

# ECONOMIC IMPACT ANALYSIS OF MARINE CORPS BASE HAWAII



# Final Report

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Prepared by  
**Marstel-Day, LLC**  
Fredericksburg, VA



With Major Support from



## PREFACE

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The primary objective of this report is to assist the Commanding Officer, Marine Corps Base Hawaii in its mission of encroachment management, public affairs, and community relations by providing an analysis of the economic impacts of MCB Hawaii on the region. It is important, both for the installation and the community, to know the full range of economic effects on the local economy of an installation's employment and spending.

## TABLE OF CONTENTS

PREFACE .....	i
EXECUTIVE SUMMARY.....	1
CHAPTER 1: INTRODUCTION .....	4
CHAPTER 2: BACKGROUND .....	6
2.1 OVERVIEW OF THE STUDY AREA .....	6
2.2 SOCIOECONOMIC PROFILE .....	8
2.2.1 POPULATION .....	8
2.2.2 EMPLOYMENT .....	10
2.2.3 INCOME .....	13
CHAPTER 3: ANALYSIS RESULTS .....	14
3.1 SUMMARY RESULTS .....	14
3.2 MCB HAWAII PERSONNEL AND MILITARY RETIREES .....	16
3.3 MCB HAWAII SPENDING .....	17
3.3.1 CONSTRUCTION .....	18
3.3.2 RANGE TRAINING SUPPORT .....	19
3.3.3 WASTE MANAGEMENT .....	20
3.4 VISITOR SPENDING .....	20
APPENDIX A: METHODOLOGY .....	22
A.1 PRIMER ON ECONOMIC IMPACT ANALYSIS .....	22
A.1.1 TYPES OF EFFECT .....	22
A.1.2 MULTIPLIER EFFECTS .....	22
A.1.3 IMPACT METRICS .....	23
A.2 THE IMPLAN SYSTEM .....	24
A.2.1 IMPACT ANALYSIS IN IMPLAN .....	24
APPENDIX B: MODEL INPUTS .....	27
APPENDIX C: ADDITIONAL DATA TABLES .....	30
APPENDIX D: REFERENCES AND DATA SOURCES .....	35

## FIGURES AND TABLES

FIGURE 1: MAPS OF CENSUS DESIGNATED PLACES .....	6
FIGURE 2: MAP OF THE STUDY AREA.....	7
FIGURE 3: LEVEL AND PERCENT CHANGE IN POPULATION IN OAHU (1990, 1995, 2000-2012).....	8
FIGURE 4: AGE STRUCTURE OF SELECTED COMMUNITIES IN OAHU (2010) .....	9
FIGURE 5: UNEMPLOYMENT RATE IN OAHU AND THE U.S. (1990-2012).....	10
FIGURE 6: UNEMPLOYMENT RATE BY COUNTY (2007-2011) .....	11
FIGURE 7: PERCENTAGE OF TOTAL EMPLOYMENT FOR THE TOP SEVEN INDUSTRIES IN OAHU (2001, 2006 AND 2011).....	12
FIGURE 8: ASSESSMENT OF ECONOMIC IMPACTS WITH IMPLAN .....	26
TABLE 1: AGE STRUCTURE OF ACTIVE DUTY US MARINE CORPS PERSONNEL (AS OF 1 OCTOBER 2011) .....	10
TABLE 2: MEDIAN HOUSEHOLD INCOME (2000 AND 2007-2011).....	13
TABLE 3: TYPES OF ECONOMIC EFFECTS .....	14
TABLE 4: SUMMARY OF ECONOMIC IMPACTS BY IMPACT METRIC AND BY AREA.....	15
TABLE 5: SUMMARY OF ECONOMIC IMPACTS ON NEIGHBORING COMMUNITIES BY IMPACT METRIC AND BY TYPE OF EFFECT .....	15
TABLE 6: IMPACT OF MCB HAWAII PERSONNEL ON NEIGHBORING COMMUNITIES .....	16
TABLE 7: IMPACT OF MILITARY RETIREES ON NEIGHBORING COMMUNITIES .....	17
TABLE 8: IMPACT OF MCB HAWAII PERSONNEL AND MILITARY RETIREES ON STATE OF HAWAII.....	17
TABLE 9: TOTAL IMPACT OF MCB HAWAII TO THE STATE OF HAWAII .....	18
TABLE 10: IMPACT OF CONSTRUCTION SPENDING ON NEIGHBORING COMMUNITIES.....	18
TABLE 11: TOTAL IMPACT OF CONSTRUCTION SPENDING BY AREA .....	19
TABLE 12: TOTAL IMPACT OF RANGE TRAINING SUPPORT SERVICES SPENDING BY AREA .....	19
TABLE 13: TOTAL IMPACT OF WASTE MANAGEMENT SERVICES SPENDING BY AREA .....	20
TABLE 14: IMPACT OF VISITOR SPENDING ON NEIGHBORING COMMUNITIES.....	20
TABLE 15: TOTAL IMPACT OF VISITOR SPENDING BY AREA.....	21
TABLE 16: IDENTIFICATION OF IMPLAN SECTORS .....	28
TABLE 17: MODEL INPUTS (2012).....	29

## EXECUTIVE SUMMARY

The primary objective of this Economic Impact Analysis is to provide a comprehensive report of Marine Corps Base Hawaii's employment and spending effects on Hawaii's economy at three levels – state, city/county, and local. As a result, this report supports the installation's encroachment management, public affairs, and community relations missions.

The report's analysis relies primarily on 2012 payroll and contract spending data compiled by MCB Hawaii. Historical socio-economic data were also obtained from various state and national sources, including the U.S. Census Bureau, the Bureau of Labor Statistics and the Hawaii Department of Business, Economic Development and Tourism. The IMPLAN® economic assessment system was used to estimate MCB Hawaii's direct, indirect, and induced economic impacts on the neighboring communities, the island of Oahu, and the State of Hawaii.

The economic impacts of MCB Hawaii are summarized below. The results are provided for the neighboring communities, the island of Oahu/City and County of Honolulu, and the State of Hawaii for a number of key impact metrics that are fully analyzed Chapter 3 of the report.

- **Economic Impact:**
  - The direct effect of MCB spending on the State of Hawaii is **\$817 million**.
  - MCB Hawaii's total economic impact on the State of Hawaii is **\$1.5 billion**, \$895 million of which is labor income (including health benefits). Federal, state and local tax revenues generated by MCB Hawaii totaled \$74 million.
- **Employment Impact:**
  - MCB Hawaii In 2012, MCB Hawaii directly employed **14,335** military and civilian personnel, and resident contractors.
  - The base was responsible for **18,622 jobs** in the State of Hawaii. This total employment impact includes the military and civilian personnel on the base, as well as the jobs attributed to base, personnel, family, and visitor spending.
- **Military and Civilian Personnel:**
  - Military and civilian jobs at MCB Hawaii generated **\$665 million** in direct payroll.
  - Military and civilian personnel generated **\$1 billion in economic output** and **\$35 million in taxes** in the neighboring communities.
- **Retirees:**
  - The number of Marine Corps retirees living in the neighboring communities in 2012 was estimated at **355**; their total pensions and retiree health benefits totaled **\$12 million**.
  - Through purchases of household goods and other forms of personal consumption, military retirees and their families contributed **\$5 million** to the local economic output.

- **Base Spending:**
  - Direct spending by MCB Hawaii within the State of Hawaii totaled **\$103 million** in maintenance and construction expenditures and an additional **\$4 million** in range support and waste management services.
  - Base spending generated approximately **\$179.5 million** in economic output, **1,189 jobs**, and **\$8 million** in state and local taxes. Of these totals, the neighboring communities were the primary beneficiaries: MCB Hawaii spending in neighboring communities resulted in **\$139 million** in economic output, **936 jobs**, and **\$6 million** in state and local taxes.
  
- **Visitor Spending:**
  - Visitor spending in neighboring communities totaled **\$11 million**.
  - The effects of visitor spending (i.e. lodging, transportation, food services, retail, and recreational activities) generated **\$15 million** in economic output in the neighboring communities in 2012 and resulted in **152 jobs**.
  
- **Local Significance:** MCB Hawaii is the largest civilian employer in the windward Oahu region. The base and its personnel represent the main client base of most local businesses. In 2012, **93 percent (17,243 jobs)** of its total employment impact and a **total economic impact of 86 percent** occurred in the neighboring communities. The majority of this impact occurred in the Windward Oahu communities.

### Summary of Economic and Employment Benefits Attributed to MCB Hawaii

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
<b>Output (Total Impact)</b>	<b>\$1,257.1</b>	\$1,454.7	\$1,466.9
Value added	\$1,105.0	\$1,211.8	\$1,217.1
Labor income	\$831.3	\$891.5	\$894.7
Employment	<b>17,243</b>	18,524	18,612
Taxes	<b>\$54.0</b>	\$72.5	\$73.6
Federal taxes	\$28.5	\$38.2	\$38.7
State/Local taxes	\$25.5	\$34.3	\$34.9

Note: All dollar amounts are expressed in millions of 2012 dollars. Output equals the total economic impact of MCB Hawaii; Value Added, Labor Income, and Taxes are all considered in arriving at the Output figure. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.

### Summary of Economic Impacts on Neighboring Communities by Impact Metric and by Type of Effect

Impact Metric	Direct	Indirect	Induced	Total
<b>Output (Total Impact)</b>	<b>\$967.6</b>	<b>\$14.8</b>	<b>\$274.7</b>	<b>\$1,257.1</b>
Value added	\$920.9	\$9.5	\$174.6	\$1,105.0
Labor income	\$726.8	\$6.6	\$97.8	\$831.3
Employment	14,808	155	2,280	<b>17,243</b>
Taxes				<b>\$54.0</b>
Federal taxes				\$28.5
State/Local taxes				\$25.5

Note: All dollar amounts are expressed in millions of 2012 dollars.



## CHAPTER 1: INTRODUCTION

With nearly 14,000 active duty personnel and civilians,<sup>1</sup> Marine Corps Base (MCB) Hawaii in Kaneohe Bay, HI is the largest civilian employer in the windward Oahu region. Its main facilities at Kaneohe Bay and Camp Smith are home to a number of key tenant organizations:

- Kaneohe Bay
  - 3d Marine Regiment
  - Marine Aircraft Group 24 (MAG-24)
  - 1st Bn 12th Mar Regt (Arty)
  - Combat Logistics Battalion 3 (CLB-3)
  - 3d Radio Battalion
  - Patrol and Reconnaissance Wing Two
  - Navy C-20 Logistics Support Squadron)
  - Anti-Submarine Helicopter Squadron HSL-37
  - VMR Detachment (USMC's only C-20 (Gulfstream IV)
  - 4th Force Reconnaissance Company
  
- Camp Smith
  - Commander, US Pacific Command (USPACOM)
  - Commander, Marine Forces Pacific (MARFORPAC)
  - Special Operations Command Pacific
  - Joint Interagency Task Force West

When accounting for local businesses that rely on purchases by the base or by its personnel and their families, the influence of MCB Hawaii on the neighboring communities is even more decisive.

