



MDMS UPDATE

~ METER DATA MANAGEMENT SYSTEM ~



US Army Corps
of Engineers®

VOLUME 7, ISSUE 4 ~ APRIL — MAY 2022

FROM THE PROGRAM MANAGER

Welcome to our April - May 2022 issue of the *Meter Data Management System Update (MDMS)*, designed to keep you informed on the growth and latest developments of the Meter Data Management System and the Army Metering Program.

The Advanced Metrics for Systems course joined the MDMS webinar training rotation in September 2020. This class combines a series of three metrics together into a stop-light chart. Up until now, the MDMS Outreach Team has been manually generating these charts based on color-coding and if-then logic to highlight buildings that are performing well, those that need work and those that may have a bad meter.

We are excited to introduce the new

module that automates the process of generating these color-coded stop-light charts. This newsletter is dedicated to the introduction of this tool and provides many examples of how to use the chart, and then perform further analysis with the MDMS Benchmarking module to determine if a meter is bad, not reporting properly, or is showing excessive energy usage.

As always, our mission is to improve the MDMS experience for end users. Your input is valuable, and we welcome your feedback via the Army Meter Service Desk (AMSD) at: cehnc-army-meter-help@usace.army.mil



From the Program Manager 1

Advanced Metrics—Stop Light Chart 1-5

ADVANCED METRICS—STOP LIGHT CHART

The newly added module “Advanced Metrics – Stop Light Chart” automates the color-coded stop-light chart that previously was manually created and taught in our Advanced Metrics for Systems course. The chart combines a series of three metrics together into a stop-light chart and is tied to a category code for the 30 largest category codes in the Army. The chart is color-coded for each of the three metrics to show where each building falls compared to its peers. There is an if-then logic for each category to tell you if your meter is bad, where you stand against other buildings i.e., top 25% or bottom 25 %, etc.

What are the three factors to compare?

- Baseload
 - Not affected by weather
 - Minimum point of usage that establishes the base for flat non-variable usage
 - Very good factor for telling us certain things
 - Includes plug plus whatever systems were left on
 - Calculated in watts per square feet (Watts/sf)
- % Baseload of Consumption
 - Not affected by weather
 - Divided by your total consumption
 - Theoretically 10-18% is the bottom boundary
 - The top boundary is set at 75%
 - Sets the base for energy savings potential
- Extrapolated EUI
 - Dependent on weather zone
 - Usage based on unit of size for easy comparison
 - Very good metric for the Army (Continued on pg. 2)



MDMS UPDATE

ADVANCED METRICS—STOP LIGHT CHART (CONT. FROM PG. 1)

Let’s look at one example, generated by the Base Load Comparison module, where we’ve got all three factors for Company Headquarters (CO HQ) Category Codes (Cat Code). The yellow highlighted column shows the Watts/sf, the green column is the Baseload as % of Consumption, and the blue column is the Extrapolated EUI for 12 months. This is a very quick and easy way to do this comparison.

