Executive Order 01.01.2023.07
Energy Savings Goals for State Government

Annual Report

Covering CY22 data and FY23 activities.

Prepared by the Department of General Services
Office of Energy & Sustainability
August 2023

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INTRODUCTION

On May 19, 2023, Governor Moore issued Executive Order 01.01.2023.07, *Leading by Example in State Government*, which creates a new climate initiative and energy savings goal for State-owned buildings. The Executive Order establishes a goal to reduce the energy consumption of State-owned buildings 20% by the year 2031, compared to a fiscal year 2018 baseline. The Executive Order provides State government an opportunity to display both fiscal and environmental responsibility to the rest of Maryland by making government buildings more energy efficient, thereby reducing costs and environmental impacts.

The EO requires DGS, at the end of each fiscal year, to submit an Annual Report to the Governor on the State's progress towards meeting the goal. This first Annual Report covers activities undertaken in fiscal year 2023. Due to the time lag in receiving and processing utility invoices, and to align with the State's participation in the Better Building Challenge and the Better Climate Challenge, the energy data is from CY22. The Annual Report also provides an opportunity for the Top 20 Agencies/campuses that consume 90% of the energy used in State-owned buildings to contribute narrative reports on their energy reduction strategies and projects.

A significant change that occurred since CY21 is the substantial increase in the cost of energy. Both natural gas and electricity prices rose by up to 30% and are forecast to rise over the next year or two. DGS recognizes that increases in energy costs present attractive economic opportunities to invest in energy efficiency with payback periods for those investments becoming shorter with every incremental increase in the cost of energy.

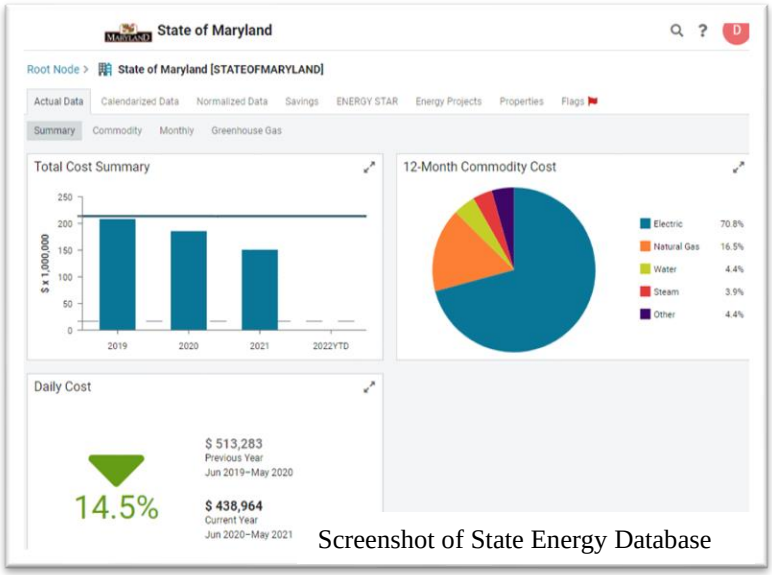
DGS has several specific tasks outlined in the EO that, along with other energy-saving activities, will be reported in this and subsequent Annual Reports. The tasks include:

- Annually, analyze the entire inventory of State-owned buildings to identify and prioritize the least energy efficient buildings in the State.
- Annually, perform energy audits on the buildings identified, and present the audit report with recommendations to the buildings' owner(s).
- Measure post-installation energy use for one year following the installation of the measures identified in the audit reports.
- Report to the governor annually.

This report was compiled by the DGS Office of Energy and Sustainability (OES) and relies heavily on data from the State Energy Database. OES takes the lead role in coordinating with agencies and tracking progress towards meeting the twenty percent savings goal. OES operates the State Energy Database, manages the State's Energy Performance Contracting (EPC) program, Chairs the statewide Green Purchasing Committee, is responsible for installing electric vehicle (EV) charging equipment for the transition of the State fleet to EVs, partners with the University System to annually purchase over $150 million of electricity and natural gas used by state agencies, and is active in initiating energy saving projects throughout the State. OES also functions as the go-to resource for client agencies for all energy-related matters.

SUMMARY OF STATEWIDE BUILDING ENERGY USE

Tracking the energy use of Maryland State government buildings is made possible through the Maryland State Energy Database https://app.energycap.com/app/dashboards/user/2211, which is the most comprehensive database of State government energy use in the country. Begun in 2008, the database has grown to include 15,400 utility accounts with 1.9 million invoices paid through 120 State agency accounts payable offices. In more recent years, DGS staff has updated the database with information on buildings to include their size, build date and primary use, and the database is currently being configured to accept building level submetered data. The constant updating, maintenance and improvements in the database make the current Statewide energy savings goal possible. We cannot manage what we cannot measure.



Screenshot of State Energy Database

This report includes energy usage data from more than 7,000 State-owned buildings across forty-one State agencies and University campuses. **This report covers FY23 activities that occurred since the last Annual Report, but due to the time lag between receiving and processing utility bills, and to align with reporting for the Better Buildings and Better Climate Challenges, the energy data is from CY22**.

Maryland State-owned buildings range in age from the 1670s to the present, with an average age of about 50 years. Much of the heating and cooling equipment in these buildings is ten to twenty years beyond its useful life expectancy. Fortunately, however, older buildings with old equipment provide a great opportunity to increase efficiency to save on utility bills and reduce environmental impact. Newer heating and cooling equipment, as well as lighting, is much more efficient than older units and the financial paybacks are often attractive.

The goal to reduce the energy use of approximately 97 million square feet of State-owned buildings owned by dozens of agencies and university campuses requires prioritizing a list of candidates to work with. Through polling the database, DGS discovered that in FY2018 twenty State agencies and university campuses consumed 91% of the State's energy in State-owned buildings. These agencies and campuses became DGS' primary partners in working towards the 20% savings goal.