The primary objective of this Economic Impact Analysis is to provide a comprehensive report of Marine Corps Base Hawaii's employment and spending effects on Hawaii's economy. The report supports the installation's encroachment management and public affairs/community relations missions.

The report's analysis relies primarily on 2012 payroll and contract spending data compiled by MCB Hawaii. Historical socio-economic data were also obtained from various state and national sources, including the U.S. Census Bureau, the Bureau of Labor Statistics and the Hawaii Department of Business, Economic Development

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<sup>1</sup> See Appendix C on page 30 for details.

and Tourism. The IMPLAN® economic assessment system was used to estimate MCB Hawaii's direct, indirect, and induced economic impacts on the neighboring communities, the island of Oahu, and the State of Hawaii.

This study examines the economic impacts of MCB Hawaii on three overlapping areas: the State of Hawaii, the island of Oahu (synonymous with the City and County of Honolulu), and the neighboring communities to MCB Hawaii's most significant facilities. The island of Oahu is the geographical entity whose government is the City and County of Honolulu, and in this study the name "Oahu" is used most often to discuss economic effects within that jurisdiction.

For the neighboring communities, US Census Designated Place (CDP) locations, which roughly correspond to zip codes, were used to represent the communities neighboring MCB Hawaii. Throughout this study, the place name used is that of the geographic area that comprises a CDP adjacent to or encompassing a major MCB Hawaii facility. MCB Hawaii Kaneohe Bay indicates that part of MCB Hawaii located on Mokapu Peninsula on windward Oahu. Kailua and Kaneohe are the communities adjacent to MCB Hawaii Kaneohe Bay. Waimanalo encompasses Marine Corps Training Area Bellows, just south of Kailua, and Aiea surrounds Camp HM Smith on the leeward side of the island.

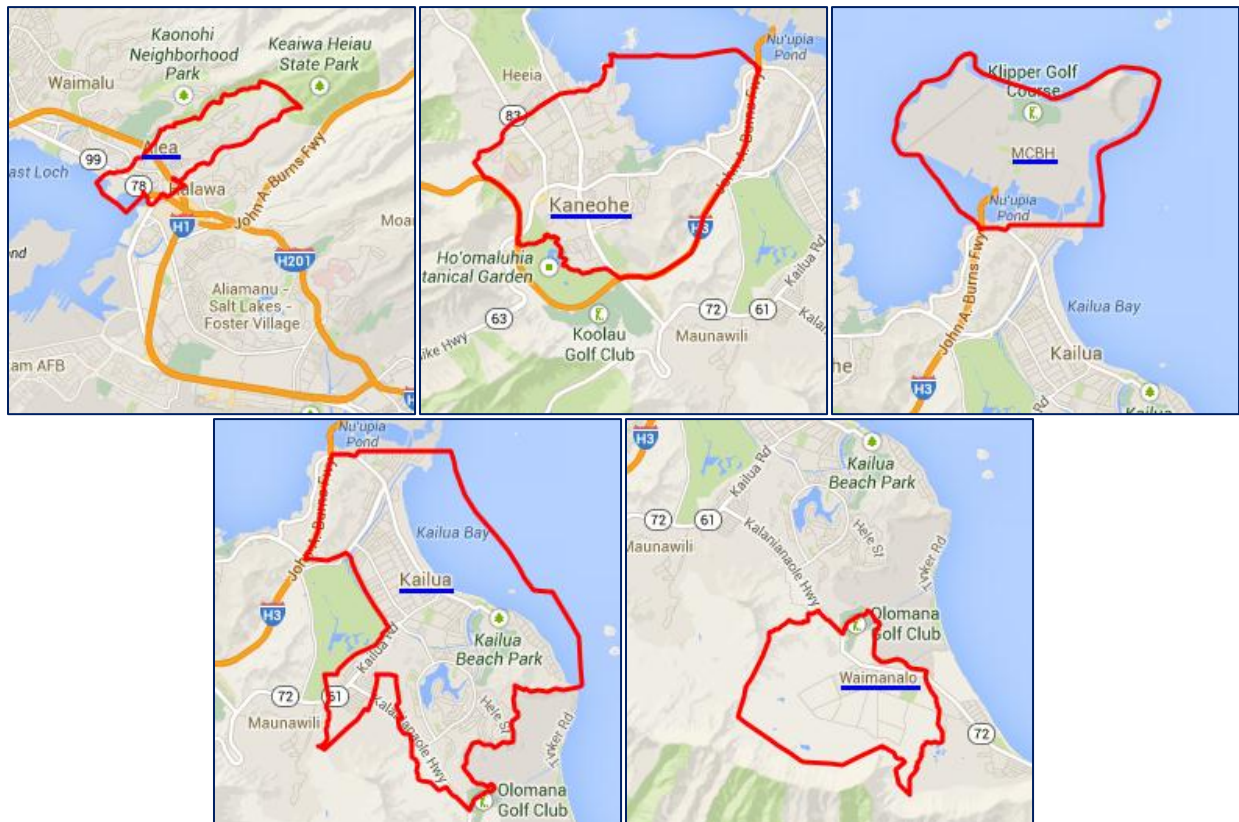
## CHAPTER 2: BACKGROUND

This chapter provides information about the socio-economic background of the study area and discusses the role played by the Marine Corps Base Hawaii. Section 2.1 provides a brief description of the study area. Demographic and economic conditions and trends are presented in Section 2.2. Historical socio-economic data for this chapter were obtained from various state and national sources, including the U.S. Census Bureau, the Bureau of Labor Statistics and the Hawaii Department of Business, Economic Development and Tourism.

### 2.1 Overview of the Study Area

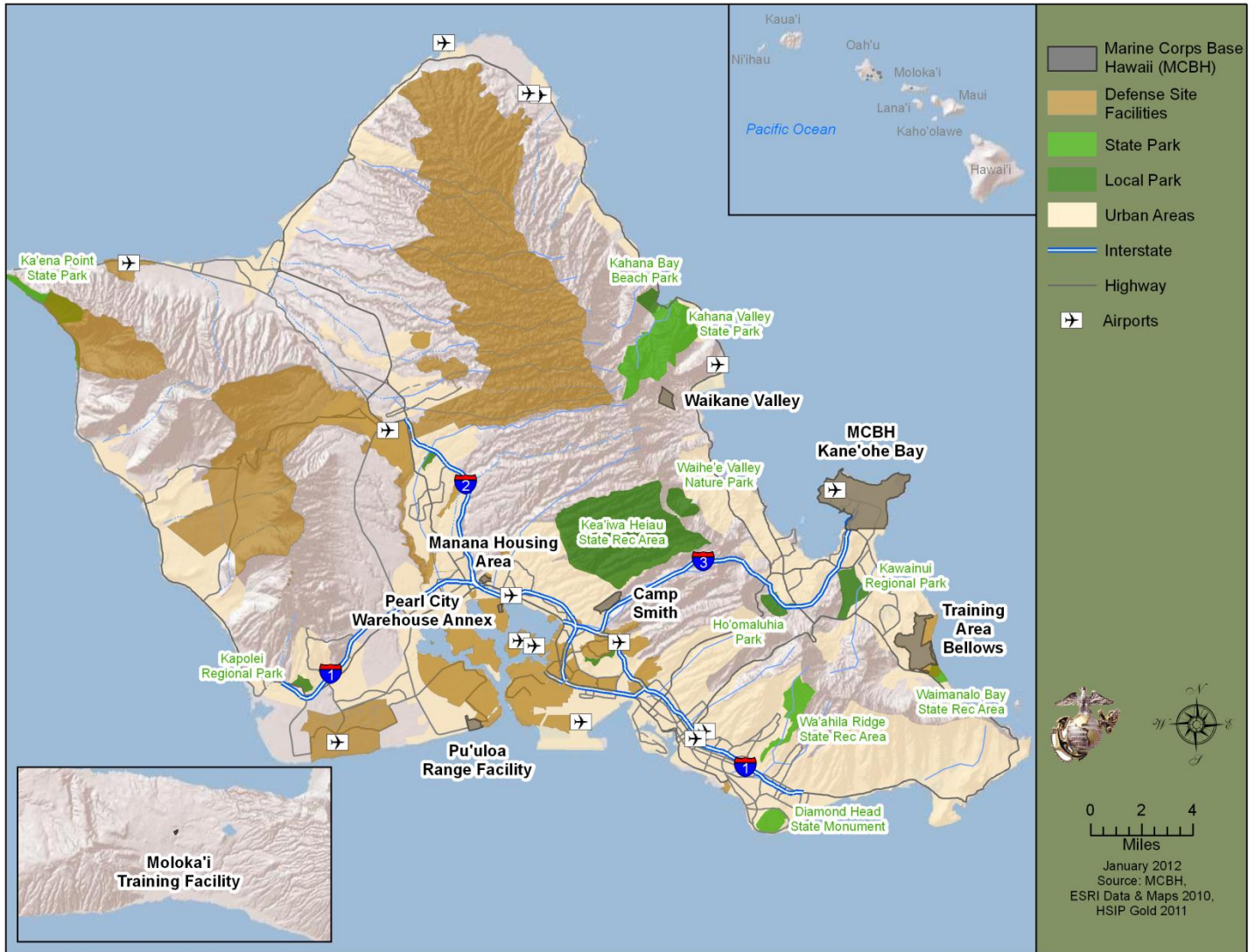
MCB Hawaii headquarters is located at MCB Hawaii Kaneohe Bay (the CDP Kaneohe Station), on the windward coast of Oahu, approximately 12 miles northeast of Honolulu. MCB Hawaii Kaneohe Bay occupies the entire Mokapu Peninsula, with a land area of 4.4 square miles. It is bordered to the southeast by the Kailua CDP and to the southwest by the Kaneohe CDP. MCB Hawaii also operates several other facilities on the island. The most significant of these are Marine Corps Training Area Bellows, located south of Kailua in the Waimanalo CDP, and Camp HM Smith, located in the Aiea CDP, as seen in Figures 1 and 2.

**Figure 1: Maps of Census Designated Places**



Source: Map data © 2013 Google.

Figure 2: Map of the Study Area



Source: Marstel-Day LLC.