| Base Load Comparison | | RPAUII | Square | Cat Code | median | 0.257 | 12 Months C | 29.33 | 25.321 | 27.337 | % of Da | Climate | |
|----------------------|--------|--------|----------------|----------|-----------|--------------------|-------------|----------|------------|-----------|---------|---------|-----------|
| Comma | Reg | Ir | Site | | Base Load | Watts/Sf | | Baseload | 12 Months | 12 Months | | | |
| IMCOM | READI | FOF | FORT HOOD | 181636 | 18818 | CO HQ BLDG (14185) | 4.95 | 0.263 | 169,049.96 | 25.58 | 30.653 | 30.737 | 99.726 2A |
| IMCOM | SUSTA | ABE | BERDEEN PRO | 230789 | 14314 | CO HQ BLDG (14185) | 10.898 | 0.761 | 125,855.63 | 75.643 | 30.001 | 30.083 | 99.726 4A |
| IMCOM | TRAINI | FOF | FORT BENNING | 282371 | 3570 | CO HQ BLDG (14185) | 0.007 | 0.002 | 31,288.08 | 0.199 | 29.904 | 29.904 | 100 3A |
| IMCOM | TRAINI | FOF | FORT BENNING | 282558 | 23987 | CO HQ BLDG (14185) | 6.885 | 0.287 | 209,954.73 | 28.726 | 29.866 | 29.866 | 100 3A |
| IMCOM | READI | FOF | FORT HOOD | 181606 | 5945 | CO HQ BLDG (14185) | 0.358 | 0.06 | 51,704.29 | 6.065 | 29.676 | 29.676 | 100 2A |
| IMCOM | TRAINI | FOF | FORT BENNING | 282477 | 40536 | CO HQ BLDG (14185) | 22.158 | 0.547 | 350,849.54 | 55.325 | 29.533 | 29.533 | 100 3A |
| IMCOM | READI | FOF | FORT BLISS | 1103437 | 63463 | CO HQ BLDG (14185) | 16.899 | 0.266 | 548,687.12 | 26.979 | 29.5 | 29.5 | 100 3B |
| IMCOM | READI | FOF | FORT HOOD | 595828 | 25168 | CO HQ BLDG (14185) | 7.783 | 0.309 | 212,823.99 | 31.947 | 28.853 | 28.933 | 99.726 2A |
| IMCOM | TRAINI | FOF | FORT BENNING | 281624 | 8181 | CO HQ BLDG (14185) | 2.254 | 0.276 | 68,994.80 | 28.624 | 28.776 | 28.776 | 100 3A |
| IMCOM | TRAINI | FOF | FORT BENNING | 282366 | 5157 | CO HQ BLDG (14185) | 0.067 | 0.013 | 43,261.42 | 1.353 | 28.624 | 28.624 | 100 3A |
| IMCOM | READI | FOF | FORT BRAGG | 1051645 | 26622 | CO HQ BLDG (14185) | 1.998 | 0.075 | 223,282.41 | 7.841 | 28.618 | 28.618 | 100 3A |
| IMCOM | PACIFI | OKII | TORII COMMUNIC | 583302 | 7328 | CO HQ BLDG (14185) | 3.993 | 0.545 | 45,770.75 | 56.954 | 21.312 | 28.599 | 74.521 3A |
| IMCOM | READI | FOF | FORT BLISS | 1313810 | 15152 | CO HQ BLDG (14185) | 4.088 | 0.27 | 125,359.44 | 28.564 | 28.23 | 28.23 | 100 3B |
| IMCOM | TRAINI | FOF | FORT RUCKER | 1106682 | 4730 | CO HQ BLDG (14185) | 1.794 | 0.379 | 33,753.42 | 40.186 | 24.349 | 28.214 | 86.301 3A |
| IMCOM | TRAINI | FOF | FORT BENNING | 282559 | 30357 | CO HQ BLDG (14185) | 8.285 | 0.273 | 250,763.60 | 28.942 | 28.186 | 28.186 | 100 3A |
| IMCOM | READI | FOF | FORT BRAGG | 1047682 | 12804 | CO HQ BLDG (14185) | 6.716 | 0.524 | 50,086.58 | 55.992 | 13.347 | 27.999 | 47.671 3A |
| IMCOM | READI | FOF | FORT BRAGG | 1063572 | 14751 | CO HQ BLDG (14185) | 5.808 | 0.394 | 119,354.69 | 42.627 | 27.608 | 27.608 | 100 3A |
| IMCOM | READI | FOF | FORT BRAGG | 297753 | 20096 | CO HQ BLDG (14185) | 8.743 | 0.435 | 161,004.22 | 47.57 | 27.337 | 27.337 | 100 3A |
| IMCOM | READI | FOF | FORT CARSON | 611198 | 27613 | CO HQ BLDG (14185) | 10.871 | 0.394 | 220,625.50 | 43.164 | 27.263 | 27.263 | 100 5B |
| IMCOM | PACIFI | USA | SCHOFIELD BARF | 573476 | 19221 | CO HQ BLDG (14185) | 7.627 | 0.397 | 152,052.21 | 43.578 | 26.992 | 27.216 | 99.178 1A |
| IMCOM | PACIFI | USA | SCHOFIELD BARF | 605501 | 9072 | CO HQ BLDG (14185) | 4 | 0.441 | 71,579.99 | 48.55 | 26.922 | 27.145 | 99.178 1A |
| IMCOM | READI | FOF | FORT BRAGG | 1034470 | 55333 | CO HQ BLDG (14185) | 8.627 | 0.156 | 432,217.66 | 17.484 | 26.653 | 26.653 | 100 3A |
| IMCOM | READI | FOF | FORT BLISS | 1313674 | 15156 | CO HQ BLDG (14185) | 3.013 | 0.199 | 118,058.58 | 22.356 | 26.579 | 26.579 | 100 3B |
| IMCOM | READI | FOF | FORT HOOD | 570816 | 24200 | CO HQ BLDG (14185) | 6.803 | 0.281 | 187,366.49 | 31.717 | 26.418 | 26.491 | 99.726 2A |
| IMCOM | READI | FOF | FORT BLISS | 1119068 | 63463 | CO HQ BLDG (14185) | 12.937 | 0.204 | 492,172.05 | 23.026 | 26.462 | 26.462 | 100 3B |
| IMCOM | READI | FOF | FORT HOOD | 286140 | 5968 | CO HQ BLDG (14185) | 1.084 | 0.182 | 46,027.35 | 20.576 | 26.315 | 26.388 | 99.726 2A |
| IMCOM | PACIFI | USA | SCHOFIELD BARF | 594873 | 17377 | CO HQ BLDG (14185) | 7.613 | 0.438 | 132,586.60 | 49.888 | 26.034 | 26.25 | 99.178 1A |

