

Energy & Science



Section 7

ENERGY & SCIENCE

The growth in Maui County's population is reflected in the utilities. Consumption and use of electricity, gas, utilities, and water have all increased dramatically over the last decade. This section details those statistics on electricity, gas, water production and consumption.

Ongoing scientific endeavors include observation of astronomical and man-made space objects from the summit of Mt. Haleakalā.

7.1.1

TELESCOPES AT THE SUMMITS OF MAUNA KEA AND HALEAKALĀ

| Facility (mirror diameter in meters) | Capital Cost (\$ mil) ¹ | Annual Operating Cost (\$ mil) | County Based Staff | Operational |
|---|--|---|--------------------------|-------------|
| Mauna Kea Observatories: | | | | |
| UH 2.2-m (Optical/Infrared) | 5 | 1.0 | 6 | 1970 |
| Canada-France-Hawai'i 3.6-m (Optical/Infrared) | 30 | 7.4 | 45 | 1979 |
| NASA IRTF 3.0-m (Infrared) | 10 | 5.1 | 19 | 1979 |
| United Kingdom 3.8-m (Infrared) | 5 | 2.2 | 6 | 1979 |
| James Clerk Maxwell 15-m Submillimeter | 32 | 4.7 | 35 | 1986 |
| VLBA Antenna 25-m (Radio) | 7 | 0.4 | 2 | 1992 |
| W.M. Keck Observatory (Keck I & II) | | | | |
| 10-m x 2 (Optical/Infrared) | 170 | 13.5 | 120 | 1992/1996 |
| Subaru (Japan National Large Telescope) | | | | |
| 8-m (Optical/Infrared) | 170 | 17.0 | 101 | 1999 |
| Fredrick C. Gillett Gemini 8m (Optical/Infrared) | 92 | 13.7 | 83 | 1999 |
| Submillimeter Array 8x6-m | 80 | 5.5 | 23 | 2003 |
| Mauna Kea Observatories Support Services | X | 5.4 ² | 44 | 1980 |
| Total | 601 | 72.4 | 484 | |
| Haleakalā Observatories: | | | | |
| Mees Solar Observatory | 1 | 0.2 | 1 | 1963 |
| Haleakalā Observatories Projects | NA | 0.2 | 2 | NA |
| Maui Space Surveillance Site (MSSS) | 250 | 26.3 | 117 | 1965 |
| Ground-Based Electro-Optical Deep Space | | | | |
| Surveillance (GEODSS) | 25 | 6.1 | 16 | 1983 |
| Faulkes 2-m Telescope | 10 | 0.6 | 2 | 2003 |
| Transportable Laser Ranging System (TLRS4) | 1 | 0.5 | 5 | 2005 |
| Panoramic Survey Telescope And Rapid | | | | |
| Response System (Pan-STARRS) | 110 | 5.6 | 11 | 2009 |
| Haleakalā Support Facilities | 9 | 1.2 | 13 | 1962/2008 |
| Daniel K. Inouye Solar Telescope (DKIST) ³ | 344 | 18.0 ⁴ | 35 | |
| Total | 750 | 40.7 | 202 | |

NA Not available. X Not applicable. Note: Data as of March 2016 for Mauna Kea and 2015 for Haleakala.

1. Historical cost, not adjusted for inflation, and not including subsequent capital improvements for Mauna Kea Observation.

2. Only \$1.9 million of this included in total as the other \$3.5 million are part of facility operating costs.

3. Daniel K. Inouye Solar Telescope scheduled to be operational by 2019.

4. Operational cost of \$18 million not included in the total.

SOURCE: UNIVERSITY OF HAWAII AT MANOA, INSTITUTE FOR ASTRONOMY.