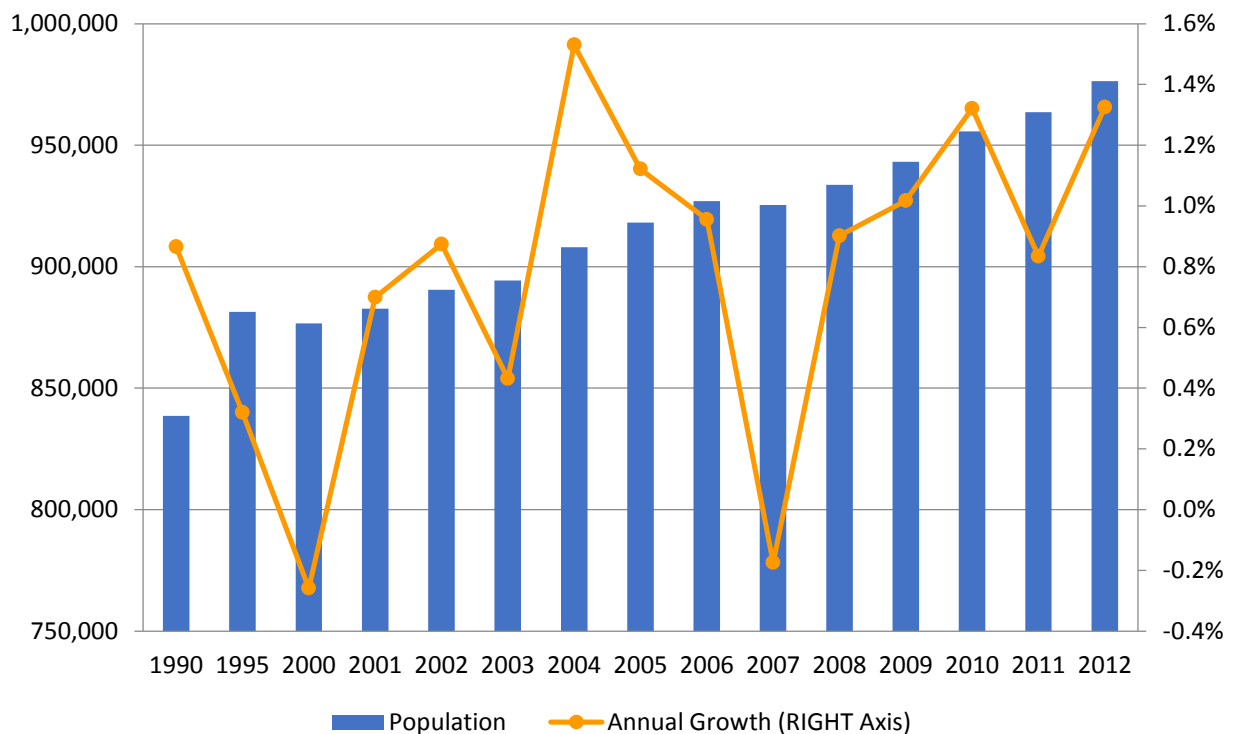
## 2.2 Socioeconomic Profile

Hawaii's geographic isolation and limited natural resources have largely influenced both its demography and economic development to this day.

### 2.2.1 Population

In 2012, the City and County of Honolulu had a population of 976,372. Since 1990 the county population has increased by 0.7 percent per year on average. This is slightly slower than the average annual population growth of Hawaii, which was 1.0 percent over the same period. As shown in Figure 3, the annual growth rate for Oahu hovered around 1.0 percent, with the exception of 2000 and 2007 when the county experienced a slight decline in population.<sup>2</sup>

**Figure 3: Level and Percent Change in Population in Oahu (1990, 1995, 2000-2012)**



Source: State of Hawaii, Department of Business, Economic Development & Tourism, Research and Economic Analysis Division, 2013.

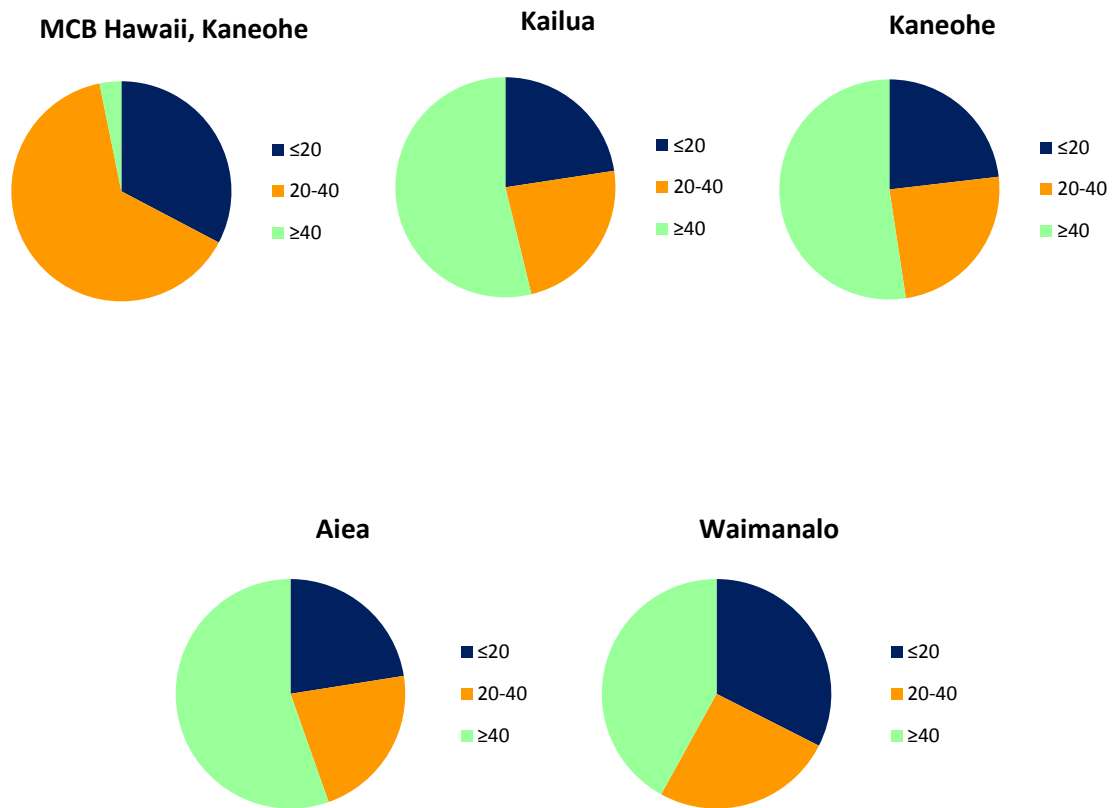
MCB Hawaii Kaneohe Bay is more densely populated than Oahu as a whole (2,171 persons per square mile vs. 601 persons per square mile). From 2000 to 2010, MCB Hawaii Kaneohe Bay's population decreased from 11,827 to 9,517 (-19.5 percent). This decline contrasts with the overall trend on Oahu and the surrounding

<sup>2</sup> It is likely that the decline in population in 2007 is due to an increased number of retirees leaving the island (because of the high cost of living) and/or military deployments. See <http://archives.starbulletin.com/2008/03/20/news/story04.html>.

communities of Aiea, Waimanalo, Kailua and Kaneohe, where populations remained constant or increased slightly during the same period.

MCB Hawaii Kaneohe Bay's population is younger than that of the general population of Oahu. As of the 2010 Census, 97 percent of MCB Hawaii Kaneohe Bay's population was less than 40 years of age and 64 percent of the population was between the ages of 20 and 40. This can be explained by a primarily younger active duty military population at MCB Hawaii. As indicated by Figure 4 below, the age structure of the surrounding communities is more balanced and more similar to the state's, with a large portion of residents greater than 40 years old.

**Figure 4: Age Structure of Selected Communities in Oahu (2010)**



Source: U.S. Census Bureau, 2010 Census.

Table 1 shows that about a third of active duty USMC personnel are aged 21 years or less, and more than 81 percent are aged 31 years or less. As of 2012, staffing at MCB Hawaii consisted of approximately 11,500 Marines and sailors as well as 2,568 civilian employees.

**Table 1: Age Structure of Active Duty US Marine Corps Personnel (as of 1 October 2011)**

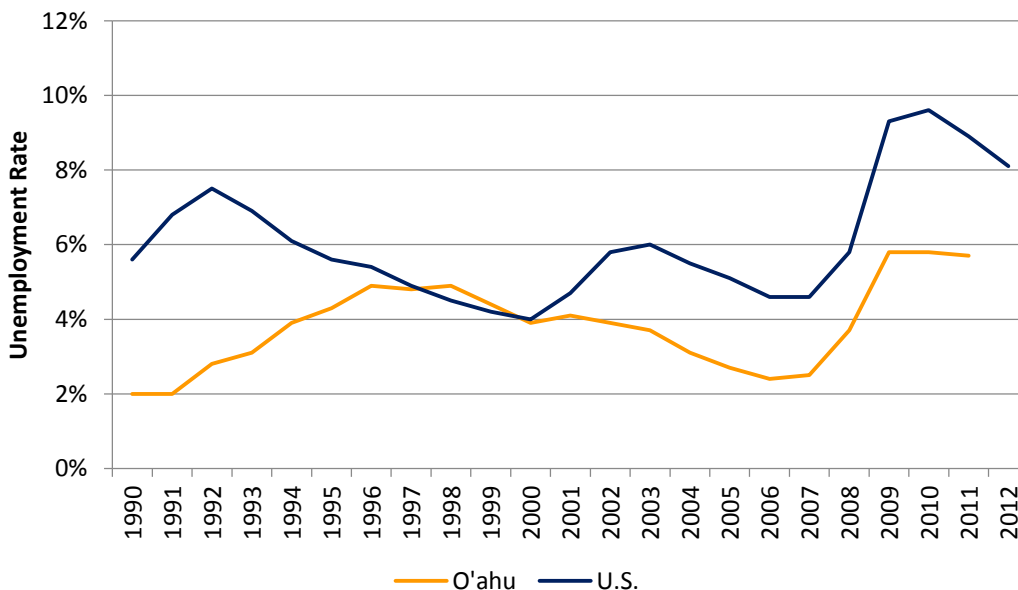
Age Group	Officers		Enlisted		Total	
	Number	Percent	Number	Percent	Number	Percent
<22	17	0.1%	65,893	36.7%	65,910	32.8%
23-25	3,441	15.8%	56,912	31.7%	60,353	30.0%
26-30	5,793	26.5%	31,368	17.5%	37,161	18.5%
31-35	4,505	20.6%	13,577	7.6%	18,082	9.0%
36-40	4,215	19.3%	8,089	4.5%	12,304	6.1%
>40	3,851	17.6%	3,496	1.9%	7,347	3.7%

Source: MCB Hawaii.