In our updated course offering, we break this comparison down further using the stop-light charts – which you can now generate automatically with the “Advanced Metrics – Stop Light Chart” module at the Army Headquarters, Command, Region, Installation, or site-level. The report can be found under the Benchmarking sub-menu on the Energy Management page. While we will analyze and clarify specific examples in this article, the legend below shows the classifications of the color-coding in each of the three metrics analyzed.

| Legend | Watts/SF | Baseload as % Consumption | Extrapolated EUI |
|------------|-------------|---------------------------|------------------|
| Bad Meters | Red | Bad Meters | Red |
| Needs Help | Yellow | Needs Help | Yellow |
| OK | Light Green | Good | Light Green |
| Median | Blue | | Blue |
| Good | Light Blue | | Light Blue |
| Great | Light Blue | | Light Blue |
| N/A* | Grey | | Grey |

*No other buildings in Cat Code for reliable comparison data.

In our course, the first example we look at is the Watts/SF for the top range of the report results, shown below. We ran the report for IMCOM, filtered the exported report on the CO HQ Cat Code and then sorted the Watts/SF column, outlined with the purple box, in descending order. You can see the Median is 0.267 for the ~386 buildings in this IMCOM category code. Notice the color-coded cells based on their values against the median and other entries within that column. The red cells are greater than 2 times the median which has been the point where we find the probability of being a bad meter is above 85%. These indicate bad meters or a baseload that was not set properly. We apply the color-coding on the other two columns, the Baseload as % of Consumption and the Extrapolated EUI, which we cover in our training course, one thing to note here in this example is we have a row in the middle where all three of our factors are red. This indicates a very high likelihood that this is a bad meter. (Continued on pg. 3)

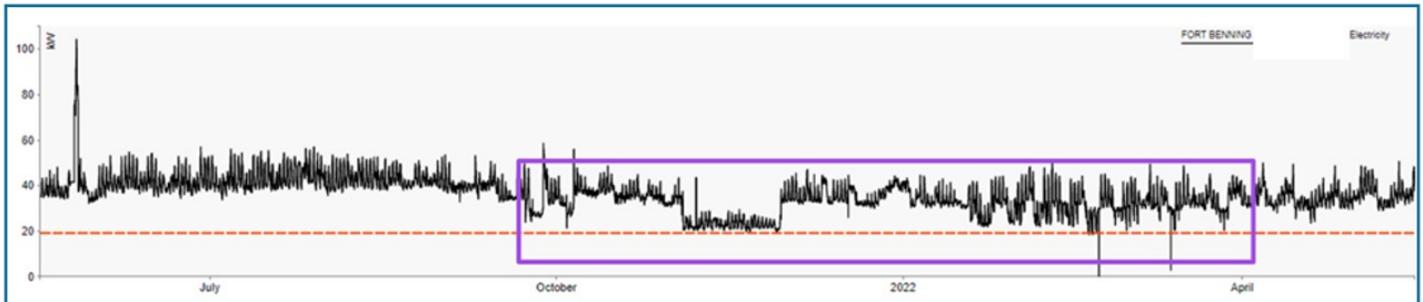


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ADVANCED METRICS—STOP LIGHT CHART (CONT. FROM PG. 2)