7.1.2
**ELECTRIC UTILITIES
 MAUI COUNTY**

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|
| Customers, Dec 31 | | | | | |
| Total | | | | | |
| Maui Island | 63,433 | 64,047 | 64,657 | 65,124 | 65,603 |
| Moloka'i | 3,164 | 3,198 | 3,211 | 3,186 | 3,212 |
| Lāna'i | 1,633 | 1,677 | 1,709 | 1,732 | 1,718 |
| Maui County | 68,230 | 68,922 | 69,577 | 70,042 | 70,533 |
| Residential | | | | | |
| Maui Island | 54,305 | 54,785 | 55,301 | 55,670 | 56,085 |
| Moloka'i | 2,611 | 2,643 | 2,649 | 2,648 | 2,672 |
| Lāna'i | 1,410 | 1,451 | 1,469 | 1,484 | 1,474 |
| Maui County | 58,326 | 58,879 | 59,419 | 59,802 | 60,231 |
| Other | | | | | |
| Maui Island | 9,128 | 9,262 | 9,356 | 9,454 | 9,518 |
| Moloka'i | 553 | 555 | 562 | 538 | 540 |
| Lāna'i | 223 | 226 | 240 | 248 | 244 |
| Maui County | 9,904 | 10,043 | 10,158 | 10,240 | 10,302 |
| Peak Demand (mW)¹ | | | | | |
| Maui Island | 194.1 | 194.8 | 194.8 | 190.3 | 194.7 |
| Moloka'i | 5.8 | 5.5 | 5.5 | 5.4 | 5.3 |
| Lāna'i | 4.7 | 4.6 | 4.6 | 5.0 | 4.8 |
| Power Sold (1,000 kWh) | | | | | |
| Total | | | | | |
| Maui Island | 1,125,556 | 1,090,179 | 1,079,935 | 1,076,321 | 1,083,129 |
| Moloka'i | 30,685 | 29,942 | 29,380 | 29,207 | 28,685 |
| Lāna'i | 24,785 | 24,712 | 25,558 | 26,529 | 25,817 |
| Maui County | 1,181,026 | 1,144,833 | 1,134,873 | 1,132,056 | 1,137,630 |
| Residential | | | | | |
| Maui Island | 398,869 | 377,209 | 369,877 | 364,174 | 363,863 |
| Moloka'i | 11,700 | 10,951 | 10,459 | 9,915 | 9,811 |
| Lāna'i | 7,358 | 7,186 | 7,572 | 7,890 | 7,492 |
| Maui County | 417,927 | 395,346 | 387,908 | 381,979 | 381,167 |
| Other | | | | | |
| Maui Island | 726,687 | 712,970 | 710,058 | 712,146 | 719,265 |
| Moloka'i | 18,985 | 18,991 | 18,921 | 19,292 | 18,873 |
| Lāna'i | 17,427 | 17,526 | 17,985 | 18,639 | 18,325 |
| Maui County | 763,099 | 749,487 | 746,964 | 750,077 | 756,464 |