### 2.2.2 Employment

Since 1990 the unemployment rate on Oahu has been lower than (or at par with) the state and the nation as a whole. Figure 5 below shows the unemployment rate for Oahu and the U.S. over the period 1990-2012. From 2007 to 2009, Oahu's unemployment rate more than doubled, from 2.5 percent to 5.8 percent, largely as a result of the Recession during those years.

**Figure 5: Unemployment Rate in Oahu and the U.S. (1990-2012)**



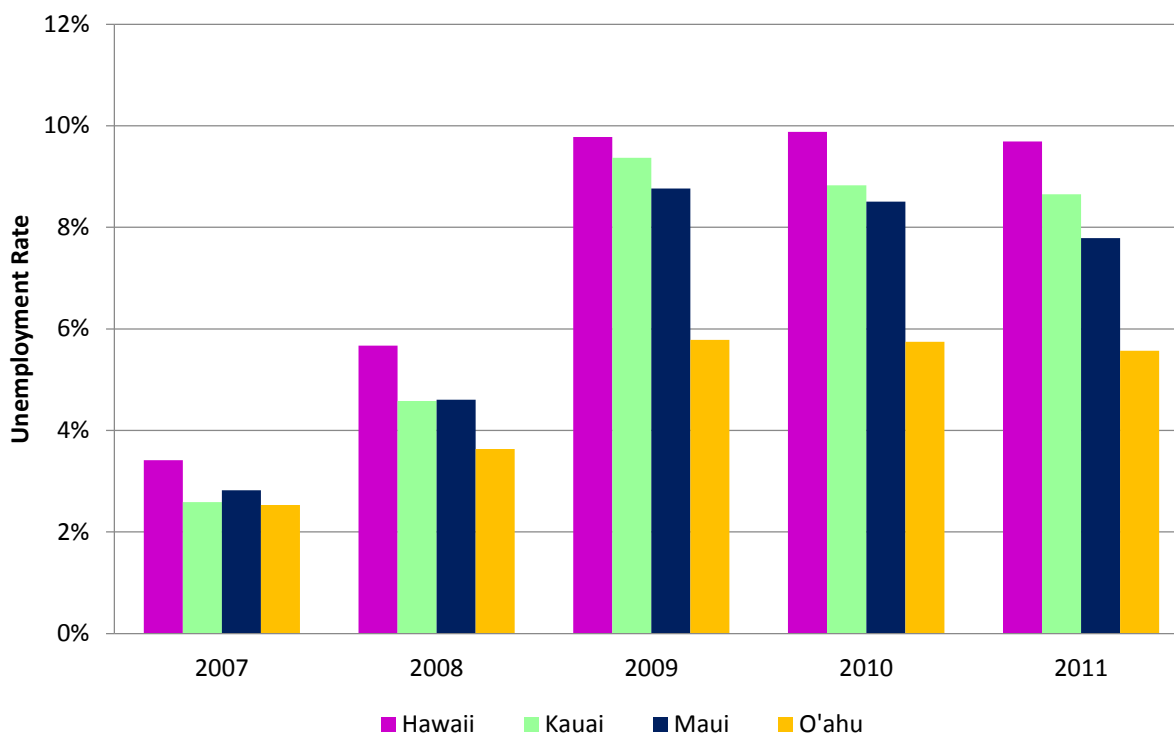
Source: U.S. Department of Commerce, Bureau of Labor Statistics, Local Area Unemployment Statistics (LAUS).

Despite a sharp increase in unemployment, the impact of the 2007-2009 Recession on Oahu was not as severe as elsewhere in Hawaii. Approximately 25 percent of all jobs in Oahu are attributed to government services,<sup>3</sup> which are traditionally less sensitive to business cycles than the private sector.

Figure 6 illustrates the trends of the unemployment rate among the four Hawaii counties from the onset of the housing crisis in 2007 to the start of the job market recovery in 2011. In 2011, Oahu’s unemployment rate was estimated at 5.7 percent; whereas, the U.S. average hovered around 9.0 percent. The 2011 unemployment rates for Kauai, Maui and Hawaii Counties – 8.8 percent, 7.9 percent and 9.9 percent respectively – were closer to the national rate after the recession.

Also, the strong presence of the military (and their families) on the island has an unintended effect on the unemployment rate: although a decline in personnel in the area has little effect on the unemployment rate because they (along with their spouses) tend to leave the area, a reduction in personnel at MCB Hawaii (i.e., reduction in labor demand) will lead to a decline in the labor force (i.e., reduction in labor supply).

**Figure 6: Unemployment Rate by County (2007-2011)**



Source: State of Hawaii, Department of Business, Economic Development & Tourism, Research and Economic Analysis Division, 2013.

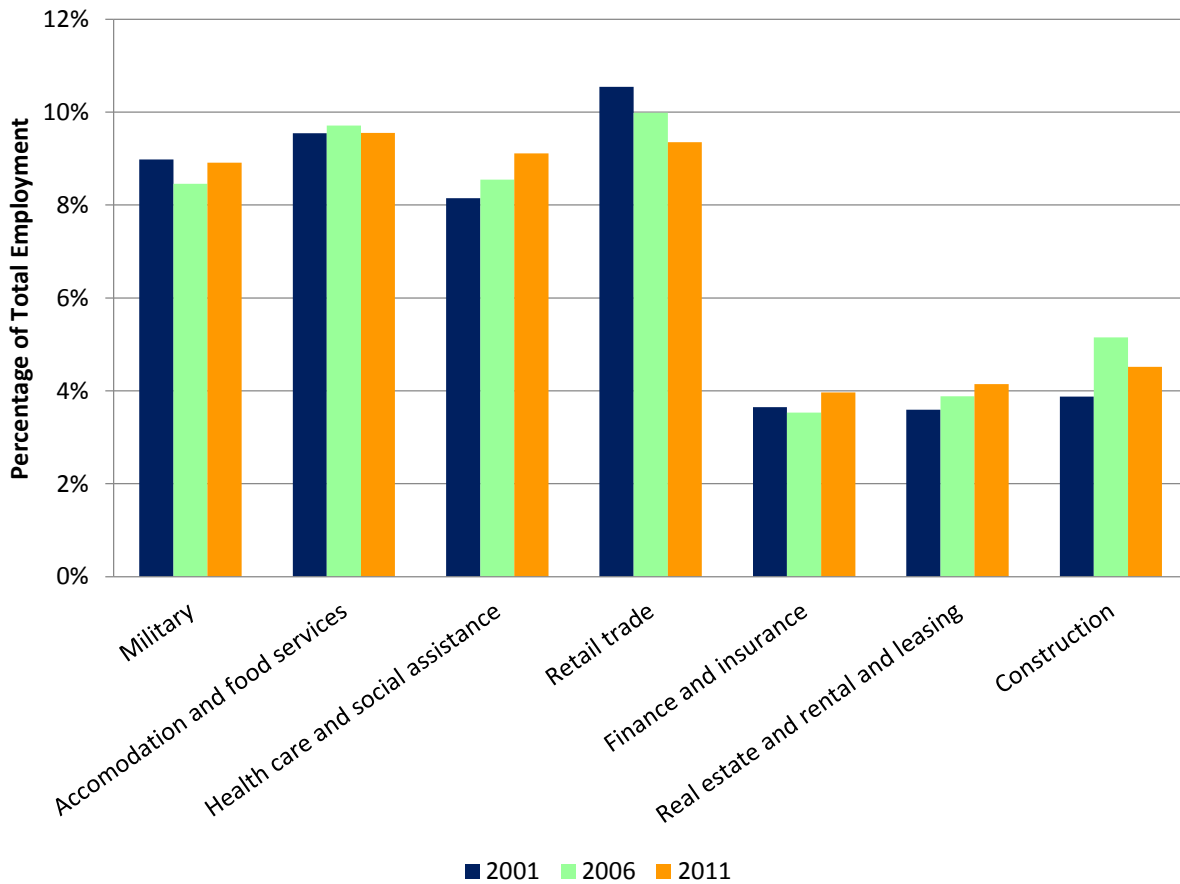
The top seven aggregate industries out of total employment in 2001, 2006 and 2011 made up about 50 percent of all employment on Oahu. Figure 7 shows the respective share of employment of these industries.

<sup>3</sup> Breakdown of 25 percent government service jobs: 14.2 percent in Federal government (civilian and military), 8.9 percent in state government and 2.0 percent in local government (Bureau of Economic Analysis, *Regional Economic Accounts*).



Aside from the government sector, the three largest industries on Oahu are Accommodation and Food Services, Health Care/Social Assistance, and Retail Trade. On Oahu, the Finance and Insurance sector, as well as the Real Estate sector, have experienced the most growth since 2001. The majority of all real estate businesses in the State of Hawaii are located on Oahu. Not surprisingly, employment in the Construction industry has experienced large fluctuations: it grew rapidly in the first half of the 2000s before declining as a result of the housing crisis and the ensuing Recession.

**Figure 7: Percentage of Total Employment for the Top Seven Industries in Oahu (2001, 2006 and 2011)**



Source: Bureau of Economic Analysis, Regional Economic Accounts.

### 2.2.3 Income

Over the period 2007-2011, Oahu had an average poverty rate of 9.3 percent and a median household income of \$71,263 (in 2011 dollars). By comparison, MCB Hawaii Kaneohe Bay had a median household income of \$48,797. As shown in Table 2, MCB Hawaii Kaneohe Bay differs from neighboring communities because of its

younger age structure and the presence of MCB Hawaii. Aiea, Kailua, and Kaneohe are all relatively affluent areas with median household incomes that are substantially higher than the national average.<sup>4</sup>

**Table 2: Median Household Income (2000 and 2007-2011)**

Geographic Area	Median Household Income	
	2000	2007-2011
MCB Hawaii Kaneohe Bay CDP	\$34,757	\$48,797
Aiea CDP	\$71,155	\$90,739
Kailua CDP	\$72,784	\$93,539
Kaneohe CDP	\$66,006	\$82,686
Waimanalo CDP	\$47,594	\$69,974
<b>Island of Oahu</b>	<b>\$51,914</b>	<b>\$71,263</b>
<b>State of Hawaii</b>	<b>\$49,920</b>	<b>\$67,116</b>

*Note: The U.S. Census Bureau recommends using caution when comparing data from the American Community Survey (ACS) with data from the decennial census because these surveys use different methods, which could affect the comparability of the estimates.*

*Sources: U.S. Census Bureau, Census 2000 and American Community Survey 2007-2011, 5-year estimates.*

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<sup>4</sup> Poverty rate is determined by the U. S. Census Bureau using a set of dollar value thresholds that vary by family size and composition and by age. See <http://www.census.gov/prod/2012pubs/acsbr11-01.pdf>.