The baseline year of the EO is FY 2018, and the baseline data below is based on energy use and existing buildings as of FY18. The following non-building energy consuming entities were excluded from the report:

- Traffic lights, streetlights, transportation, and other structures that do not meet the definitions of "Independently Metered Buildings" or "Campuses" established above
- Buildings that are not owned by the State as of FY2018
- Buildings that were demolished prior to FY2018
- New construction after FY2018

Entire State Government Energy Usage and Cost in State-Owned Buildings:

	Utility Cost ($)	Energy Usage (MMBtu)	Floor Area (SqFt)	Change in Floor Area	EUI (kBtu per SqFt)	Change in EUI
FY18	$180,773,778	9,627,793	94,689,463	-	101.7	-
FY19	$172,691,078	9,431,286	94,689,463	-0.00%	99.6	-2.04%
FY20	$154,087,076	8,791,815	94,133,165	-0.59%	93.4	-8.14%
FY21	$147,695,291	8,592,489	93,995,949	-0.73%	91.4	-10.09%
CY22	**$213,892,475**	**8,416,507**	**93,759,303**	**-0.98%**	**89.8**	**-11.71%**

Top 20 Agencies using 91% of the energy in the State:

	Energy Usage (MMBtu)	Floor Area (SqFt)	Change in Floor Area	EUI (kBtu per SqFt)	Change in EUI
FY18	8,744,722	84,673,162		103.3	
FY19	8,589,198	84,673,162	0.00%	101.4	-1.78%
FY20	8,014,375	84,287,030	-0.46%	95.1	-7.93%
FY21	7,787,507	84,157,614	-0.61%	92.5	-10.40%
CY22	**7,621,669**	**83,938,536**	**-0.87%**	**90.8**	**-12.08%**

Remaining agencies:

	Energy Usage (MMBtu)	Floor Area (SqFt)	Change in Floor Area	EUI (kBtu per SqFt)	Change in EUI
FY18	883,071	9,803,031		88.2	
FY19	842,088	9,803,031	0.00%	84.1	-4.64%
FY20	777,440	9,632,865	-1.70%	79.0	-10.44%
FY21	804,981	9,625,065	-1.78%	81.8	-7.19%
CY22	**794,839**	**9,820,767**	**-1.95%**	**80.9**	**-8.20%**

COVID19 IMPACT ON ENERGY AND ENVIRONMENT

On March 5th, 2020, the State issued a COVID-related state of emergency, and on March 13th, DBM imposed a period of mandatory telework across state agencies for all non-essential State employees who could perform their duties from home. University campuses soon followed by sending students and staff off-campus. The energy-related impact of telework was immediate as staff turned off lights and computers and left their offices, and students left their dorms and classrooms.

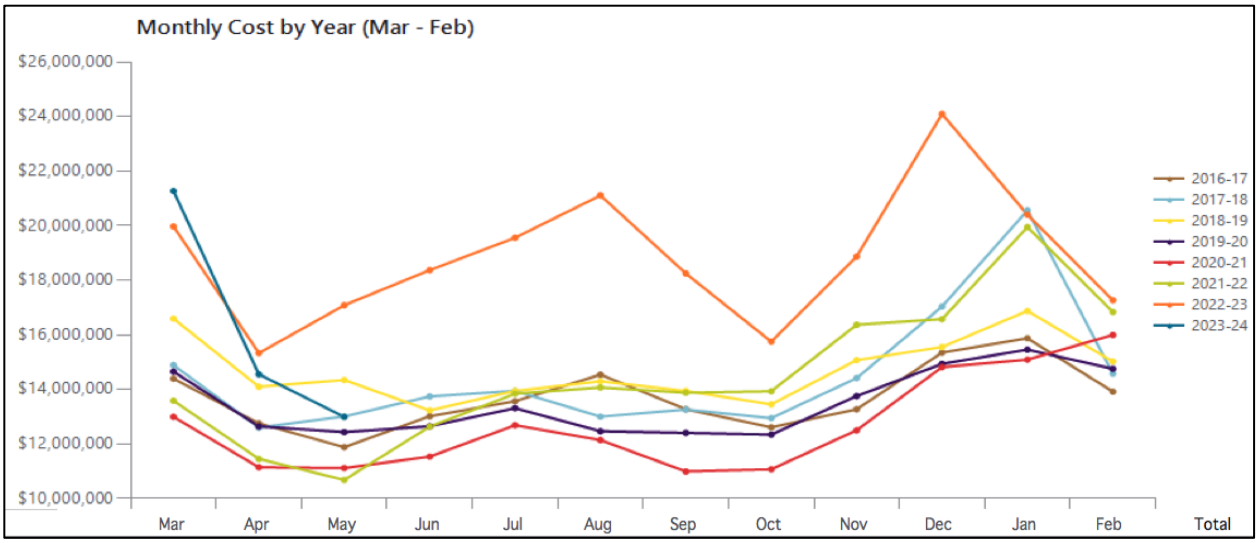
The pandemic brought changes to all aspects of our lives, including how we consume energy, where we consume it, and the amount we consume. The following section provides a detailed analysis of the effect of telework and other COVID-related policies on Maryland State government's use of energy and other utilities during the first year of the pandemic. Our COVID19 analysis is not restricted to the energy use of State-owned buildings as defined in the Executive Order, but instead looks at all utility use and cost for all purposes throughout Maryland State government.

We found that there was a significant reduction in energy and other utility use for the first full 12 months of COVID19 (see below). The reduction was due to both a mandatory telework policy for State employees that left buildings mostly empty, and the closure of university campuses. Further, the State's gained experience with widespread mandated telework brought what may be permanent changes to the way the State operates its buildings. Potential reliance on sustained

telework policies and planned "hotel" office space allocations may reduce energy use in future years.