7.1.2

CONTINUED

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|----------------|----------------|----------------|----------------|----------------|
| Average Annual Use, Dec 31 (kWh) | | | | | |
| Residential | | | | | |
| Maui Island | 7,345 | 6,885 | 6,688 | 6,542 | 6,488 |
| Moloka'i | 4,481 | 4,143 | 3,948 | 3,744 | 3,672 |
| Lāna'i | 5,218 | 4,952 | 5,155 | 5,317 | 5,083 |
| Other | | | | | |
| Maui Island | 79,611 | 76,978 | 75,893 | 75,327 | 75,569 |
| Moloka'i | 34,332 | 34,217 | 33,667 | 35,858 | 34,951 |
| Lāna'i | 78,149 | 77,549 | 74,938 | 75,156 | 75,103 |
| Average Rate (dollars per kWh) | | | | | |
| Residential | | | | | |
| Maui Island | 0.35774 | 0.38709 | 0.37824 | 0.37827 | 0.31048 |
| Moloka'i | 0.43025 | 0.46129 | 0.46435 | 0.47062 | 0.37597 |
| Lāna'i | 0.44049 | 0.46612 | 0.46344 | 0.45848 | 0.37630 |
| Other | | | | | |
| Maui Island | 0.34497 | 0.37238 | 0.36193 | 0.36142 | 0.29260 |
| Moloka'i | 0.43526 | 0.45633 | 0.45530 | 0.45366 | 0.35837 |
| Lāna'i | 0.44506 | 0.47129 | 0.46317 | 0.45907 | 0.38325 |
| Revenues (\$1,000) | | | | | |
| Total | | | | | |
| Maui Island | 393,156 | 411,509 | 396,894 | 395,142 | 323,427 |
| Moloka'i | 13,298 | 13,718 | 13,471 | 13,418 | 10,452 |
| Lāna'i | 10,997 | 11,609 | 11,840 | 12,174 | 9,842 |
| Maui County | 417,451 | 436,836 | 422,205 | 420,734 | 343,722 |
| Residential | | | | | |
| Maui Island | 142,692 | 146,013 | 139,902 | 137,757 | 112,973 |
| Moloka'i | 5,034 | 5,052 | 4,856 | 4,666 | 3,689 |
| Lāna'i | 3,241 | 3,349 | 3,509 | 3,617 | 2,819 |
| Maui County | 150,967 | 154,414 | 148,267 | 146,040 | 119,481 |
| Other | | | | | |
| Maui Island | 250,464 | 265,496 | 256,991 | 257,385 | 210,455 |
| Moloka'i | 8,264 | 8,666 | 8,615 | 8,752 | 6,764 |
| Lāna'i | 7,756 | 8,260 | 8,330 | 8,557 | 7,023 |
| Maui County | 266,484 | 282,422 | 273,936 | 274,694 | 224,241 |

mW: Megawatts

kWh: Kilowatt hours

1. Peak demand is the maximum amount of energy required from the electrical system. The islands' electrical systems are not interconnected, so no peaks are reported for Maui County as a whole.

SOURCE: MONTHLY FINANCIAL REPORTS ISSUED BY MAUI ELECTRIC COMPANY, CALCULATIONS BY HAWAII STATE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM.

7.1.3

GAS UTILITIES MAUI COUNTY

Excludes bottled gas

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|--------------|--------------|--------------|--------------|--------------|
| Island of Maui | | | | | |
| Customers, Dec. 31 | | | | | |
| Residential | 431 | 428 | 420 | 423 | 423 |
| Other | 86 | 88 | 90 | 88 | 89 |
| Total | 517 | 516 | 510 | 511 | 512 |
| Gas Sold (1,000 therms) | | | | | |
| Residential | 109 | 111 | 107 | 104 | 100 |
| Other | 749 | 777 | 770 | 798 | 740 |
| Total | 858 | 888 | 876 | 902 | 840 |
| Average Annual Use (therms) | | | | | |
| Residential | 252 | 259 | 254 | 246 | 237 |
| Other | 8,711 | 8,825 | 8,551 | 9,065 | 8,314 |
| Average Rate (dollar per therm) | | | | | |
| Residential | 4.30770 | 4.12958 | 3.90245 | 4.26276 | 3.88384 |
| Other | 2.91648 | 2.78814 | 2.54380 | 2.86278 | 2.43153 |
| Revenues (\$1,000) | | | | | |
| Residential | 468 | 458 | 417 | 443 | 390 |
| Other | 2,185 | 2,165 | 1,958 | 2,284 | 1,799 |
| Total | 2,653 | 2,624 | 2,374 | 2,727 | 2,189 |
| Islands of Moloka'i and Lāna'i¹ | | | | | |
| Customers, Dec. 31 | | | | | |
| Moloka'i | 83 | 85 | 91 | 84 | 82 |
| Lāna'i | 22 | 20 | 21 | 22 | 22 |
| Gas Sold (1,000 therms) | | | | | |
| Moloka'i | 12 | 16 | 15 | 15 | 14 |
| Lāna'i | 1 | 2 | 3 | 3 | 3 |
| Average Annual Use (therms) | | | | | |
| Moloka'i | 145 | 184 | 165 | 181 | 175 |
| Lāna'i | 65 | 115 | 136 | 129 | 136 |
| Average Rate (dollar per therm) | | | | | |
| Moloka'i | 4.94771 | 4.74503 | 4.52344 | 4.85508 | 4.37824 |
| Lāna'i | 6.70154 | 5.66075 | 5.17527 | 5.54700 | 5.07402 |
| Revenues (\$1,000) | | | | | |
| Moloka'i | 60 | 74 | 68 | 74 | 63 |
| Lāna'i | 10 | 13 | 15 | 16 | 15 |