## CHAPTER 3: ANALYSIS RESULTS

This chapter presents the results of the economic impact analysis. Based on the methodology and the model inputs for each spending category presented in Appendices A and B, the economic impacts of MCB Hawaii were estimated in IMPLAN<sup>®</sup> by means of multi-regional analysis for the neighboring communities, the island of Oahu, and the State as a whole. The total economic impact is the sum of the three types of effects commonly referred to as direct effects, indirect effects, and induced effects as defined in Table 3.<sup>5</sup> The resulting economic and fiscal impacts for the year 2012 are presented in this chapter.

**Table 3: Types of Economic Effects**

Types of Effects	Definitions
<b>Direct effect</b>	Refers to the economic activity occurring as a result of direct spending by businesses or agencies located in the study area
<b>Indirect effect</b>	Refers to the economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies
<b>Induced effect</b>	Represents the increase in economic activity, over and above the direct and indirect effects, associated with increased labor income that accrue to workers (of the contractor and all suppliers, in our example) and is spent on household goods and services purchased from businesses within the study area

### 3.1 Summary Results

As shown in Table 4 on the following page, when accounting for the multiplier effect, the total contribution of MCB Hawaii to state employment in 2012 is estimated at 18,622 jobs, including 14,090 military and civilian personnel at the base. These employees earned a combined \$895.1 million in labor income (including health benefits) and generated about \$1.5 billion in output, or \$1.2 billion in value added.<sup>6</sup> Federal, state and local tax revenues generated by MCB Hawaii totaled \$73.8 million.

Nearly 93 percent of the total employment impact (or 17,243 jobs) and 86 percent of the total output impact (or \$1.26 billion) occurred in the neighboring communities. Note also that the economic impact on the State outside of Oahu is negligible; this result is in line with expectations, as the Hawaii economy is loosely integrated.

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<sup>5</sup> Indirect and induced effects are sometimes referred to as multiplier effects since they can make the total economic impact substantially larger than the direct effect alone. For more information, see Appendix A, Section A.1.2.

<sup>6</sup> Value added can be thought of as a measure of the contribution to the gross domestic product (GDP) made by an establishment or an industry in the form of employee compensation, proprietary income, other property type income, and indirect business taxes such as sales tax. For more information, see Appendix A, Section A.1.3.

**Table 4: Summary of Economic Impacts by Impact Metric and by Area**

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
Output	\$1,257.1	\$1,454.7	\$1,466.9
Value added	\$1,105.0	\$1,211.8	\$1,217.1
Labor income	\$831.3	\$891.5	\$894.7
Employment	17,243	18,524	18,612
Taxes	\$54.0	\$72.5	\$73.6
Federal taxes	\$28.5	\$38.2	\$38.7
State/Local taxes	\$25.5	\$34.3	\$34.9

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

Although the contribution of MCB Hawaii to the *state* economy is not substantial (less than 1 percent of state output and employment), its impact on the *local* economy is overwhelming. Not only is MCB Hawaii by far the number one employer, but also the base and its personnel along with their families represent the main client base of most local businesses. Table 5 shows that 2,280 jobs generated in the neighboring communities are associated with spending by employees of the base and employees of its suppliers (induced effect). By contrast, supply chain spending (indirect effect) accounted for just 155 jobs. In addition, the table shows that direct expenses associated with the presence of MCB Hawaii<sup>7</sup> accounted for 86 percent of total employment impact (14,808) and 77 percent of total output impact<sup>8</sup> in the neighboring communities.

**Table 5: Summary of Economic Impacts on Neighboring Communities by Impact Metric and by Type of Effect**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$967.6	\$14.8	\$274.7	\$1,257.1
Value added	\$920.9	\$9.5	\$174.6	\$1,105.0
Labor income	\$726.8	\$6.6	\$97.8	\$831.3
Employment	14,808	155	2,280	17,243
Taxes				\$54.0
Federal taxes				\$28.5
State/Local taxes				\$25.5

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

<sup>7</sup> As discussed in Appendix A, these expenses include MCB Hawaii personnel payroll (and health benefits); military retirees' pensions (and health benefits); MCB Hawaii spending (i.e., procurement); and visitor spending.

<sup>8</sup> See Section A.1.3 in Appendix A for an explanation of impact metrics.

### 3.2 MCB Hawaii Personnel and Military Retirees

Military and civilian personnel at MCB Hawaii generated \$1.1 billion in economic output and \$34.7 million in taxes in the neighboring communities in 2012.

It is noteworthy that the direct employment effect reflects all MCB Hawaii personnel, regardless of their respective place of residence, whereas the induced employment effect accounts solely for personnel residing on base and in the adjacent communities. Also, there is no indirect effect associated with MCB Hawaii personnel because a military installation does not produce goods or services like other sectors of the economy (i.e., there is no production function). Finally, note that the effects of personnel are a function of total payroll, regardless of the type of personnel (military vs. civilian).<sup>9</sup>

A summary of the impact results associated with MCB Hawaii personnel is provided in Table 6 below. The results are broken down by impact metric (output, value added, labor income, employment and taxes) and by type of effect (direct, indirect, induced and total).

**Table 6: Impact of MCB Hawaii Personnel on Neighboring Communities**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$853.1	\$0.0	\$244.2	\$1,097.3
Value added	\$853.1	\$0.0	\$155.2	\$1,008.3
Labor income	\$675.2	\$0.0	\$86.9	\$762.1
Employment	14,090	0	2,021	16,111
Taxes				\$34.7
Federal taxes				\$17.1
State/Local taxes				\$17.6

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

In addition, the number of Marine Corps retirees living in the neighboring communities in 2012 is estimated at 355. These retirees take advantage of the services offered at MCB Hawaii and they (along with their families) would probably leave the area in its absence.

Through purchases of household goods and other forms of personal consumption, military retirees contributed \$5.2 million to the local economic output, thus creating 44 jobs. A complete summary of the economic impacts associated with military retirees is provided in Table 7 on the following page. Note that there are no direct or indirect effects because military retirees do not represent an economic sector and only their retirement pensions are accounted for in the analysis.

<sup>9</sup> When considering the effects associated with personnel it should be noted that military personnel do not impact the local economy the same way civilian personnel do. Overall, military personnel tend to spend less money locally. In particular, they spend a significantly smaller portion of their income on housing as many of them are living in government quarters (such as dormitories or barracks). Also, some military personnel may be deployed abroad or in training off-base for long periods of time.

**Table 7: Impact of Military Retirees on Neighboring Communities**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$0.0	\$0.0	\$5.2	\$5.2
Value added	\$0.0	\$0.0	\$3.3	\$3.3
Labor income	\$0.0	\$0.0	\$1.9	\$1.9
Employment	0	0	44	44
Taxes				\$0.7
Federal taxes				\$0.4
State/Local taxes				\$0.4

Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.

At the state level, MCB Hawaii personnel and military retirees residing in the vicinity of the base generated a combined \$1.269 billion in economic output and \$51.9 million in taxes, including \$26.0 million in state and local taxes (see Table 8).

**Table 8: Impact of MCB Hawaii Personnel and Military Retirees on State of Hawaii**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$853.1	\$0.0	\$416.5	\$1,269.6
Value added	\$853.1	\$0.0	\$249.2	\$1,102.3
Labor income	\$675.2	\$0.0	\$139.1	\$814.3
Employment	14,090	0	3,172	17,262
Taxes				\$51.9
Federal taxes				\$25.9
State/Local taxes				\$26.0

Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.

### 3.3 MCB Hawaii Spending

MCB Hawaii also contributes to the economy by hiring contractors to provide a wide range of goods and services. For the purpose of this study, only expenses that are actually incurred in the State of Hawaii (i.e. construction, range training support, and waste management) are considered. Table 9 on the following page gives the total impact of MCB Hawaii on the State.

**Table 9: Total Impact of MCB Hawaii to the State of Hawaii**

Base Spending	Economic Output	FTE Jobs	State/Local Taxes
Construction	\$171.7 million	1,115	\$7.2 million
Range Training Support Services	\$5.1 million	52	\$0.2 million
Waste Management	\$1.9 million	11	\$0.1 million
Total	\$178.7 million	1,178	\$7.5 million

### 3.3.1 Construction

In 2012, MCB Hawaii spent nearly \$103 million in construction (and maintenance/rehabilitation of residential and non-residential structures) alone. These expenses, as calculated by IMPLAN, sustained 936 jobs and generated \$61.2 million in labor income in the neighboring communities. The associated output is estimated at \$139.4 million. Tax revenues totaled \$16.1 million, including \$9.9 million in Federal taxes and \$6.2 million in state and local taxes.

A summary of the impact results associated with MCB Hawaii construction expenditures is provided in Table 10 below. The results are broken down by impact metric (output, value added, labor income, employment and taxes) and by type of effect (direct, indirect, induced and total).

**Table 10: Impact of Construction Spending on Neighboring Communities**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$103.3	\$13.2	\$23.0	\$139.4
Value added	\$60.8	\$8.5	\$14.7	\$83.9
Labor income	\$47.0	\$6.0	\$8.2	\$61.2
Employment	600	141	195	936
Taxes				\$16.1
Federal taxes				\$9.9
State/Local taxes				\$6.2

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

At the state level, an additional 179 jobs were sustained by MCB Hawaii construction expenditures (Table 11). A majority of them were located on Oahu.

**Table 11: Total Impact of Construction Spending by Area**

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
Output	\$139.4	\$166.6	\$171.7
Value added	\$83.9	\$97.1	\$99.2
Labor income	\$61.2	\$68.7	\$70.1
Employment	936	1,084	1,115
Taxes	\$16.1	\$17.9	\$18.3
Federal taxes	\$9.9	\$10.9	\$11.1
State/Local taxes	\$6.2	\$7.0	\$7.2

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

### 3.3.2 Range Training Support

As shown in Table 12, MCB Hawaii’s spending on range training support services contributed \$5.1 million to the state economic output, sustained 52 jobs and generated about \$0.6 million in taxes in 2012. Note that virtually 100 percent of these impacts were incurred on Oahu.

**Table 12: Total Impact of Range Training Support Services Spending by Area**

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
Output	\$0.0	\$5.1	\$5.1
Value added	\$0.0	\$3.3	\$3.3
Labor income	\$0.0	\$2.6	\$2.6
Employment	0	52	52
Taxes	\$0.0	\$0.6	\$0.6
Federal taxes	\$0.0	\$0.4	\$0.4
State/Local taxes	\$0.0	\$0.2	\$0.2

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Impacts on neighboring communities are minimal. Totals may not add due to rounding.*



### 3.3.3 Waste Management

In the same way, MCB Hawaii’s spending on waste management services gas contributed \$1.9 million to the state economic output and created 11 jobs in 2012. Again, virtually 100 percent of these impacts were incurred on Oahu (see Table 13 below).

