.0
Education	\$48.4	Education (incl. aid to local schools)	\$27.2
Police/Fire/Public Safety	\$12.2	Public Safety	\$5.4
Health	\$2.0	Public Health	\$8.6
Transportation	\$13.9	Transportation	\$6.4
Public Assistance	\$2.4	Public Welfare	\$4.4
Other Expenditures	\$12.0	Environment/Recreation	\$1.3
Total Local Expenditures	\$103.9	Total State Expenditures	\$66.6

**Local tax impacts include revenues to/ expenditures by counties, cities, towns, villages, school districts and fire districts in Jefferson, Lewis and St. Lawrence counties.*



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