1. All Moloka'i and Lāna'i customers are residential.

SOURCE: HAWAII GAS THE CLEAN ENERGY COMPANY, HAWAII GAS UTILITY MONTHLY FINANCIAL REPORTS,
CALCULATIONS BY HAWAII STATE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM.

7.1.4

ENERGY CONSUMPTION ESTIMATES BY SOURCE HAWAI'I STATE ENERGY REPORT

In trillion BTU

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| Coal | 16.1 | 16.6 | 15.3 | 17.2 | 15.6 |
| Natural Gas | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Petroleum | | | | | |
| Distillate fuel oil | 36.5 | 35.2 | 33.0 | 25.2 | 27.3 |
| Jet fuel | 62.1 | 64.1 | 64.2 | 73.3 | 76.1 |
| Liquefied petroleum gas | 3.4 | 3.4 | 3.2 | 3.2 | 2.7 |
| Motor gasoline | 53.3 | 50.7 | 51.0 | 51.5 | 51.5 |
| Residual fuel oil | 73.6 | 67.4 | 65.2 | 62.1 | 61.3 |
| Other | 16.7 | 17.0 | 16.3 | 0.0 | 0.0 |
| Total Petroleum | 245.5 | 237.9 | 233.0 | 234.2 | 218.9 |
| Renewable Energy | | | | | |
| Hydroelectric | 0.9 | 1.1 | 0.7 | 0.9 | 1.1 |
| Biomass | 10.6 | 9.6 | 11.2 | 11.4 | 11.5 |
| Wood and waste | 7.3 | 6.7 | 8.2 | 7.5 | 7.5 |
| Ethanol fuel | 3.2 | 2.9 | 3.0 | 3.9 | 3.9 |
| Geothermal | 2.2 | 2.5 | 2.6 | 2.2 | 2.2 |
| Solar / Photovoltaic | 4.6 | 6.7 | 9.3 | 8.4 | 8.4 |
| Wind | 3.3 | 3.6 | 4.8 | 5.7 | 5.7 |
| Total Renewable Energy | 21.6 | 23.5 | 28.6 | 28.6 | 28.8 |
| Total Energy Consumption | 283.4 | 278.2 | 277.1 | 280.2 | 263.5 |

Note: Totals may not equal sum of components due to independent rounding.

SOURCE: U.S. DEPARTMENT OF ENERGY, ENERGY INFORMATION ADMINISTRATION, STATE ENERGY DATA SYSTEM.

7.1.5

WATER SERVICES AND CONSUMPTION MAUI COUNTY

Years ending June 30

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-------------|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Number of Services | | | | | | | | | |
| Maui County | 34,682 | 35,444 | 35,540 | 35,611 | 35,698 | 35,753 | 35,866 | 36,040 | 36,104 | 36,211 |
| Maui | 33,032 | 33,789 | 33,876 | 33,947 | 34,038 | 34,090 | 34,200 | 34,373 | 34,439 | 34,552 |
| Moloka'i | 1,650 | 1,655 | 1,664 | 1,664 | 1,660 | 1,663 | 1,666 | 1,667 | 1,665 | 1,659 |
| | Consumption (million gallons) | | | | | | | | | |
| Maui County | 13,258 | 12,797 | 12,074 | 12,214 | 12,371 | 12,675 | 13,253 | 11,851 | 11,684 | 11,785 |
| Maui | 12,961 | 12,510 | 11,794 | 11,916 | 12,089 | 12,410 | 12,958 | 11,592 | 11,427 | 11,523 |
| Moloka'i | 297 | 287 | 280 | 298 | 282 | 265 | 295 | 259 | 257 | 262 |

SOURCE: HAWAII STATE DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT AND TOURISM, DATA COMPILED FROM COUNTY OF MAUI DEPARTMENT OF WATER SUPPLY.