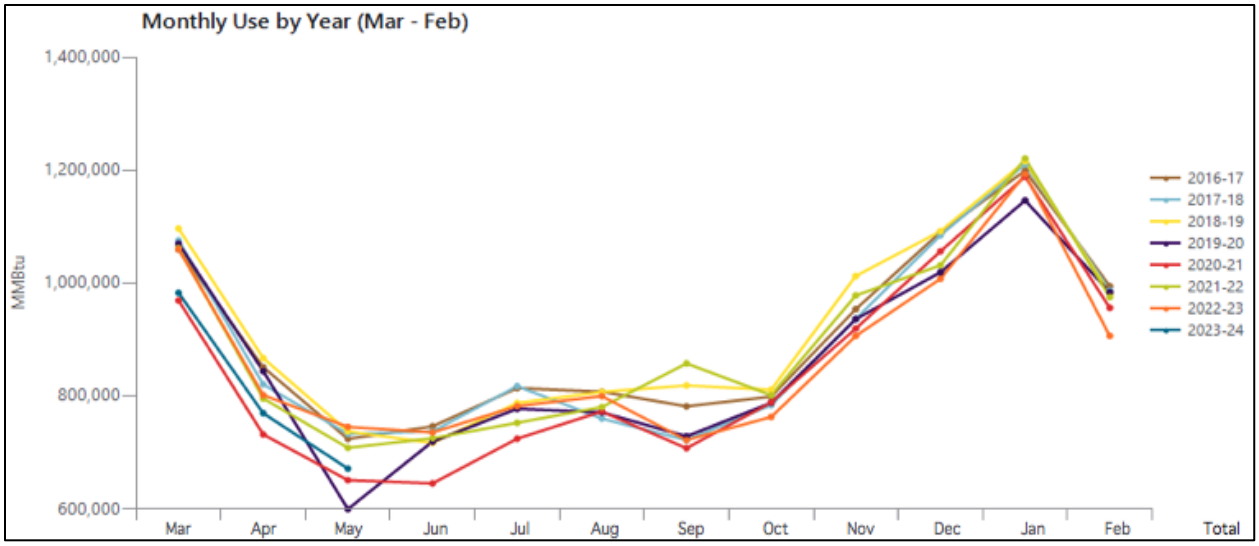
Chart 1 displays all utility expenses (including water and sewer) for the March through February periods from March 2016 to May 2023. The bottom orange line on the graph is March 2020 through February 2021. Taking into account the change in cost per unit of electricity and natural gas between 2019 and 2021, the real reduction in utility expenses during the March 2020 to February 2021 period, compared to the March 2019 to February 2020 period, was approximately $30,373,653. The March 2021 to February 2022 period shows an increase in energy cost due primarily to increasing energy rates.

Chart 1 (weather normalized data)



Energy reduction (electric, natural gas, fuel oil, propane and steam in MMBTUs) for the March through February periods from March 2016 to May 2023 is displayed in Chart 2 below. There was an 8% reduction in energy use during the March 2020 to February 2021 period compared to the average energy use of the previous four years. The associated reduction in GHG emissions was 79,754 tons of CO2, or the equivalent of removing 17,345 cars from the road for one year.

Chart 2 (weather normalized data)



Although most employees were teleworking, State buildings remained open during the pandemic year. Heating, cooling, and building ventilation remained active, whereas office equipment and lighting went mostly unused. We found that the impact of telework on energy use varied between different energy sources, with electricity use declining more than 15% during the March 2020 through February 2021 period, whereas natural gas use increased by 2% over the same period.

The large reduction in electricity use was primarily due to the drastic reduction of lighting and plug loads such as computers and other office equipment, and the increased consumption of natural gas use was likely due to building managers increasing building ventilation to combat the spread of COVID. As more outside air was brought in, more heat was needed, causing natural gas consumption to rise. Anecdotal evidence from some of the university campus energy managers confirms this assumption. (See box).

TOWSON UNIVERSITY

As the university made the decision to keep buildings open, there were also modifications made to ventilation systems to address COVID concerns. These were primarily adjustments to automation systems increasing outside-air intake and thereby increasing ventilation related energy consumption in many buildings.

Steve Kolb
Energy Manager
Towson University

As State employees filter back to their offices, and significantly, as university campuses reopen, we expect to see an increase in energy use post-pandemic. With building occupancy rates going up, increased energy use is inevitable, and the increase in ventilation will remain for the foreseeable future. However, we are anticipating that the energy penalty associated with bringing more outside air into our buildings will be partially offset by a more liberal telework policy. On balance, we expected to find that energy use for FY22 to be on a par or slightly lower than FY21, with energy use for FY23 approaching pre-pandemic levels. As expected, energy use for the March 2021 to February 2022 period remains below historic averages and shows a persistence in energy use reductions following the initial year of COVID. The reductions are likely due to ongoing energy savings initiatives, continued teleworking and the reduction and combining of office space.

Beyond the influence of mandatory telework on reducing the State's utility budget, the policy had a positive environmental impact as well due to reduced employee commuting. According to the latest American Community Survey, Maryland is first in the nation in terms of longest commuting times with an average of 32.5 minutes[1], and an average commute distance of 16 miles round trip[2]. Data collected by DGS Real Estate division shows that 22,574 Maryland State employees teleworked either all or part time during 2020, which avoided approximately 90,296,000 miles driven and a reduction of 40,212 tons of CO2.

STRATEGIES FOR ACHIEVING ENERGY REDUCTIONS IN STATE OPERATIONS

OES is pursuing a three-pronged approach to achieve the energy savings goal of the EO; 1) identify savings opportunities through performing energy audits, 2) engage in EPCs and other energy projects, and 3) agency engagement. OES is working closely with Maryland utilities on all efficiency projects to take advantage of their technical resources and rebate opportunities. OES is also coordinating with DGS Facilities Engineering division on replacement HVAC systems to ensure that DGS and DGS' client agencies are installing efficient, cost-effective systems that not only meet the goals of the EO but meet the State's GHG reduction efforts as well.

Energy Audits

The energy auditing program is described in detail in Sections 3&4 below.

Energy Performance Contracting (EPC) Program

EPCs are large projects dedicated to reducing the energy costs of a facility, in which the savings, guaranteed by the company performing the work, covers the cost of the project. OES drafts and issues the master contract for the EPC program, advises and assists agencies with individual projects, and coordinates with the State Treasury Office on financing. There are currently 24 active EPCs, with a total contract value of $210 million, annual guaranteed savings of more than $21 million, and annual GHG reductions of 80,000 tons of CO-2.

In the 2020 session of the General Assembly, DGS introduced a bill that was subsequently passed by the legislature to increase the reliability and value of future EPC projects. Each EPC going forward will require DGS' review and approval before going to the Board of Public Works and will require DGS to review each annual Measurement and Verification Report to assure that the annual guaranteed savings have been met.
In the 2021 session of the General Assembly, DGS introduced SB179 that was subsequently passed. Senate Bill 179 extended the potential maximum lease term for an Energy Performance Contract (EPC) from 15 years to 30 years. Extending the potential lease term to up to 30 years

[1] https://www.roads.maryland.gov/OPPEN/Traffic_Volume_Trends1.pdf
[2] https://www.streetlightdata.com/wp-content/uploads/2018/03/Commutes-Across-America_180201.pdf

allows for larger-capital intensive pieces of equipment, such as HVAC systems, replacement windows and envelope improvements such as air sealing and insulation, and other longer payback conservation measures to be included in possible EPC projects. The longer lease life would enable the equipment to reach its payback period, which is beyond the current 15-year lease limit, so that each measure is paid for through the project's guaranteed savings. Extending EPCs to up to 30 years would positively impact DGS and other State agencies by allowing for more effective and efficient ways to address deferred maintenance items and other projects.