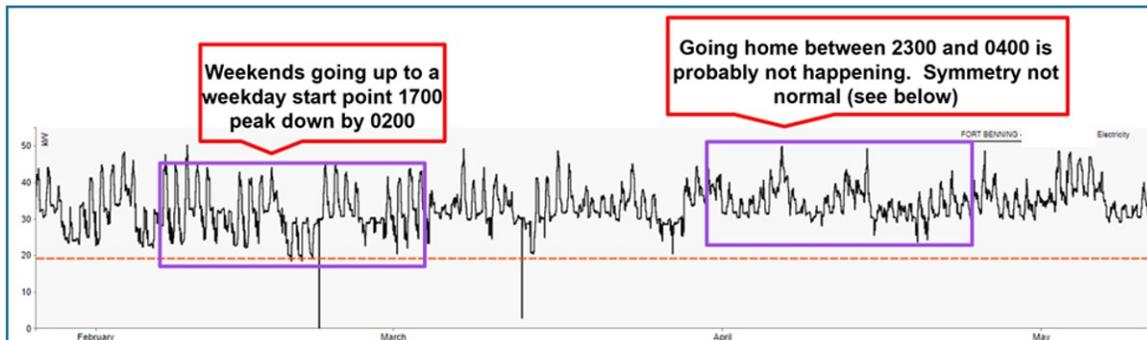
| Comm and Site | Square Footage | Cat Co | Base Load (KW) | Watts/S | 2 Months Consumption (kWh) | Baseload as % Consumption | 12 Months EUI (Electric) | 12 Months Extrapolated EUI (Electric) | % of Data Available | Climate |
|--|----------------|----------|----------------|---------|----------------------------|---------------------------|--------------------------|---------------------------------------|---------------------|---------|
| IMCOM FORT BRAGG - COMPANY HEADQUARTERS | 39,873 | CO HQ BL | 285.25 | 7.154 | 148,457.146 | 991.458 | 12.704 | 21.568 | 58.904 | 3A |
| IMCOM FORT RUCKER SECURITY GUARD | 4,149 | CO HQ BL | 21.03 | 5.069 | 411,920.451 | 44.728 | 338.764 | 338.764 | 100.000 | 3A |
| IMCOM FORT CARSON COMPANY OPERATIONS | 16,710 | CO HQ BL | 39.24 | 2.349 | 394,470.927 | 87.161 | 80.550 | 80.550 | 100.000 | 5B |
| IMCOM FORT STEWART 14185 - CO HQ BLDG | 13,595 | CO HQ BL | 31.40 | 2.310 | 5,111.499 | 103.210 | 1.283 | 66.895 | 1.918 | 2A |
| IMCOM FORT BENNING CO HQ BLDG | 6,824 | CO HQ BL | 13.99 | 2.051 | 159,714.709 | 76.750 | 79.861 | 79.861 | 100.000 | 3A |
| IMCOM FORT HOOD - COMPANY HEADQUARTERS | 5,939 | CO HQ BL | 11.51 | 1.939 | 169,014.676 | 59.683 | 97.104 | 97.104 | 100.000 | 2A |
| IMCOM FORT BENNING 14TH CSH CO HQ BLDG | 6,335 | CO HQ BL | 12.25 | 1.934 | 206,548.508 | 51.959 | 111.259 | 111.259 | 100.000 | 3A |
| IMCOM FORT BENNING CO HQ BLDG | 10,761 | CO HQ BL | 19.19 | 1.784 | 327,657.156 | 51.318 | 103.895 | 103.895 | 100.000 | 3A |
| IMCOM CAMP ZAMA JSANEC Office (Ft. Benning) | 2,261 | CO HQ BL | 3.98 | 1.761 | 53,956.417 | 64.651 | 81.427 | 81.427 | 100.000 | 3A |
| IMCOM TORII COMMUNITY Memo - 1-1ST COMMUNITY | 34,215 | CO HQ BL | 55.10 | 1.611 | 2,560,738.832 | 13.015 | 255.373 | 369.886 | 69.041 | 3A |
| IMCOM FORT BRAGG - CO HQ BLDG | 41,925 | CO HQ BL | 56.75 | 1.354 | 796,190.039 | 62.441 | 64.799 | 64.799 | 100.000 | 3A |
| IMCOM FORT CARSON CO HQS BLDG/A | 24,000 | CO HQ BL | 32.00 | 1.333 | 355,662.804 | 78.816 | 50.565 | 50.565 | 100.000 | 5B |
| IMCOM FORT LEWIS - READINESS MCDONNELL | 16,317 | CO HQ BL | 21.74 | 1.333 | 197,936.772 | 81.993 | 41.392 | 48.579 | 85.205 | 4C |
| IMCOM FORT BRAGG - CO HQ BLDG | 41,925 | CO HQ BL | 54.42 | 1.298 | 700,170.319 | 68.093 | 56.985 | 56.985 | 100.000 | 3A |
| IMCOM FORT BRAGG - CO HQ BLDG | 1,584 | CO HQ BL | 1.99 | 1.261 | 47,267.555 | 37.016 | 101.820 | 101.820 | 100.000 | 3A |
| IMCOM FORT RUCKER MCCAFFERTY HOUSE | 27,660 | CO HQ BL | 34.26 | 1.239 | 688,533.803 | 43.592 | 84.938 | 84.938 | 100.000 | 3A |
| IMCOM FORT MYER 3rd BN/3rd INF/Co | 26,002 | CO HQ BL | 31.43 | 1.209 | 963,075.831 | 28.590 | 126.381 | 126.381 | 100.000 | 4A |
| IMCOM FORT BRAGG - COMPANY HEADQUARTERS | 1,821 | CO HQ BL | 1.95 | 1.075 | 36,182.437 | 47.390 | 67.798 | 67.798 | 100.000 | 3A |
| IMCOM FORT BENNING COMPANY HEADQUARTERS | 16,432 | CO HQ BL | 17.60 | 1.071 | 242,667.914 | 63.554 | 50.391 | 50.391 | 100.000 | 3A |
| IMCOM FORT BENNING 75TH CO HQ's BLDG | 14,077 | CO HQ BL | 14.28 | 1.015 | 224,137.873 | 55.830 | 54.329 | 54.329 | 100.000 | 3A |
| IMCOM FORT BRAGG - PrchtTeamHQ/G | 36,000 | CO HQ BL | 35.56 | 0.988 | 751,259.641 | 41.470 | 71.206 | 71.206 | 100.000 | 3A |