7.1.6

**DAILY AVERAGES FOR WATER PRODUCTION
BY AREA, MAUI COUNTY, 2016**

In thousands of gallons

| Area | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec | Previous 12 Months |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------------|
| Central Maui | | | | | | | | | | | | | |
| Groundwater-Īao | 15,306 | 15,721 | 15,126 | 15,146 | 13,118 | 14,388 | 15,465 | 15,521 | 14,256 | 16,937 | 16,537 | 12,798 | 15,275 |
| Īao Tunnel | 1,489 | 1,574 | 1,571 | 1,585 | 1,586 | 1,581 | 1,606 | 1,603 | 684 | 0 | 0 | 0 | 865 |
| Groundwater-Waihe'e | 3,129 | 3,076 | 3,191 | 3,540 | 5,522 | 5,760 | 4,855 | 5,368 | 5,342 | 5,505 | 5,312 | 4,835 | 4,470 |
| Kepaniwai | 720 | 720 | 718 | 720 | 718 | 720 | 719 | 717 | 705 | 720 | 718 | 720 | 719 |
| Maui Lani | 1,100 | 1,091 | 1,062 | 1,097 | 1,101 | 1,100 | 1,075 | 1,096 | 1,137 | 1,097 | 1,108 | 1,102 | 1,099 |
| Surface water | 1,568 | 1,118 | 853 | 448 | 794 | 368 | 111 | 499 | 298 | 0 | 37 | 243 | 538 |
| Upcountry Maui | | | | | | | | | | | | | |
| Surface water | 5,994 | 6,335 | 5,884 | 5,515 | 5,429 | 6,010 | 5,779 | 5,978 | 5,301 | 6,480 | 7,089 | 4,643 | 5,963 |
| Groundwater | 822 | 1,276 | 800 | 824 | 779 | 808 | 970 | 753 | 713 | 720 | 703 | 721 | 712 |
| West Maui | | | | | | | | | | | | | |
| Surface water | 3,699 | 3,885 | 3,838 | 3,625 | 3,697 | 3,842 | 3,716 | 4,026 | 3,537 | 3,894 | 3,891 | 3,318 | 3,761 |
| Groundwater | 1,730 | 1,774 | 1,912 | 1,911 | 1,853 | 2,045 | 2,301 | 2,071 | 2,053 | 1,902 | 1,742 | 1,485 | 1,834 |
| East Maui | | | | | | | | | | | | | |
| Groundwater | 544 | 549 | 501 | 496 | 531 | 540 | 560 | 551 | 525 | 532 | 516 | 252 | 437 |
| Moloka'i | | | | | | | | | | | | | |
| Groundwater | 832 | 950 | 915 | 944 | 986 | 1,023 | 911 | 932 | 846 | 875 | 894 | 700 | 809 |
| Total Water Production | 36,933 | 38,069 | 36,370 | 36,161 | 36,114 | 38,185 | 38,067 | 39,116 | 35,397 | 38,662 | 38,547 | 30,817 | 36,739 |

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY, MONTHLY WATER PRODUCTION.