**Table 13: Total Impact of Waste Management Services Spending by Area**

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
Output	\$0.0	\$1.9	\$1.9
Value added	\$0.0	\$1.0	\$1.0
Labor income	\$0.0	\$0.6	\$0.6
Employment	0	11	11
Taxes	\$0.0	\$0.2	\$0.2
Federal taxes	\$0.0	\$0.1	\$0.1
State/Local taxes	\$0.0	\$0.1	\$0.1

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Impacts on neighboring communities are minimal. Totals may not add due to rounding.*

### 3.4 Visitor Spending

Visitor spending (i.e. lodging, transportation, food services, retail, and recreational activities) generated \$15.1 million in economic output and resulted in 152 jobs in the neighboring communities in 2012. Note, however, that more than 70 percent of these impacts are attributed to direct visitor spending. In other words, the multiplier effect associated with tourism activity is relatively low.

The impact results associated with visitor spending are presented in Table 14. The results are broken down by impact metric (output, value added, labor income, employment and taxes) and by type of effect (direct, indirect, induced and total).

**Table 14: Impact of Visitor Spending on Neighboring Communities**

Impact Metric	Direct	Indirect	Induced	Total
Output	\$11.2	\$1.6	\$2.3	\$15.1
Value added	\$7.0	\$1.0	\$1.5	\$9.5
Labor income	\$4.6	\$0.7	\$0.8	\$6.1
Employment	118	14	19	152
Taxes				\$2.4
Federal taxes				\$1.1
State/Local taxes				\$1.3

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

Table 15 shows the total economic impact of visitor spending on each of the three areas. As shown in the table, only 20 additional jobs (or \$1.0 million in labor income) are generated outside of the neighboring communities – most of them on Oahu.

**Table 15: Total Impact of Visitor Spending by Area**

Impact Metric	Neighboring Communities	Island of Oahu	State of Hawaii
Output	\$15.1	\$18.3	\$18.5
Value added	\$9.5	\$11.2	\$11.3
Labor income	\$6.1	\$7.0	\$7.1
Employment	152	170	172
Taxes	\$2.4	\$2.7	\$2.7
Federal taxes	\$1.1	\$1.2	\$1.2
State/Local taxes	\$1.3	\$1.4	\$1.5

*Notes: All dollar amounts are expressed in millions of 2012 dollars. Value added (equivalent to GDP) is a component of output and the two should not be added together. Employment impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each sector of the economy. State and local tax impacts are combined and cannot be separated within IMPLAN. Totals may not add due to rounding.*

## APPENDIX A: METHODOLOGY

This appendix presents the key methodological aspects of the study. Essential concepts and terminology related to economic impact analysis are covered in Section 1. The modeling process used to estimate the economic contribution of MCB Hawaii to the local communities, Oahu, and the State of Hawaii as a whole is discussed in detail in Sections 2 and 3.

### A.1 Primer on Economic Impact Analysis

The main objective of an economic impact analysis is to determine the effect of a change in the demand for goods and services on the level of economic activity in a given area. This demand change can be the result of decisions made by the government (e.g., military base expansion), firms (e.g., investment in a new plant) or households (e.g., increased spending due to a tax abatement).

#### A.1.1 Types of Effect

Traditionally, economic impact analysis involves the estimation of three types of effect, commonly referred to as direct effect, indirect effect and induced effect:

- **Direct effect:** Refers to the economic activity occurring as a result of direct spending by businesses or agencies located in the study area (e.g., expenses related to construction activities at the base were estimated at \$103.3 million in 2012);
- **Indirect effect:** Refers to the economic activity resulting from purchases by local firms who are the suppliers to the directly affected businesses or agencies (e.g., spending by suppliers of the contractors responsible for construction activities at the base and located in the state totaled \$32.3 million in 2012); and
- **Induced effect:** Represents the increase in economic activity, over and above the direct and indirect effects, associated with increased labor income that accrue to workers (of the contractor and all suppliers, in our example) and is spent on household goods and services purchased from businesses within the study area (e.g., employees of construction contractors and their suppliers spent an additional \$36.1 million in the state economy in 2012).

The total economic impact is the sum of these direct, indirect and induced effects for the project being evaluated (\$171.7 million, in our example).

#### A.1.2 Multiplier Effects

The indirect and induced effects are sometimes referred to as multiplier effects since they can make the total economic impact substantially larger than the direct effect alone. Indirect and induced effects result from the direct effects; in theory, the larger the multiplier, the larger the overall response (total economic impact) to the initial direct effect. In reality though, while indirect and induced impacts do always occur, the net impact on the total level of economic activity in an area may or may not be increased by multiplier effects. That outcome

depends on the definition of the study area and its ability to provide additional workers and capital resources, or attract them from elsewhere.

Multipliers are often expressed in terms of employment. An employment multiplier measures the total increase in the number of jobs in the economy per new job created in a specific industry. Consider a construction contractor who hires 10 new employees as a result of a new contract with MCB Hawaii. The employment multiplier for the corresponding industry in the communities adjacent to MCB Hawaii is 1.6. In this example, 6 additional jobs<sup>10</sup> would be created in the local economy as a result of the 10 positions created at the construction contractor, for a total of 16 new jobs.<sup>11</sup>

In general, the economic multiplier is strongly influenced by the size of the study area (or economic base): the larger the study area, the higher the multiplier since more of the “trickle down” spending would remain in the study area. However, it is possible that the multiplier for a given area be smaller than that for part of the area. Such a case would occur if the structure of the economy is radically different for the two. Also, a number of key sectors may be more concentrated at the metropolitan area level (thus requiring less imports) than at the state level.

Given the size (total land area of 6,423 square miles only), the geography (archipelago) and the location (in the middle of the Pacific Ocean, more than 2,200 miles away from the U.S. mainland) of the State of Hawaii, the economic multiplier is expected to be somewhat lower than other state multipliers.<sup>12</sup>

### *A.1.3 Impact Metrics*

Typically, economic impacts are measured in terms of industry output, value added, employment, and tax revenue (at the federal and state/local levels). While output is the broadest measure of economic activity and refers to the total volume of sales, value added is the value a company adds to a product or service. It is measured as the difference between the amount a company spends to acquire it and its value at the time it is sold to other users. Thus, value added can be thought of as a measure of the contribution to the gross domestic product (GDP) made by an establishment or an industry. The total value added within a region is equivalent to the gross regional product and includes employee compensation, proprietary income, other property type income (e.g., rents) and indirect business taxes (e.g., sales tax).

With respect to employment, two impact metrics are calculated: labor income and jobs. For instance, MCB Hawaii paid \$535.8 million in salaries to its military personnel in 2012. Labor income includes employee compensation and proprietary income. Employee compensation, in turn, consists of wage and salary payments as well as benefits (health, retirement, etc.) and employer paid payroll taxes (employer side of social security, unemployment taxes, etc.). Proprietary income consists of payments received by self-employed individuals (such as doctors and lawyers) and unincorporated business owners. The job impact measures the number of jobs created for a full year. These impacts should not be interpreted as full-time equivalent (FTE) as they reflect the mix of full- and part-time jobs that is typical for each industry. And, strictly speaking, they should not be

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<sup>10</sup>  $(10 * 1.6) - 10 = 6$

<sup>11</sup> The multiplier is assumed constant regardless of the magnitude of the initial shock (the dollar amount of the contract in our example), hence the linearity of the impact analysis results.

<sup>12</sup> The fact that none of MCB Hawaii’s direct expenditures in 2012 were incurred in Hawaii County, Kauai County, Kalawao County and Maui County is supporting evidence.

interpreted as permanent jobs either, but rather as job-years. A job-year can be defined as one person employed for one year, whether part-time or full-time.

## A.2 The IMPLAN® System

To measure the economic impacts associated with MCB Hawaii we use the IMPLAN® system, an input-output based regional economic assessment modeling system developed and maintained by the IMPLAN Group LLC.<sup>13</sup> The IMPLAN® system consists of a software package<sup>14</sup> and data files that are updated every year. The IMPLAN data files include transaction information (intra-regional and import/export) on 440 distinct industrial sectors (corresponding to four- and five-digit North American Industry Classification System [NAICS] codes) and data on more than 20 different economic variables, including employment, output and value added. For this study, the IMPLAN® system is populated with the most recent data available (2011).<sup>15</sup> IMPLAN analysis for this study was conducted by HDR Inc.

### A.2.1 Impact Analysis in IMPLAN

For the purpose of this study, the economic impacts are estimated for each of the following three areas consecutively:

- Neighboring communities: Zip Codes 96701 (Aiea), 96734 (Kailua), 96744 (Kaneohe), 96795 (Waimanalo) and 96863 (MCBH Kaneohe Bay);
- Island of Oahu (City and County of Honolulu); and
- State of Hawaii.

This is done by means of multi-regional analysis using the IMPLAN National Trade Flows Model. Multi-regional analysis allows us to examine how activities occurring in a particular area (e.g., island of Oahu) affect not only that area, but also the surrounding areas (e.g., Counties of Hawaii, Kauai, Kalawao and Maui). In particular, imports from surrounding counties may result in additional indirect and induced impacts.

In addition, in the course of the analysis, the following adjustments are made to help ensure that all impact estimates are truly incremental and specific to the study area:

- Since the original IMPLAN data are for 2011, the impact analysis results need to be adjusted for inflation to be expressed in 2012 dollars;<sup>16</sup>
- Type SAM multipliers,<sup>17</sup> used for estimating the indirect and induced effects, are modified with regional purchase coefficients (RPCs)<sup>18</sup> derived from the IMPLAN National Trade Flows Model (NTFM) to ensure

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<sup>13</sup> For more information on the IMPLAN® system, visit <http://www.implan.com/>.

<sup>14</sup> IMPLAN Version 3.0 is used for this study.

<sup>15</sup> The smaller the study area and the higher the risk that the structure of the economy might change significantly over a short period. Therefore, it is recommended to update the study results within the next three years.

<sup>16</sup> Deflators derived from the most current Bureau of Labor Statistics (BLS) growth model are used in IMPLAN to account for relative price changes over time. These deflators are available through 2030 and applied at the commodity level.

that any spending “leaking” out of the study area is not included (for example, machinery equipment purchased by construction contractors in Oahu is most likely manufactured outside of Hawaii); and

- Households are the only institution selected when building the model through multipliers in IMPLAN (government and capital are typically not internalized); as a result, the induced effects are based only on the income of households living in the study area.

In addition, particular attention needs to be paid to the definition of the direct effects to avoid any double counting. For instance, a reduction in personnel is equivalent to a reduction in payroll expenses. Therefore, these reductions should not also be accounted for when analyzing the reduction in spending by the base. In the same way, if total employment at the base includes jobs associated with residentiary activities (i.e., goods and services, such as food and drinks, sold on site to base employees by private entities), these jobs should not also be accounted for when analyzing the reduction in spending (they are part of the induced effects).