We then dive into several of these buildings in the red range utilizing the MDMS Benchmarking tool.



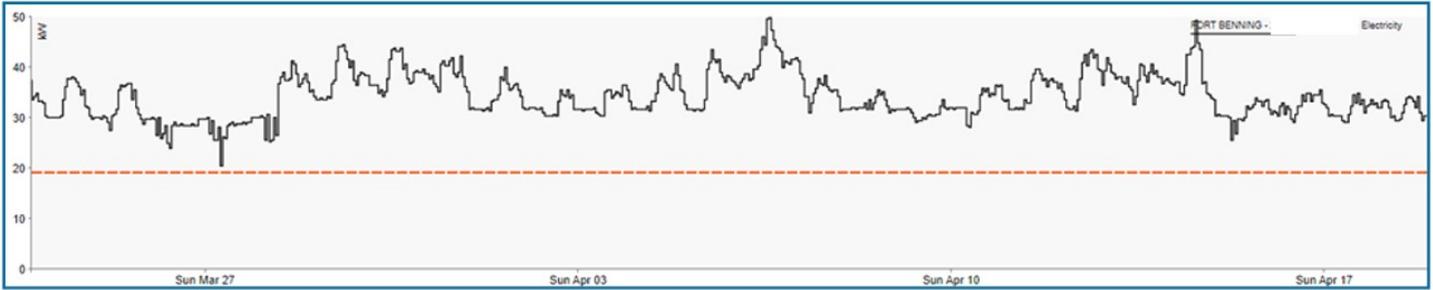
As you can see from the example at Ft Benning the meter has been inconsistent over time. It started last July with the symmetry that we expect but then went bad around October. It never really recovered so this meter is bad or not reporting properly.

And as we drill in further on the timeframe in the left purple box, shown below, note that in our first purple box we see the weekends going up to a start point at 1700 that mirrors that of a weekday and then peak bottoms around 0200. The pattern shown in the right purple box indicates that the workforce is going home between 2300 and 0400, which is not likely, and the symmetry of the pattern is somewhat symmetrical but not consistent. Therefore, this is clearly not normal operations, as show in the next image after scrolling in further. (Continued on pg. 4)



MDMS UPDATE

ADVANCED METRICS—STOP LIGHT CHART (CONT. FROM PG. 3)



Next, we look at the bottom range for that column, as shown below, which shows values down to the mid-point—or our median in the blue cell—all the way down to the bottom. Yellow means it may or may not be a bad meter, but it definitely has excessive energy use. The beige highlighted cells above the median may have some savings, but those savings could be hard to find or justify economically since these are just slightly above the median. The green highlighted cells indicated good energy management, as they are in the top 50 – 75% of the overall category code. The light blue cells indicate exceptional energy use, probably the top 75 percentile. However, there is a slight chance that the meter could be bad as it is on the boundary of small values. The red highlighted cells indicate that most likely the meter is bad, which in general is a wrong meter multiplier or meter connectivity issue—as in the meter is not successfully reporting to MDMS enough to produce a good baseline.