7.1.7

WATER SYSTEM SERVICE CHARGES AND DEVELOPMENT FEE SCHEDULES

In \$ per 1,000 gallons

Water Service Charges (Fiscal Year 2016)

| Schedule A | | Schedule B (Meter Size) | Per meter/ per month |
|---------------------------------------|--------|------------------------------------|---------------------------------|
| Family Dwellings, 5/8" meters | | | |
| 0 - 5,000 gal | \$1.90 | 5/8 inch | \$19.50 |
| 5,001 - 15,000 | \$3.65 | 3/4 inch | \$30.00 |
| 15,001 - 35,000 | \$5.50 | 1 inch | \$44.50 |
| Over 35,000 | \$6.15 | 1 1/2 inch | \$84.00 |
| Rates (All Others) | | | |
| 0 - 5,000 gal | \$1.90 | 2 inch | \$129.00 |
| 5,001 - 15,000 | \$3.65 | 3 inch | \$225.00 |
| Over 15,000 | \$5.50 | 4 inch | \$385.00 |
| Agricultural Rates | | | |
| Over 15,000 | \$1.00 | 6 inch | \$720.00 |
| Non-Potable Agricultural Rates | | | |
| All usage | \$0.75 | 8 inch | \$1,130.00 |

**Water System
Development Fee Schedule**

| Meter Size | Fee* |
|-------------------|-------------|
| 5/8 inch | \$6,030 |
| 3/4 inch | \$18,884 |
| 1 inch | \$33,356 |
| 1 1/2 inch | \$71,948 |
| 2 inch | \$125,012 |
| 3 inch | \$279,380 |
| 4 inch | \$496,460 |
| 6 inch | \$1,113,932 |
| 8 inch | \$1,977,428 |
| 10 inch | \$3,089,360 |
| 12 inch | \$4,447,436 |

* Plus installation charges.

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY.

7.1.8

WATER SERVICE BY METER SIZE MAUI COUNTY

Fiscal year ending June 30, 2016

| District | 5/8" | 3/4" | 1" | 1 1/2" | 2" | 3" | 4" | 6" | 8" | Total |
|----------------------------|---------------|--------------|--------------|------------|------------|------------|-----------|-----------|----------|---------------|
| Regular Rates | | | | | | | | | | |
| Wailuku | 17,298 | 1,667 | 585 | 433 | 421 | 58 | 33 | 6 | 1 | 20,502 |
| Makawao | 8,882 | 342 | 186 | 78 | 35 | 12 | 2 | 1 | 0 | 9,538 |
| Lahaina | 2,646 | 273 | 140 | 128 | 122 | 25 | 10 | 2 | 0 | 3,346 |
| Hāna | 484 | 14 | 9 | 6 | 4 | 2 | 0 | 0 | 0 | 519 |
| Moloka'i | 1,538 | 44 | 33 | 15 | 17 | 2 | 0 | 1 | 0 | 1,650 |
| Subtotal | 30,848 | 2,340 | 953 | 660 | 599 | 99 | 45 | 10 | 1 | 35,555 |
| Agricultural Meters | | | | | | | | | | |
| Wailuku | 25 | 13 | 10 | 3 | 0 | 2 | 1 | 0 | 0 | 54 |
| Makawao | 313 | 54 | 69 | 84 | 30 | 0 | 0 | 0 | 0 | 550 |
| Lahaina | 4 | 3 | 5 | 0 | 1 | 0 | 1 | 0 | 0 | 14 |
| Hāna | 27 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Moloka'i | 6 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Subtotal | 375 | 71 | 88 | 87 | 31 | 2 | 2 | 0 | 0 | 656 |
| Total | 31,223 | 2,411 | 1,041 | 747 | 630 | 101 | 47 | 10 | 1 | 36,211 |

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY, ANNUAL REPORT FY 2016.