Where EPCs are viable projects, they will become a major source of savings and will play a significant role in achieving the goal of the EO. However, EPCs typically require up to two years of design and development before energy saving measures are installed, and another year before those savings are accounted for and attributed. Therefore, significant savings from new EPC projects will only begin to show up during the fourth or fifth year of the EO.

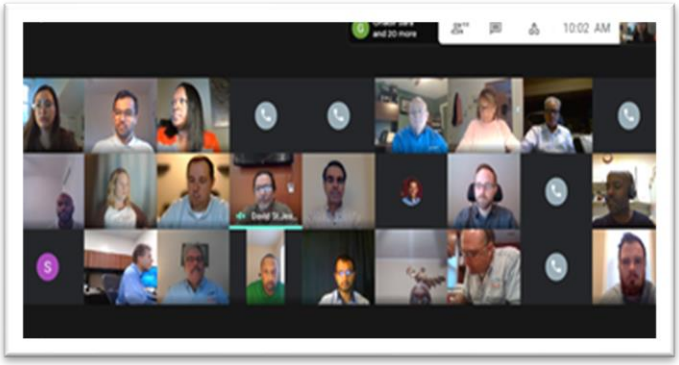
OES is engaged in early-stage EPC discussions with DPSC and MTA, with the DPSC project expected to schedule a pre-bid meeting by late 2023. In order to effectively manage these projects, OES entered into a task order agreement with an engineering consulting firm. The DPSC project at the MCI-Hagerstown facility has the potential to be one of the largest projects undertaken in the EPC program and should deliver significant cost, environmental and energy savings. The MTA project has significant challenges due to the nature of the expected energy conservation measures, which will include energy savings from regenerative braking and track heating on the subway system. OES is working with MTA to overcome these challenges and expects to start this project in 2024.

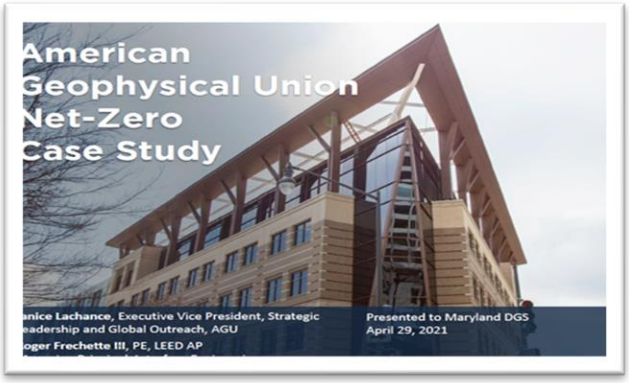
OES entered into a contract in 2022 with a firm to provide third-party review of the annual Measurement and Verification (M&V) reports submitted by energy service companies (ESCO) under contract with the State. The annual M&V reports are created by ESCOs to track the energy use at several EPC projects to assure that the annual savings guarantee is met. The firm chosen through the RFP brings professional third-party M&V review to the EPC program and provides the State with a high level of confidence that promised savings are being met. The firm is also available to assist OES in developing energy baselines for all EPC projects.

Moving forward, OES intends to integrate decarbonization with EPC projects. Since decarbonization does not in itself provide financial savings, OES will be seeking to add funds to EPC projects.

Agency Engagement

The Executive Order recognizes that the tasks outlined for DGS will not on their own achieve the 20% savings goal, and the EO states that "*All units of State government shall, in support of their core missions, implement projects and initiatives to conserve energy and reduce their greenhouse gas emissions* ". In light of this, and in an effort to collaborate and coordinate on energy savings activities





throughout State government, OES initiated quarterly meetings of the Working Group on Reducing Energy use in State Operations. The Working Group, chaired by DGS OES, includes representatives of the 20 agencies and university campuses that consume 91% of the energy used in State operations.
The Working Group continued to meet virtually during the pandemic and met three times in FY23 to share information on each entity's efforts to achieve the energy reduction goal, to inform each other about ongoing and future energy projects, and to educate the members on new technologies and opportunities in the energy field. One or two private sector firms were invited to each meeting to give presentations on energy efficiency opportunities, utility rebates, and emerging technologies. Attendance at the virtual meetings was excellent, with between forty to fifty participants at each.

Members of the Working Group, their baseline energy use in FY18, and building area include:

Rank	Agency	Floor Area (SqFt)	FY18 Energy Use (MMBtu)	% of State Total MMBtu
1	University of Maryland College Park (UMCP)	14,767,416	1,798,702	18.68%
2	Public Safety & Correctional Srvcs, Dept of (DPSCS)	12,828,571	1,312,002	13.63%
3	University of Maryland Baltimore (UMB)	5,950,069	904,967	9.40%
4	University of Maryland Baltimore County (UMBC)	4,467,954	580,472	6.03%
5	General Services, Dept of (DGS)	6,498,791	575,501	5.98%
6	Maryland Aviation Administration (MDOT-MAA)	2,920,577	567,330	5.89%
7	Towson University (TU)	6,036,906	463,915	4.82%
8	Health, Maryland Dept of (MDH)	3,208,181	382,122	3.97%
9	Morgan State University (MSU)	3,396,043	342,866	3.56%
10	Maryland Transit Administration (MDOT-MTA)	1,562,344	340,403	3.54%
11	Frostburg State University (FSU)	1,541,581	207,429	2.15%
12	Salisbury University (SU)	2,217,621	182,154	1.89%

13	Stadium Authority, MD (STADAUTH)	4,274,000	168,040	1.75%
14	University of Maryland Eastern Shore (UMES)	1,093,365	154,368	1.60%
15	Bowie State University (BSU)	1,332,563	153,917	1.60%
16	State Highway Administration (MDOT-SHA)	2,276,739	139,194	1.45%
17	Maryland Port Administration (MDOT-MPA)	6,513,833	134,714	1.40%
18	Coppin State University (CSU)	1,096,489	125,809	1.31%
19	Maryland Transportation Authority (MDTA)	1,082,817	113,602	1.18%
20	Military Dept (DMIL)	1,607,302	97,215	1.01%

PROGRESS ON DGS ENERGY-SAVING INITIATIVES

1. Determine FY 18 Baseline

In order to accurately measure progress towards the 20% energy reduction goal, an energy use baseline was established. Over several months in 2019 and 2020, the data team at OES requested and received utility bill data from agencies, which was analyzed using the State Energy Database to determine the FY18 baseline and confirm its completeness. The database is the most comprehensive resource of State facility energy use and cost in the nation and is continually improved through gathering and uploading agency supplied data. Since the database also includes data attributes of the facilities themselves, such as building size, age and primary use, it enables the State to establish an agency specific, and statewide baseline of usage, and to track and report on progress for each project.