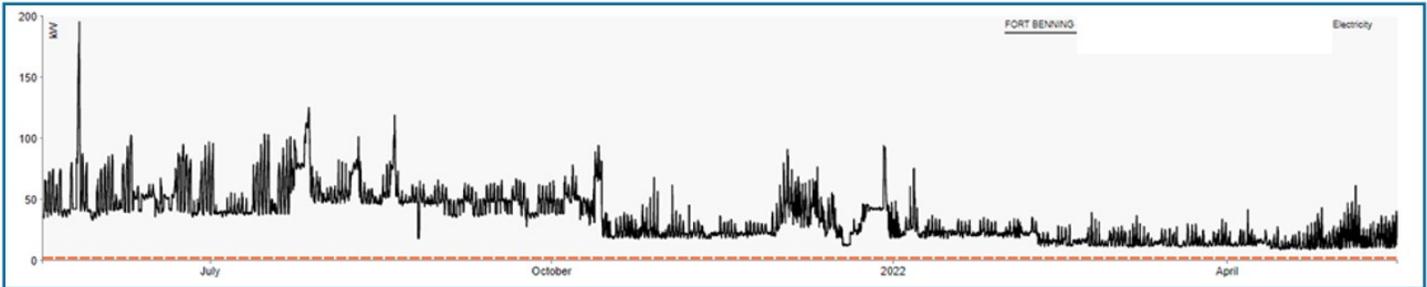
| Comm and Site | Square Footage | Cat Co | Base Load (KW) | Watts/S | 2 Months Consumption (kWh) | Baseload as % Consumption | 12 Months EUI (Electric) | 12 Months Extrapolated EUI (Electric) | % of Data Availat | Climat |
|---|----------------|----------|----------------|---------|----------------------------|---------------------------|--------------------------|---------------------------------------|-------------------|--------|
| IMCOM FORT BRAGG - COMPANY HEADQUARTERS | 39,873 | CO HQ BL | 285.25 | 7.154 | 148,457.146 | 991.458 | 12.704 | 21.568 | 58.904 | 3A |
| IMCOM FORT RUCKER SECURITY GUARDIAN | 4,149 | CO HQ BL | 21.03 | 5.069 | 411,920.451 | 44.728 | 338.764 | 338.764 | 100.000 | 3A |
| IMCOM FORT CARSON COMPANY OPERATIONS | 16,710 | CO HQ BL | 39.24 | 2.349 | 394,470.927 | 87.161 | 80.550 | 80.550 | 100.000 | 5B |
| IMCOM FORT BENNING CO HQ BLDG | 3,480 | CO HQ BL | 1.77 | 0.511 | 42,175.299 | 36.938 | 41.353 | 41.353 | 100.000 | 3A |
| IMCOM FORT BENNING CO HQ BLDG | 6,400 | CO HQ BL | 3.26 | 0.510 | 107,205.885 | 26.680 | 57.157 | 57.157 | 100.000 | 3A |
| IMCOM SCHOFIELD BARRACKS CO HQ BLDG | 8,950 | CO HQ BL | 4.00 | 0.447 | 68,667.730 | 51.028 | 26.179 | 26.179 | 100.000 | 1A |
| IMCOM FORT BRAGG - CO HQ BLDG | 15,664 | CO HQ BL | 6.99 | 0.447 | 140,599.424 | 43.599 | 30.627 | 30.627 | 100.000 | 3A |
| IMCOM FORT BRAGG - CO HQ BLDG | 39,520 | CO HQ BL | 17.57 | 0.445 | 318,928.974 | 48.271 | 27.536 | 27.536 | 100.000 | 3A |
| IMCOM FORT BLISS - CO HQ BLDG 10 | 15,152 | CO HQ BL | 4.10 | 0.271 | 101,567.726 | 35.374 | 22.872 | 22.872 | 100.000 | 3B |
| IMCOM SCHOFIELD BARRACKS CO HQ BLDG | 14,910 | CO HQ BL | 4.00 | 0.268 | 31,178.941 | 38.488 | 7.135 | 20.835 | 34.247 | 1A |
| IMCOM FORT BRAGG - CO HQ BLDG | 96,045 | CO HQ BL | 25.70 | 0.268 | 400,621.275 | 56.209 | 14.233 | 14.233 | 100.000 | 3A |
| IMCOM FORT BLISS - CO HQ BLDG 2 | 41,425 | CO HQ BL | 11.05 | 0.267 | 296,518.543 | 32.646 | 24.424 | 24.424 | 100.000 | 3B |