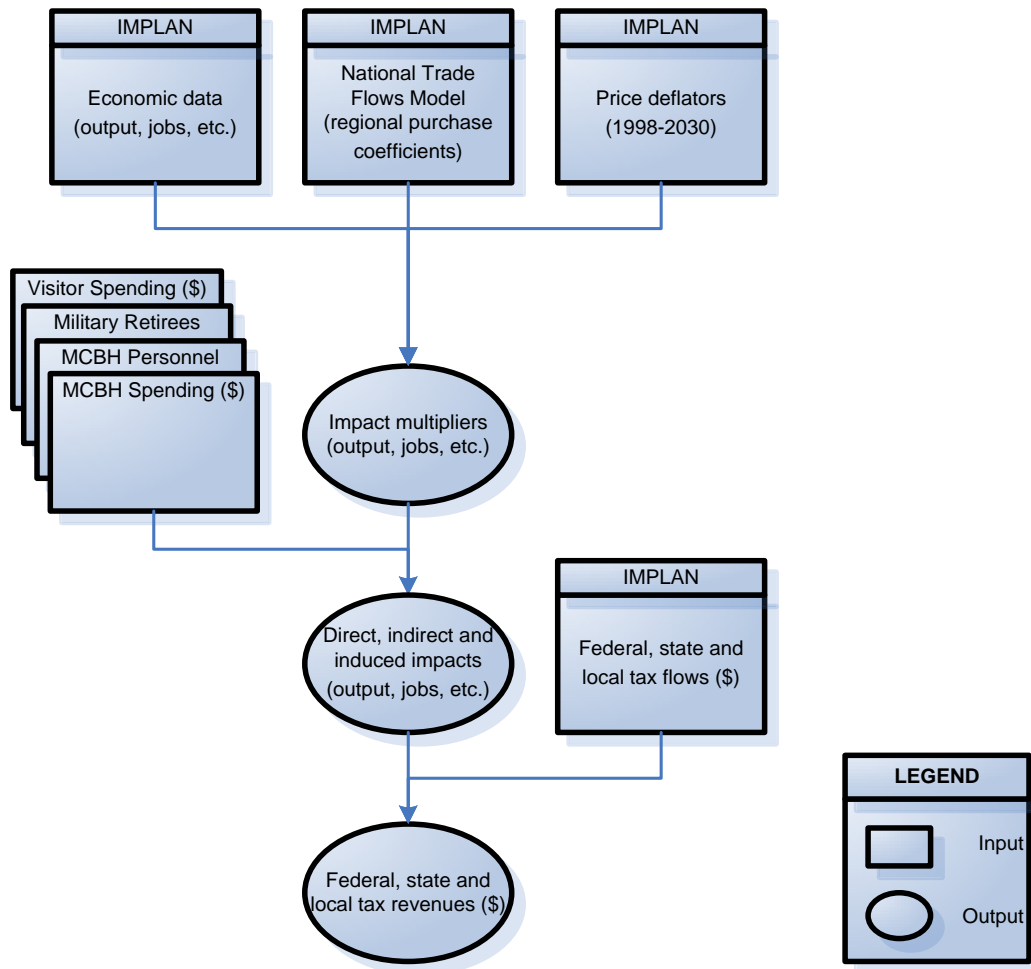
Figure 8 on the following page shows a graphical representation of the general process followed to conduct the economic impact analysis in IMPLAN. Note that multipliers are obtained for as many industries (or activities to be modeled) as necessary.

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<sup>17</sup> Type SAM (Social Accounting Matrix) multipliers are the direct, indirect and induced effects where the induced effect is based on information in the social accounting matrix. Type SAM multipliers capture inter-institutional transfers (such as transfers between households and the Federal government) in addition to all commodity flows (purchases of goods). It is commonly accepted that only households should be internalized when building type SAM multipliers. Internalizing households relies on the assumption that workers will re-spend a portion of their labor income.

<sup>18</sup> RPCs represent the portion of the total regional demand that is met by regional production and attempt to account for cross-hauling – the importation and exportation of commodities from the same sector. All remaining demand is satisfied by imports, which provide no economic benefit to the region. In other words, RPCs filter-out economic leakages from the region.

Figure 8: Assessment of Economic Impacts with IMPLAN



## APPENDIX B: MODEL INPUTS

Most model inputs are derived from data compiled by MCB Hawaii and provided to Marstel-Day, LLC in July and August 2013.

The first two steps in the economic impact analysis conducted by HDR were:

- Defining the boundaries of the area to be studied (i.e., the study area); and
- Selecting the IMPLAN sectors that most closely match the activities or events occurring at the base.

As previously stated, the economic impacts are evaluated for each of the following three areas (nested within one another): neighboring communities, Oahu, and the State of Hawaii.

This implies that the model inputs should be specific to each of the three areas (for instance, we need to know the number of MCB Hawaii personnel who reside in the neighboring communities). Also, only expenses that are attributed to activities occurring in the study area should be considered in the analysis. Therefore, goods and services purchased from suppliers located outside of Hawaii (e.g., military vehicles) should be disregarded. Finally, utilities are excluded from the analysis because they are intermediary goods/services (as opposed to final demand) and including them would be double counting.

The selection of IMPLAN sectors for analysis is also done in two steps. The first step is to identify the 2007 North American Industry Classification System (NAICS) industry codes corresponding to the type of activity or expenditure being considered. The second step is to match the NAICS industry with the appropriate IMPLAN sector. Note that whenever an expenditure category refers to several IMPLAN sectors, such as for construction expenses, these sectors are aggregated prior to conducting the impact analysis.

A complete list of expenditure categories and their corresponding IMPLAN sectors is provided in Table 16 on the following page.



**Table 16: Identification of IMPLAN Sectors**

Type of Activity/Expenditure		2007 NAICS Definition	IMPLAN Sector
MCB Hawaii payroll and health benefits		N/A	5001 Employee compensation
Military retirees' pensions and health benefits		N/A	5001 Employee compensation
MCB Hawaii Spending	Construction, maintenance and repair	236 Construction of buildings	37 Construction of new residential permanent site single- and multi-family structures 38 Construction of new residential structure 39 Maintenance and repair construction of nonresidential structures 40 Maintenance and repair construction of residential structures
	Hazardous waste disposal and hazardous material reduction	562 Waste management and remediation services	390 Waste management and remediation services
	Range training support services	541690 Other scientific and technical consulting services	375 Environmental and other technical consulting services
Visitor Spending	Accommodations	721 Accommodation	411 Hotels and motels, including casino hotels 412 Other accommodations
	Arts, entertainment & recreation	713 Amusement, gambling, and recreation industries	406 Museums, historical sites, zoos, and parks 408 Bowling centers 409 Amusement parks, arcades, and gambling industries 410 Other amusement and recreation industries
	Food and beverage services	722 Food services and drinking places	413 Food services and drinking places
	Retail Sales	452 General merchandise stores	329 Retail – General merchandise

Sources: U.S. Census Bureau and IMPLAN Group LLC.

Table 17 on the following page presents the final model inputs used to estimate the economic impacts associated with MCB Hawaii. The inputs are broken down into four categories: MCB Hawaii personnel payroll (and health benefits); military retirees' pensions (and health benefits); MCB Hawaii spending (i.e., procurement); and visitor spending. All dollar estimates are expressed in 2012 dollars. Visitor spending estimates are based on lodging sales data provided by MCB Hawaii and data specific to Oahu provided by the Hawaii Tourism Authority in its *Annual Visitor Research Report*. Also, note that only annual procurement expenses in excess of \$1 million are considered in the analysis. Additional tables presenting the data on personnel, retirees, payroll, pensions and health benefits used to derive the final model inputs are provided in Appendix C.

As shown in the table, MCB Hawaii personnel payroll and health benefits represent more than 80 percent of all expenditures.

**Table 17: Model Inputs (2012)**

Category	Variable	Neighboring Communities	Rest of Oahu	Total	
<b>MCBH Personnel</b>	Military personnel	10,255	1,267	11,522	
	Civilian personnel	1,207	1,361	2,568	
	Residentiary contractors	115	130	245	
	Military payroll	\$476,861,110	\$58,937,890	\$535,799,000	
	Civilian payroll	\$60,578,629	\$68,312,071	\$128,890,701	
	Health benefits	\$9,327,719	\$1,152,864	\$10,480,583	
<b>Military Retirees</b>	Pensions	\$9,299,580	N/A	\$9,299,580	
	Health benefits	\$2,603,528	N/A	\$2,603,528	
<b>MCBH Spending</b>	Maintenance & Construction	Local Facilities	\$34,800,000	N/A	\$34,800,000
		Headquarters	\$21,900,000	N/A	\$21,900,000
		MILCON	\$46,600,000	N/A	\$46,600,000
	Range training support services	N/A	\$2,923,015	\$2,923,015	
	Waste management services	N/A	\$1,124,720	\$1,124,720	
<b>Visitor Spending</b>	Accommodations	\$14,598,983	N/A	\$14,598,983	
	Food services	\$3,659,216	N/A	\$3,659,216	
	Retail	\$1,894,004	N/A	\$1,894,004	
	Recreation	\$1,159,130	N/A	\$1,159,130	

Notes: Payroll of military and civilian employees includes wages and salaries only. Health benefits for military personnel consist of TRICARE medical referrals and dental referrals to non-government providers. Construction expenses may vary significantly from year to year; according to the 2013-2017 Strategic Plan, approved construction expenses (MILCON and NAF) will amount to \$246.1 million in FY 2014 and \$171.6 million in FY 2015.

Sources: Data on MCB Hawaii personnel and spending as well as military retirees were compiled by MCB Hawaii and provided to Marstel-Day, LLC. Visitor spending estimates are based on data compiled by MCB Hawaii and the Hawaii Tourism Authority (2011).