The OES manages a longstanding and ongoing comprehensive data collection campaign to collect from agencies any missing utility bills and any missing building data attributes, including building size (gross square footage), building age, primary use and energy meters serving each facility. For the EO, the data team collaborated with agencies to identify the portion of their portfolio that falls under the scope of the Executive Order (i.e., state-owned buildings) to confirm that their energy use is accurately attributed. Energy use associated with leased facilities, and from non-buildings (for example, mass transit, traffic lighting, highway lighting, signage, etc.) are excluded from the baseline and the goal of the Executive Order, but energy reductions and current projects on non-buildings will be reported by select individual agencies in the Annual Report. A more detailed description of data reporting methodology is included in Appendix 1.

In FY22, in an effort to achieve a more complete and accurate dataset, DGS initiated an "Energy Data Centralization" program. The current system requires utility vendors to submit their invoices to accounts payable offices at State agencies, who then submit the invoices to the database contractor. The new program, which uses DGS as a test case, has the utility vendors submitting their invoices directly to an IT platform managed by the database contractor. Agency accounts payable staff can then access the platform and download PDF copies of their invoices and process them in the usual manner. DGS hopes that by receiving invoices in this manner, we will get a higher percentage of on-time utility bills which will enable us to report more accurately

for climate and energy-savings related projects. After the DGS pilot, OES hopes to roll the program out to other agencies.

2. Identify Savings Opportunities

Energy professionals at OES have developed several strategies to identify buildings to retrofit. To reduce the State's costs, OES is working with BGE, SMECO, PEPCO and Delmarva utilities to identify groups of buildings that are qualified for various rebate programs. Each group of buildings will have projects addressed through the audit, procurement and implementation phases depending on the type of rebate available, and the associated utility guidelines. Concurrently, OES and the energy auditors use the database to identify and prioritize buildings to be audited that lie outside of standard utility rebate programs, which will include the master-metered campuses.

Some of the buildings audited under the Executive Order will be good candidates for an Energy Performance Contract (EPC), but many will not. There are several agencies that own buildings, but do not spend enough annually on energy to be feasible for an EPC. Some examples include:

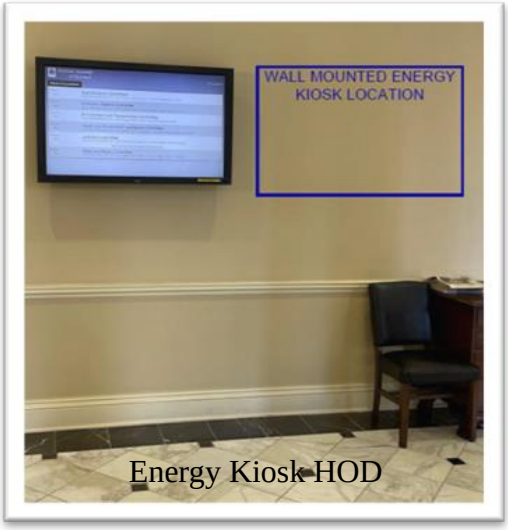
Agency	Owned Buildings (square feet)	FY22 Spend in Owned Buildings ($)
MD Public Television	140,497	$791,193
Veterans Affairs	358,048	$1,048,506
Food Center Authority	63,600	$61,533
Dept. of Planning	103,285	$246,217

Other agencies, such as DNR (FY22 energy spend $2,703,195) have widespread facilities that offer good one-off opportunities but are poor candidates for an EPC. There are also several agencies that are currently under an EPC that began years ago, that have new savings opportunities due to improved lighting and other technological advancements in efficiency that have become available over the last 5-10 years. Non-EPC projects will be addressed in the manner described in Section 4 below.

3. Sub-metering

Over three quarters of the buildings in the State portfolio are on master-metered campuses, in which only one, or a few, central meters record the energy use of the entire campus. On these campuses, the energy use of each individual building is unknown. However, submetering at the building level would provide a window to energy use that DGS could use to identify poor performers, be alerted to increases in energy use, track energy savings of individual projects, and inform the "right sizing" of HVAC replacements. Recognizing the potential benefits of metering, in 2020 DGS initiated a building-level submetering program that will harvest data from currently un-metered buildings and send that data to the State Energy Database.

During 2019 and 2020, OES solicited submeter installation firms, developed a Meter Plan for the Annapolis Capitol Complex, entered into an MOU with MEA to access federal grant funds, and in early 2021 moved forward with installing building-level submeters at the entire Annapolis Capitol Complex. All data from the submeters, which includes meters for steam, chilled water, city water and electricity will be automatically uploaded to the State Energy Database and will be accessible via wall-mounted video monitors at the Miller Senate and the House of Delegates and a free-standing kiosk at the State House. The project was completed in August 2023 and OES has begun to analyze the data to identify energy-savings opportunities in Annapolis.



Energy Kiosk-HOD

4. Perform Energy Audits

The EO requires DGS to conduct energy audits on at least 2 million square feet of State-owned buildings annually. In March 2020, DGS signed its first MOU with Small and Smart Thermal Systems Laboratory (S2TS) at the University of Maryland, College Park to perform audits on State-owned buildings throughout the state. S2TS is comprised of a team of graduate mechanical engineering students, with oversight from faculty and professional engineers, who have experience performing energy audits at the College Park campus. OES has a full-time energy auditing program manager on staff to oversee the effort. DGS feels that this arrangement provides not only cost-effective energy auditing services, but also provides valuable on-the-job training for recent graduates of the University of Maryland.

Per the EO, energy audits have concentrated on finding low-cost measures for increasing energy efficiency that will result in energy cost savings within five to ten years that meet or exceed the costs of the measures themselves. The auditors have been instructed to evaluate all measures at each site assigned to them and to blend the savings of the suite of measures to achieve an overall five to ten-year payback period per project.

In July of 2021 the auditing team started their second round of energy assessments under a new MOU. The team performed audits on 2,166287 square feet of state-owned buildings, consisting of 45 locations for three different

agencies, Maryland School for the Deaf (MSD) Frederick Campus, Department of Military (DMIL) Maryland National Guard, and the Maryland Transit Administration (MTA).