7.1.9

**OUTSIDE WATER DELIVERIES TO
DEPARTMENT OF WATER SUPPLY
MAUI COUNTY**

Fiscal year ending June 30, 2016

| | 1,000 Gallons | Amount | Cost per 1,000 Gallons |
|-----------------------|----------------------|----------------|-----------------------------------|
| Purchased from | | | |
| East Maui Irrigation | 2,207,460 | 132,677 | 0.060 |
| Wailuku Water Co. | 499,765 | 260,202 | 0.521 |
| Maui Land & Pine | 621,861 | 177,735 | 0.286 |
| Hawaiian Home Lands* | 9,144 | 56,882 | 6.221 |
| Total | 3,338,230 | 627,494 | 0.188 |
| District | | | |
| Wailuku | 499,765 | 260,202 | 0.521 |
| Kula | 204,311 | 12,277 | 0.060 |
| Makawao | 1,993,102 | 119,795 | 0.060 |
| Lahaina | 621,861 | 177,735 | 0.286 |
| Hāna | 10,048 | 605 | 0.060 |
| Moloka'i | 9,144 | 56,882 | 6.221 |
| Total | 3,338,230 | 627,494 | 0.188 |

* Billed bi-monthly.

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY, ANNUAL REPORT FY 2016.

7.1.10

WATER SALES TO GENERAL AND AGRICULTURAL CONSUMERS BY DISTRICT, MAUI COUNTY

Fiscal year ending June 30, 2016

| District | Services | Change from FY 2015 | Consumption (1,000 gal) | Change from FY 2015 (1,000 gal) |
|--------------------------|---------------|------------------------|----------------------------|------------------------------------|
| Wailuku District | | | | |
| Wailuku | 6,284 | 410 | 1,255,068 | (4,861) |
| Waihe'e | 193 | 0 | 20,827 | (1,298) |
| Waikapū | 969 | 54 | 118,628 | 1,693 |
| Wailuku Heights | 496 | (50) | 72,760 | 409 |
| Kahului | 5,250 | 496 | 1,452,703 | (13,543) |
| Pu'unēnē | 11 | (3) | 25,774 | (24,980) |
| Kīhei | 5,997 | (816) | 3,954,590 | 163,909 |
| Mā'alaea | 45 | (1) | 64,469 | (14,666) |
| Mākena | 202 | 1 | 256,061 | 17,208 |
| Pā'ia-Kū'au | 905 | (1) | 148,495 | (5,263) |
| Spreckelsville | 204 | 1 | 63,604 | 896 |
| Subtotal | 20,556 | 91 | 7,432,979 | 119,503 |
| Makawao District | | | | |
| Kokomo-Kaupakalua | 1,143 | 18 | 149,046 | (4,811) |
| Kuiaha | 301 | 0 | 46,905 | (1,674) |
| Ha'ikū-Pa'uwela | 843 | (10) | 108,841 | (9,267) |
| Makawao | 1,996 | 5 | 285,340 | (148) |
| Pukalani | 2,072 | 5 | 294,414 | (10,448) |
| Hāli'imaile | 199 | (1) | 34,936 | (3,261) |
| Upper Kula | 2,308 | 7 | 428,790 | (43,562) |
| Lower Kula | 1,105 | (2) | 598,188 | (26,100) |
| 'Ulupalakua-Kanaio | 82 | 1 | 48,707 | (1,660) |
| Kula Ag. Park | 39 | 0 | 144,957 | 11,403 |
| Subtotal | 10,088 | 23 | 2,140,124 | (89,528) |
| Lahaina District | | | | |
| Lahaina | 2,099 | (2) | 815,259 | 16,702 |
| Honokōwai | 449 | (1) | 503,955 | 11,287 |
| 'Alaeloa | 799 | 4 | 566,289 | 36,404 |
| Honokōhau | 13 | 0 | 1,114 | (143) |
| Subtotal | 3,360 | 1 | 1,886,617 | 64,250 |
| Moloka'i District | | | | |
| Kawela-Kaunakakai | 1,167 | (8) | 194,902 | 5,984 |
| 'Ualapu'e | 379 | 378 | 58,036 | (1,176) |
| Kala'e | 113 | (265) | 8,568 | 103 |
| Hālawa | 0 | 0 | 0 | 0 |
| Subtotal | 1,659 | 105 | 261,506 | 4,910 |
| Hāna District | | | | |
| Hāna | 402 | 0 | 49,598 | (246) |
| Nāhiku | 39 | (1) | 3,439 | 773 |
| Ke'anae | 86 | (1) | 9,387 | 2,115 |
| Kaupō | 21 | 0 | 1,844 | (600) |
| Subtotal | 548 | (2) | 64,268 | 2,042 |

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY, ANNUAL REPORT FY 2016.