| IMCOM FORT BRAGG - COMPANY HEADQUARTERS | 15,665 | CO HQ BL | 4.17 | 0.266 | 92,967.067 | 39.301 | 20.250 | 20.250 | 100.000 | 3A |
| IMCOM FORT LEWIS COMPANY HQ BLDG | 41,480 | CO HQ BL | 10.99 | 0.265 | 89,487.183 | 50.428 | 7.361 | 15.713 | 46.849 | 4C |
| IMCOM FORT BLISS - CO HQ BLDG 2 | 55,796 | CO HQ BL | 9.72 | 0.174 | 277,691.873 | 30.674 | 16.982 | 16.982 | 100.000 | 3B |
| IMCOM FORT BRAGG - CO HQ BLDG | 48,510 | CO HQ BL | 8.43 | 0.174 | 282,363.344 | 26.174 | 19.861 | 19.861 | 100.000 | 3A |
| IMCOM FORT CARSON CO HQ BLDG | 23,954 | CO HQ BL | 4.11 | 0.172 | 83,781.509 | 43.017 | 11.934 | 11.934 | 100.000 | 5B |
| IMCOM FORT HOOD - COMPANY HEADQUARTERS | 5,945 | CO HQ BL | 1.01 | 0.170 | 24,939.219 | 35.578 | 14.314 | 14.314 | 100.000 | 2A |
| IMCOM FORT BLISS - CO HQ BLDG 2 | 60,414 | CO HQ BL | 8.24 | 0.136 | 198,890.741 | 36.292 | 11.233 | 11.233 | 100.000 | 3B |
| IMCOM FORT RILEY NOT AVAILABLE | 15,152 | CO HQ BL | 2.05 | 0.136 | 260,494.810 | 6.916 | 58.662 | 58.662 | 100.000 | 4A |
| IMCOM FORT HOOD - CO HQ BLDG | 5,968 | CO HQ BL | 0.80 | 0.135 | 44,664.185 | 15.845 | 25.536 | 25.536 | 100.000 | 2A |
| IMCOM FORT BRAGG - CO HQ BLDG | 19,142 | CO HQ BL | 2.50 | 0.131 | 145,428.216 | 15.071 | 25.923 | 25.923 | 100.000 | 3A |
| IMCOM FORT POLK 509TH COMPANY | 25,168 | CO HQ BL | 2.14 | 0.085 | 111,024.323 | 16.921 | 15.052 | 15.052 | 100.000 | 3A |
| IMCOM FORT BRAGG - 3/4 BN COF BLDG | 24,510 | CO HQ BL | 2.00 | 0.082 | 145,744.528 | 12.021 | 20.290 | 20.290 | 100.000 | 3A |
| IMCOM FORT BENNING COMPANY HEADQUARTERS | 29,784 | CO HQ BL | 2.24 | 0.075 | 342,257.463 | 5.734 | 39.210 | 39.210 | 100.000 | 3A |
| IMCOM FORT POLK 3 -10th CO HQ'S | 23,593 | CO HQ BL | 1.76 | 0.075 | 97,568.442 | 15.880 | 14.111 | 14.111 | 100.000 | 3A |
| IMCOM FORT HOOD - COMPANY HEADQUARTERS | 5,939 | CO HQ BL | 0.40 | 0.067 | 20,769.409 | 16.884 | 11.933 | 11.933 | 100.000 | 2A |
| IMCOM FORT BLISS CO HQ BLDG 57 | 15,170 | CO HQ BL | 0.57 | 0.038 | 70,047.839 | 7.182 | 15.756 | 15.756 | 100.000 | 3B |