The focus for FY2023 was to produce actionable energy modeling reports that further align the auditing program with professional recommendations for conducting energy assessments. The first steps were for the team to analyze the historic utility use, peak demand, and cost of all facilities to develop the energy utilization index (EUI) of the building. The auditors then performed walkthrough energy assessments and compared each building's EUI to similar building's EUI scores to assess the potential for improved energy performance. The initial assessments were also used to develop a priority list for buildings that need a more enhanced analysis, including energy consumption and peak demand analysis.

Energy Survey Analysis (ESA) reports were prepared for facilities where no redundant/oversized systems were present that resulted in high energy consumption which could affect the EUI. ESAs were used to identified low-cost/no-cost measures for improving energy efficiency and provide a listing of potential capital improvements that merit further consideration. For buildings that were recommended for further analysis, ESA reports also included eQuest modeling, electrification recommendations and a listing of potential capital-intensive improvements with savings and cost analyses of all practical energy efficiency measures (EEMs).

ESA reports are designed to provide adequate information for the agency head/operator to make decisions on which energy savings recommendations to act upon. During FY2023, meetings were held with each agency to discuss which EEMs from the FY2022 ESA reports can be implement as installed measures.
Measures identified during the ESA analysis reviews are then be bid out where a more detailed scope of work is generated with more rigorous engineering and economic analyses, to include vendor pricing, life-cycle cost analysis, construction, and ancillary cost.

5. Opportunities Identified in the Audit Reports

OES continues to analyze the results of the audits to develop scopes of work for one or more energy-saving projects at the facilities audited. Concurrently, OES is working with DBM, MEA and the utilities to identify funding. Lastly, OES developed a procurement vehicle through an IQC to prequalify energy contracting firms to have them available to address the measures identified in the audits.

The primary means of financing projects identified through the audits will be through agency funds, utility rebates, and/or MEA loans.

Two projects that came out of the audit analysis in FY22 that are moving towards implementation are for lighting, refrigeration, and HVAC controls at the Office of Chief Medical Examiner in Baltimore City, and a second project at the Rockville Courthouse/Multiservice Center for lighting and building modifications to reduce the HVAC load.

6. LED Lighting Project

In FY 23 DGS encumbered $3 million in SEIF funds and an additional $620,000 in a loan from MEA to install approximately 16,720 LED lighting fixtures and controls throughout 5 State-owned buildings totaling 1.04 million square feet. Annual cost savings from the projects will be nearly $300,000 with electricity savings of 2 million kWh per year.

7. Green Purchasing Specifications

As Chair of the Green Purchasing Committee, DGS is responsible for creating "green specifications" for a range of products that are purchased by the State. Over the past year, DGS has created purchasing specifications for lighting, HVAC and plumbing fixtures that specify an increase in efficiency of each product purchased. The increases in efficiency bring the purchases of these items in line with the requirements of the High-Performance Building Program and other energy and environmental goals and programs.

The green specifications have been included as an appendix to the DGS Procedure Manual and have been socialized to DGS construction and maintenance divisions, the architectural and engineering firms under contract to DGS, and the Office of State Procurement. As the specifications are drafted, they are sent to DGS professional staff for internal review and to outside technical consulting firms to determine market availability. We expect that as these specifications are incorporated into future task orders and contract documents, they will result in significant cost, environmental and energy savings for both new construction and facility maintenance and renewal projects.

8. Integration with DGS Construction Divisions

OES has been working with DGS Capital and Facilities Maintenance divisions over the past two years to integrate "green" and energy efficient building practices into building design and renovations. OES drafted a "Green Building Standards" document and presented its contents on a webinar with several of the capital and maintenance division project managers. Following that presentation, OES held a webinar for project managers on "HVAC Sizing Considerations" to overcome a common problem when designing new and replacement HVAC systems. In order to make green building an ongoing and permanent part of DGS' decision-making process, OES drafted an addendum to the DGS Procedure Manual that incorporates energy efficient and sustainable design into common practices.

ACTIVITY REPORTS FROM THE TOP 20 ENERGY USERS

OES offered each of the top 20 energy-using agencies and university campuses in the State, all of whom are members of the Working Group on Reducing Energy use in State Operations, an opportunity to update their FY23 efforts in the sections below. Previous Annual Reports contain information on each agency/campus for the period prior to FY23. Below the heading for each agency is a snapshot of energy usage and data compliance compiled by data analysts at OES. All energy usage data is reported by each agency to the State Energy Database.

The Executive Order recognizes that data compliance is critical to accurate reporting for each agency and states that, "*Each unit of State government shall, each month, or upon request, provide DGS with access to available data about its facility and copies of the unit's utility bills*". Therefore, DGS is also reporting on the data compliance of each Agency, in terms of the number of utility bills still missing from the State Energy Database and the estimated value of those bills, based on historical trends.

The Energy Data and Compliance Snapshot is followed by a self-report of energy efficiency activities, submitted by the agency or university campus. Where there is no report, none was submitted to DGS.

I. University of Maryland College Park (UMCP)

Agency Energy Usage Snapshot:

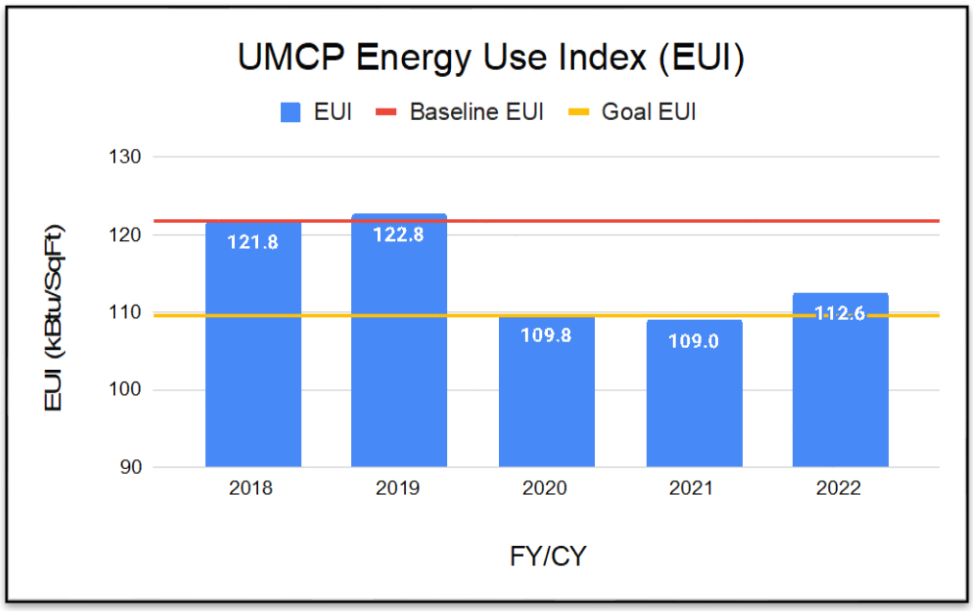
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	Change in usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	14,767,416*	1,798,702*		18.68%	121.8*
FY19	14,767,416*	1,814,048*	0.8%*	19.23%	122.8*
FY20	14,767,416	1,621,326	-9.9%	18.44%	109.8
FY21	14,767,416	1,609,390	-10.5%	18.73%	109.0
CY22	14,767,416	1,663,308	-7.5%	19.76%	112.6

*Updated from FY18-19 Annual Report.