## APPENDIX C: ADDITIONAL DATA TABLES

### MCB Hawaii / Tenant Unit Strength Report – Kaneohe Bay (as of 30 June 2013)

		MCBH	LSST	MCAS	WWBN	4th Force Recon	3d Mar	1/12	CLB-3 <sup>(1)</sup>	CLC-35 <sup>(1)</sup>	MAG-24	3rd Radio	Med, Den, HSL-37, CPRW	Total
Marine Officers	ASR	43	5	10		6	158	50	28	11	110	28	0	449
	SG	39	4	10		6	158	50	38	UNK	108	23	0	436
	O/H	41	8	13	3	3	107	40	29	6	112	31	0	393
Marine Enlisted	ASR	340	1	117		8	2,774	718	577	133	737	406	0	5,811
	SG	331	1	115		4	2,763	589	548	UNK	910	403	0	5,664
	O/H	342	1	121	30	11	1,795	469	440	122	1,002	379	0	4,712
Navy Officers	BA	8	0	0	0	0	11	4	2	UNK	7	2	257	291
	O/H	6	0	4	0	0	11	2	4	0	13	2	289	331
Navy Enlisted	BA	33	0	1	0	3	202	14	19	8	15	5	1,580	1,880
	O/H	45	0	34	1	1	158	19	23	6	277	5	1,504	2,073
Total	ASR & BA	424	6	128	0	17	3,145	786	626	152	869	441	1,837	8,431
	SG	370	5	125	0	10	2,921	639	586	0	1,018	426	0	6,100
	O/H <sup>(2)</sup>	434	9	172	34	0	2,071	530	496	134	1,404	417	1,793	7,494
FAPS	O/H	179	0	0	0	0	-52	-13	-20	-59	-17	-12	0	6
Adjusted Total		613	9	172	34	0	2,019	517	476	75	1,387	405	1,793	7,500
TAD/Deployed		32	1	4	5	8	1,368	154	47	0	102	92	11	1,824
Civilians	FTE/LOA													
	FTE/OH													
														86
Med, Den, HSL-37, CPRW Civilians														504
NAFI Personnel														913

<sup>(1)</sup> Staffing Goals (SG) and Assigned Strength Report (ASR) numbers are based off of CSSG-3's SG and ASR.

<sup>(2)</sup> On-Hand (O/H) represents individuals on island with a location code of 15.

**MCB Hawaii / Tenant Unit Strength Report – Camp Smith (as of 30 June 2013)**

		MFP MCC 110	MFP Reserve MCC 110	Other Cmds in MFP UIC 20021	PACOM	SOC PAC	JPAC	JIATF-W	JIOC	CMSA	NIOPS Det	DLA	DSS	NCTAMS	Total
Marine Officers	ASR	98	n/a	n/a	28	6	3	2	2	0	0	0	0	0	139
	SG	95	n/a	n/a	28	6	3	2	2	0	0	1	0	0	137
	O/H	103	17	58					5	0	0	1	0	0	184
Marine Enlisted	ASR	237	n/a	n/a	8	6	4	1	0	0	0	0	0	0	256
	SG	262	n/a	n/a	10	6	4	1	0	0	0	0	0	0	283
	O/H	224	15	107					16	0	0	0	0	0	362
All Other	ASR	n/a	n/a	n/a	338	114	20	24	25	8	1	0	0	0	530
Military Officers	SG	n/a	n/a	n/a	338	114	20	24	25	8	0	0	0	0	529
	O/H	15	0	82	248	92	34	12	159	7	0	3	0	1	653
All Other	ASR	n/a	n/a	n/a	190	126	122	18	13	21	10	0	0	0	500
Military Enlisted	SG	n/a	n/a	n/a	190	126	122	18	13	20	0	0	0	0	489
	O/H	7	0	3	127	93	152	15	221	21		0	0	59	698
Total	ASR	335	0	0	564	252	149	45	40	29	11	0	0	0	1,425
	SG	357	0	0	566	252	149	45	40	28	0	1	0	0	1,438
	O/H	349	32	250	531	258	166	57	401	28	0	4	0	60	2,136
FAPS		-2	0	0	0	0	0	0	0	0	0	0	0	0	-2
Adjusted Total		347	32	250	531	258	166	57	401	28	0	4	0	60	2,134
TAD/Deployed		23	0	33	4	0	1	2	1	0	0	0	0	0	64
Civilians	O/H	153	0	43	262	39	266	68	276	23	0	12	7	2	1,151
NAFI Personnel															47

**MCB Hawaii Residency Contractors (as of 2 July 2013)**

<b>Kaneohe Bay</b>	
CISD	16
Family Housing	23
Forest City	62
Environmental	9
Facilities Department	
GIS	2
REM	2
ISSOP	18
MCAS (DynCorp for Gulfstream)	19
O&T	34
<b>Camp Smith</b>	
Funded by MARFORPAC	25
Funded by Other Sources (DPRI)	35
<b>Total</b>	<b>245</b>

## Tax Impact for Island of Oahu

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations	TOTAL
Social Insurance Tax: Employee Contribution	\$6.8	\$1.4	\$ -	\$ -	\$ -	\$8.2
Social Insurance Tax: Employer Contribution	\$8.9	\$ -	\$ -	\$ -	\$ -	\$8.9
Tax on Production and Imports: Excise Taxes	\$ -	\$ -	\$1.5	\$ -	\$ -	\$1.5
Tax on Production and Imports: Custom Duty	\$ -	\$ -	\$0.6	\$ -	\$ -	\$0.6
Tax on Production and Imports: Federal Non-Taxes	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Corporate Profits Tax	\$ -	\$ -	\$ -	\$ -	\$7.2	\$7.2
Personal Tax: Income Tax	\$ -	\$ -	\$ -	\$11.8	\$ -	\$11.8
<b>Total Federal Tax</b>	<b>\$15.7</b>	<b>\$1.4</b>	<b>\$2.1</b>	<b>\$11.8</b>	<b>\$7.2</b>	<b>\$38.2</b>
Dividends	\$ -	\$ -	\$ -	\$ -	\$0.0	\$0.0
Social Insurance Tax: Employee Contribution	\$0.1	\$ -	\$ -	\$ -	\$ -	\$0.1
Social Insurance Tax: Employer Contribution	\$0.1	\$ -	\$ -	\$ -	\$ -	\$0.1
Tax on Production and Imports: Sales Tax	\$ -	\$ -	\$18.5	\$ -	\$ -	\$18.5
Tax on Production and Imports: Property Tax	\$ -	\$ -	\$7.5	\$ -	\$ -	\$7.5
Tax on Production and Imports: Motor Vehicle License	\$ -	\$ -	\$0.5	\$ -	\$ -	\$0.5
Tax on Production and Imports: Severance Tax	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Tax on Production and Imports: Other Taxes	\$ -	\$ -	\$0.7	\$ -	\$ -	\$0.7
Tax on Production and Imports: State/Local Non-Taxes	\$ -	\$ -	\$0.8	\$ -	\$ -	\$0.8
Corporate Profits Tax	\$ -	\$ -	\$ -	\$ -	\$0.5	\$0.5
Personal Tax: Income Tax	\$ -	\$ -	\$ -	\$4.3	\$ -	\$4.3
Personal Tax: Non-Taxes (Fines and Fees)	\$ -	\$ -	\$ -	\$0.6	\$ -	\$0.6
Personal Tax: Motor Vehicle License	\$ -	\$ -	\$ -	\$0.5	\$ -	\$0.5
Personal Tax: Property Taxes	\$ -	\$ -	\$ -	\$0.1	\$ -	\$0.1
Personal Tax: Other Tax (Fishing/Hunting)	\$ -	\$ -	\$ -	\$0.0	\$ -	\$0.0
<b>Total State and Local Tax</b>	<b>\$0.2</b>	<b>\$ -</b>	<b>\$28.0</b>	<b>\$5.5</b>	<b>\$0.5</b>	<b>\$34.3</b>
<b>TOTAL TAX</b>	<b>\$16.0</b>	<b>\$1.4</b>	<b>\$30.1</b>	<b>\$17.3</b>	<b>\$7.7</b>	<b>\$72.5</b>

Notes: All dollar amounts are expressed in millions of 2012 dollars. State and local tax impacts are combined and cannot be separated 4 within IMPLAN. Totals may not add due to rounding.

### Military Retirees Receiving Pay in Selected Hawaii Zip codes (as of June 2013)

ZIP Code	Army	Navy	Marine Corps	Air Force	Coast Guard	Total
96701	274	345	41	332	21	1,013
96734	266	230	174	189	22	881
96744	280	174	132	252	20	858
96795	23	9	8	17	0	57
<b>Total</b>	<b>843</b>	<b>758</b>	<b>355</b>	<b>790</b>	<b>63</b>	<b>2,809</b>

Note: Produced by the Defense Manpower Data Center on July 16, 2013.

### Payments for Military Retirees Residing in Hawaii (as of 30 September 2012)

Category	Number of Personnel Retired <sup>(1)</sup>	Monthly Payment (\$thousand) <sup>(2)</sup>	Average Payment per Person Paid
By Branch of Service			
Department of Defense	16,701	\$34,625	\$2,183
Army	6,144	\$11,920	\$2,073
Navy	4,780	\$10,461	\$2,284
Marine Corps	1,079	\$2,691	\$2,672
Air Force	4,698	\$9,553	\$2,113
Coast Guard	375	(NA)	(NA)
By Rank			
Officers	4,723	\$16,129	\$3,443
Nondisabled and Reserve	4,569	\$15,801	\$3,472
Disabled	154	\$328	\$2,466
Enlisted	11,978	\$18,496	\$1,655
Nondisabled and Reserve	10,988	\$18,006	\$1,689
Disabled	990	\$490	\$955

Notes: Produced by the Defense Manpower Data Center on July 16, 2013.

<sup>(1)</sup> Number of Personnel Retired includes all living retirees, including some whose net pay is \$0. Number paid by the Department of Defense includes only those whose net pay by this definition is greater than \$0. Net pay is the pay after deductions for survivor premiums and benefits offset by a VA award. It is the pay before any deductions for withholding taxes and allotments.

<sup>(2)</sup> The Monthly Payment (net pay) is before deductions for withholding taxes and allotments, but after deductions for survivor benefits, waivers to obtain benefits from the Veterans Administration.

Source: U.S. Department of Defense, Office of the Actuary, Fiscal Year 2012 DOD Statistical Report on the Military Retirement System, May 2013.

**FY2012 Military Beneficiary Costs for Civilian Healthcare Provided in Hawaii**

<b>Category</b>	<b>Non-Institutional <sup>(1)</sup></b>	<b>Institutional <sup>(2)</sup></b>	<b>Total</b>
Active Duty (AD)	\$1,333,774	\$735,316	\$2,069,090
AD Family Member (FM)	\$6,206,232	\$2,205,261	\$8,411,493
Retirees/Others	\$2,411,533	\$191,995	\$2,603,528
<b>Total</b>	<b>\$9,951,539</b>	<b>\$3,132,572</b>	<b>\$13,084,111</b>

Notes: <sup>(1)</sup> Non-Institutional: Professional fees, including physician, drugs, facility, lab costs, etc.

<sup>(2)</sup> Institutional: Facility costs associated with a hospital admission.

Source: Naval Health Clinic Hawaii, Healthcare Business Department, 19 June 2013 (M2, Purchased Care Claims paid in FY12 for care provided in Hawaii, beneficiary population: All AD/ADFM/Retiree/Others with a Marine sponsor and Navy AD assigned to Marine Corps Base Hawaii Kaneohe3 and their family members).

## APPENDIX D. REFERENCES AND DATA SOURCES

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