7.1.11

WATER CONSUMPTION BY DISTRICT MAUI COUNTY

Fiscal year ending June 30, 2016; In 1,000 gallons

| Months | Total | Wailuku | Makawao | Kula | Lahaina | Moloka'i | Hāna |
|---------------------|-------------------|------------------|----------------|------------------|------------------|----------------|---------------|
| General | | | | | | | |
| July | 995,116 | 642,827 | 87,081 | 48,903 | 183,912 | 27,209 | 5,184 |
| August | 984,362 | 656,742 | 84,378 | 52,839 | 166,154 | 19,799 | 4,450 |
| September | 864,579 | 585,547 | 75,363 | 31,411 | 149,264 | 18,410 | 4,584 |
| October | 854,381 | 581,883 | 64,077 | 35,995 | 164,800 | 3,875 | 3,751 |
| November | 941,430 | 639,256 | 71,448 | 44,196 | 149,528 | 33,445 | 3,557 |
| December | 779,871 | 516,837 | 65,333 | 35,281 | 135,943 | 21,692 | 4,785 |
| January | 925,095 | 622,963 | 74,091 | 47,560 | 161,401 | 18,819 | 261 |
| February | 863,551 | 583,963 | 67,012 | 46,062 | 138,822 | 19,621 | 8,071 |
| March | 863,032 | 577,686 | 69,842 | 40,130 | 146,115 | 23,904 | 5,355 |
| April | 922,421 | 611,403 | 72,160 | 41,724 | 169,762 | 22,826 | 4,546 |
| May | 862,749 | 585,396 | 64,485 | 39,971 | 145,188 | 23,022 | 4,687 |
| June | 928,542 | 634,307 | 72,393 | 40,873 | 151,882 | 23,563 | 5,524 |
| Total | 10,785,129 | 7,238,810 | 867,663 | 504,945 | 1,862,771 | 256,185 | 54,755 |
| Agricultural | | | | | | | |
| July | 102,401 | 17,346 | 6,480 | 74,563 | 2,552 | 621 | 839 |
| August | 91,876 | 14,454 | 6,288 | 67,656 | 2,163 | 451 | 864 |
| September | 55,334 | 12,546 | 4,455 | 35,133 | 1,960 | 311 | 929 |
| October | 75,876 | 15,962 | 3,596 | 52,645 | 3,154 | 14 | 505 |
| November | 92,042 | 16,816 | 4,057 | 66,937 | 3,017 | 674 | 541 |
| December | 69,721 | 15,062 | 3,340 | 48,121 | 1,868 | 315 | 1,015 |
| January | 92,527 | 17,085 | 3,502 | 69,751 | 1,790 | 399 | 0 |
| February | 85,759 | 16,740 | 4,076 | 61,236 | 1,586 | 453 | 1,668 |
| March | 80,901 | 16,741 | 4,008 | 57,236 | 1,427 | 547 | 942 |
| April | 78,366 | 14,540 | 4,466 | 56,508 | 1,713 | 479 | 660 |
| May | 85,107 | 18,723 | 3,878 | 60,108 | 1,209 | 431 | 758 |
| June | 90,455 | 18,154 | 3,673 | 65,803 | 1,407 | 626 | 792 |
| Total | 1,000,365 | 194,169 | 51,819 | 715,697 | 23,846 | 5,321 | 9,513 |
| Grand Total | 11,785,494 | 7,432,979 | 919,482 | 1,220,642 | 1,886,617 | 261,506 | 64,268 |

SOURCE: COUNTY OF MAUI, DEPARTMENT OF WATER SUPPLY, ANNUAL REPORT FY 2016.