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	96.17%	117	$62,924
FY19	96.17%	161	$183,427
FY20	96.17%	54	$34,399
FY21	96.17%	157	$112,155
CY22	96.17%	66	$33,485

Change in Energy Use Index (EUI):



Agency report:

The University of Maryland, College Park is the state's flagship university and one of the nation's preeminent public research universities. A global leader in research, entrepreneurship and innovation, the university is home to more than 40,700 students, 14,000 faculty and staff, and 388,000 alumni all dedicated to the pursuit of Fearless Ideas. Located just outside Washington, D.C., we discover and share new knowledge every day through our renowned research enterprise and programs in academics, the arts and athletics. And we are committed to social entrepreneurship as the nation's first "Do Good" campus.

The University of Maryland became a charter signatory of the American College and University Presidents Climate Commitment in 2007 and put itself on the path of greater environmental stewardship and sustainability. Since that time, the university adopted a Strategic Plan in 2008, a Climate Action Plan in 2009, a Facilities Master Plan in 2011, a Sustainable Water Use and Watershed Report in 2014, and several other guiding documents that together paint a vivid picture of a SustainableUMD.

UMD is proud to participate in the EPA's Green Power Partnership. Since 2014 UMD has consistently placed on the EPA's list of Top 30 Colleges and Universities list of largest green power users. For the latest reporting period of July 2023, UMD is ranked #7 among colleges and universities and #87 on the National Top 100 list.

In 2020, the university reached its aggressive and lead-by-example goal of 100% purchased electricity from renewable sources. In April 2021, the University of Maryland announced it was redoubling its efforts to fight climate change and committed to carbon neutrality by 2025 through a mix of infrastructure improvement, electric vehicle purchases and targeted investments in sustainability. We are in the process of updating our Climate Action Plan to outline strategies that will help us achieve this accelerated timeline for carbon neutrality. Some of these strategies include: 1) a public-private partnership called the NextGen Energy Program which will kick off a

plan to replace, renew and modernize UMD's aging energy system which provides heating, cooling and electric services to campus; 2) a plan to make the university fleet produce zero emissions by replacing approximately 1,000 gas powered light-duty trucks and vehicles with electric models as they wear out; and 3) to expand outreach to our campus community to stay engaged and informed of our progress through the creation of SustainableUMDProgressHub, a data driven website that allow users to learn all about the sustainability related activities that are completed, in progress, and planned for at UMD.

In July 2023, the university was selected to receive nearly $40 million in grant funding to fast-track plans to convert its bus fleet from diesel to electric powered. The funds from the U.S. Department of Transportation's Federal Transit Administration (FTA) will be used to purchase 35 battery electric buses, bus charging stations and associated infrastructure as well as to train drivers and maintenance staff to operate and service electric buses. In addition, the university is moving ahead with a pilot project of 50 electric vehicles in its service fleet to collect necessary data as it systematically replaces the remainder of its fleet with electric vehicles. UMD is working closely with Pepco to take advantage of its Smart Charge and other EV incentives to support its transition to zero emission vehicles.

In collaboration with and agreement from DGS, UMD is basing its report utilizing site energy data, not its utility bills. The reason for this methodology is due to the large Combined Heat and Power (CHP) plant at UMD. As it reached its 20-year equipment life span, the CHP has been unreliable in the past few years and fluctuations in operating hours year over year has a very significant impact on total MMBtus, which is the metric for this report. Utilizing utility bills does not account for the inherent efficiency of a CHP plant which, when operating at capacity, provides approximately half of the campus electricity consumption and all of its steam for heating needs. Reporting the gas MMBtus associated with the CHP would be the equivalent of a source energy resource which is then co-mingled with other site energy resources such as grid purchased electricity. It would not be comparable to what other state agencies are reporting since they do not have any distributed generation capabilities. It also would not be representative of the energy efficiency improvements that UMD has implemented over the years as the campus physical footprint continues to grow with the addition of new buildings to meet programmatic needs. Because of its extensive building sub-meter network, UMD is able to provide the site energy use data, which is comparable to what other state agencies are reporting. Using this methodology, UMD has reduced its energy consumption by over nearly 12% in FY23 over FY18 baseline.

The continued reduction against the baseline year can be attributed to intentional energy efficiency improvements that were implemented beginning in FY19 with savings continuing to be realized in FY23. These efforts include construction of an energy performance contract affecting eight high EUI buildings, a pilot project of automated scheduling of large spaces such as lecture halls that would significantly reduce HVAC demand during unoccupied/unscheduled periods, ongoing lighting upgrade projects and rolling out an energy management tool that empowered our frontline HVAC personnel with current energy data to alert them to any potential operational anomalies. In FY22, we completed lighting upgrades in ten buildings that saves 2.2

million kWhs annually. With the success of the pilot automated scheduling project, we continue to expand this strategy to other scheduling software used across campus and continue refresher courses on the energy management tool.

The University of Maryland welcomed students back to campus for full in person learning in the 2021-2022 (FY22) academic year; the previous year FY21 was remote learning in the fall semester and low density occupancy in the spring semester. We continue to improve energy efficiency and reduce campus energy consumption through the strategies outlined above as we return to pre-pandemic operations.