The below examples dive into further analyzing one of these buildings in the red range utilizing the MDMS Benchmarking tool. This building's pattern looks okay but is sporadic and not consistent. Note also that the baseload is set too low—2.24 kW or watts/sf—which is what triggers the baseload number being out-of-range on the low side. (Continued on pg. 5)

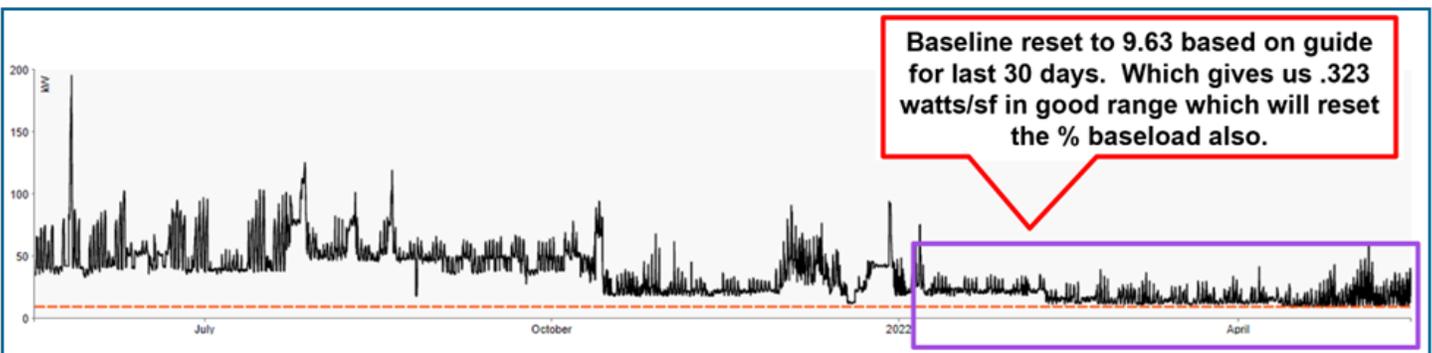


MDMS UPDATE

ADVANCED METRICS—STOP LIGHT CHART (CONT. FROM PG. 4)



In the graph shown below, we have reset the baseline to 9.63 based on the benchmarking tool's guide for the last 30 days, which calculates to 0.323 watts/sf. This is in good range which will reset the % of baseload calculations as well.



We then repeat these same analysis steps on the top, mid, and bottom ranges for both the % Baseload of Consumption and the Extrapolated EUI factors.

The next step is to perform an integrated analysis of the three factors. Looking at the top range, as we stated in our first example, if there are three red highlighted cells across all three metrics, then it is a high probability that you have a bad meter. If there are two red cells, it is most likely an improperly set baseload. Run the MDMS Benchmarking tool for the building and see if the baseline kisses the bottom edge of your curve and that the curve is symmetrical. If these are set correctly, then you probably have a bad meter.

Yellow highlighted cells for 2 or 3 metrics indicates the building needs to be looked at for excessive energy use or the slight possibility of a meter issue. The beige highlighted cells that are slightly above the median may have some savings, but these are probably the last buildings to evaluate as the savings potential is low.

Analyzing the bottom range, green cells in 2-3 of the metrics indicate good energy management. If you have 2-3 metrics in the light blue cells it confirms this building has exceptional energy use—top 25%. If you have 2-3 metrics in the red cells at the bottom of the scale then it indicates a bad meter, with the likelihood of a wrong meter multiplier or a meter connectivity issue—as in the meter is not consistently reporting to MDMS enough to produce a good baseline.

In summary, you can use the stop light chart breakdown to help you do analysis. We have a chart for each of the top 30 category codes based on number of buildings. You can use these charts to get a general feel for where your buildings stand within the Army's category codes. The rule of thumb is anything above 2 times the median value indicates a bad meter and needs attention, whereas anything 1-1.35 times above the median is probably okay. On the lower end, below 0.5 times the median value also indicates a bad meter, whereas 0.75-0.5 times below the median is great and 0.75-1 times below the median is good.

We encourage you to login to MDMS and utilize the new "Advanced Metrics – Stop Light Chart" module. Remember that we cover this tool as well as the principles and analysis covered in this article in our Advanced Metrics for Systems course. However, if you would like to delve into this tool in a one-on-one session, please submit a request with a help desk ticket with the Army Meter Service Desk (AMSD) via the Feedback/Help Request option under the Support menu in MDMS or you may e-mail them at: cehnc-army-meter-help@usace.army.mil.