II. Department of Public Safety & Correctional Services (DPSCS)

Agency Energy Usage Snapshot:

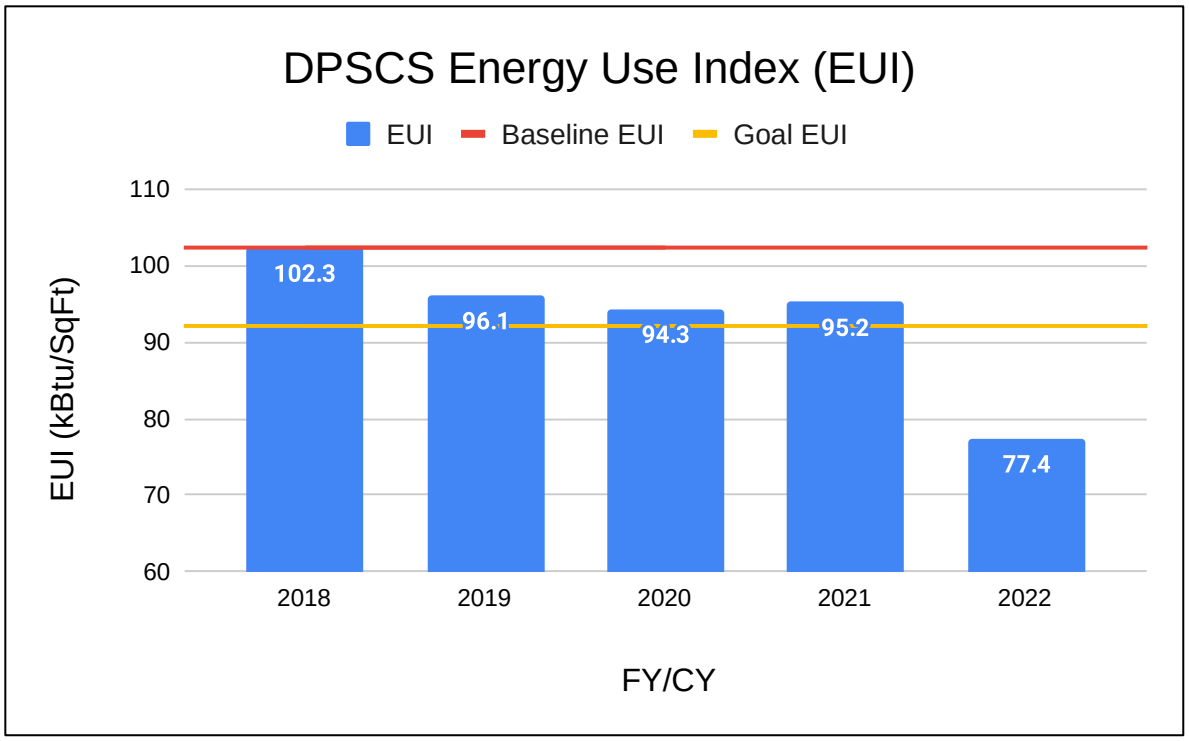
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	12,828,571*	1,312,002*		13.63%	102.3*
FY19	12,828,571*	1,232,286*	-6.1%*	13.07%	96.1*
FY20	12,828,571*	1,210,010*	-7.8%*	13.76%	94.3*
FY21	12,828,571	1,221,746	-6.9%	14.22%	95.2
CY22	12,828,571	993,156	-24.3%	11.80%	77.4

*Updated from FY18-19 Annual Report.

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	80.19%	12	$135,492
FY19	80.19%	9	$652
FY20	80.19%	88	$258,065
FY21	80.19%	67	$48,783
CY22	80.19%	33	$18,510

Change in Energy Use Index (EUI):



Agency report: No update.

III. University of Maryland Baltimore (UMB)

Agency Energy Usage Snapshot:

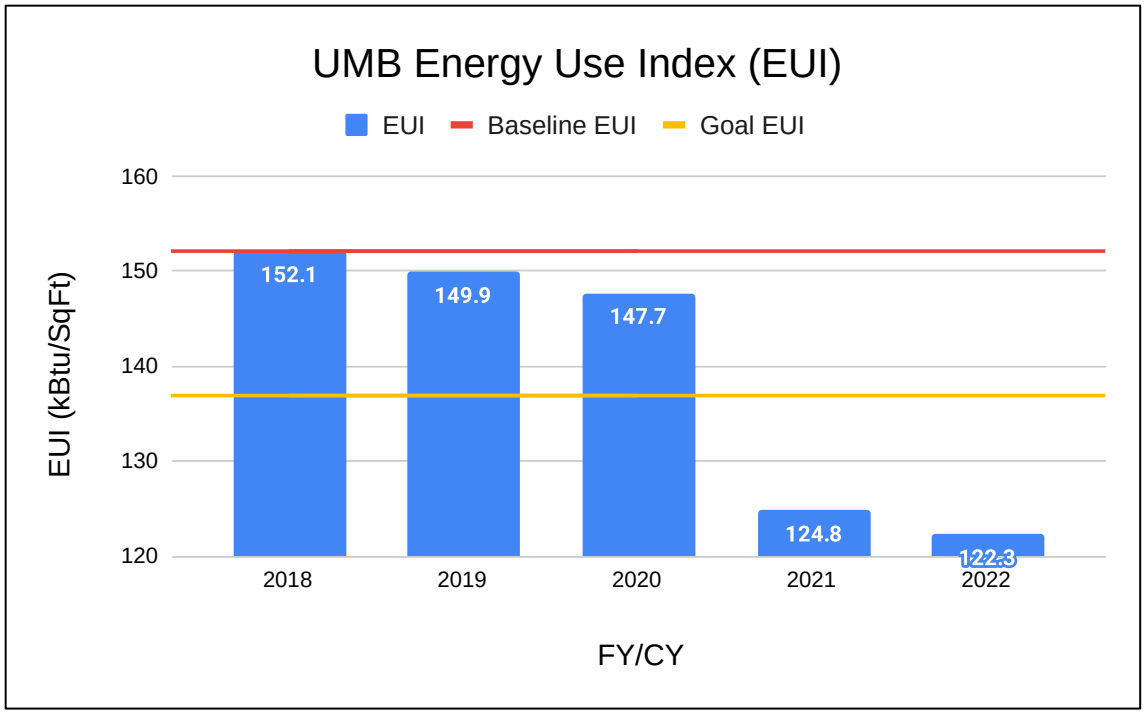
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	5,950,069	904,967		9.40%	152.1
FY19	5,950,069	891,677	-1.5%	9.45%	149.9
FY20	5,950,069	879,027	-2.9%	10.00%	147.7
FY21	5,950,069	741,666	-17.9%	8.63%	124.8
CY22	5,945,069	727,119	-19.6%	8.64%	122.3

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0
FY19	100%	0	$0
FY20	100%	6	$3,242
FY21	100%	3	$113

CY22	100%	0	$0

Change in Energy Use Index (EUI):



Agency Report: No update.

IV. University of Maryland Baltimore County (UMBC)

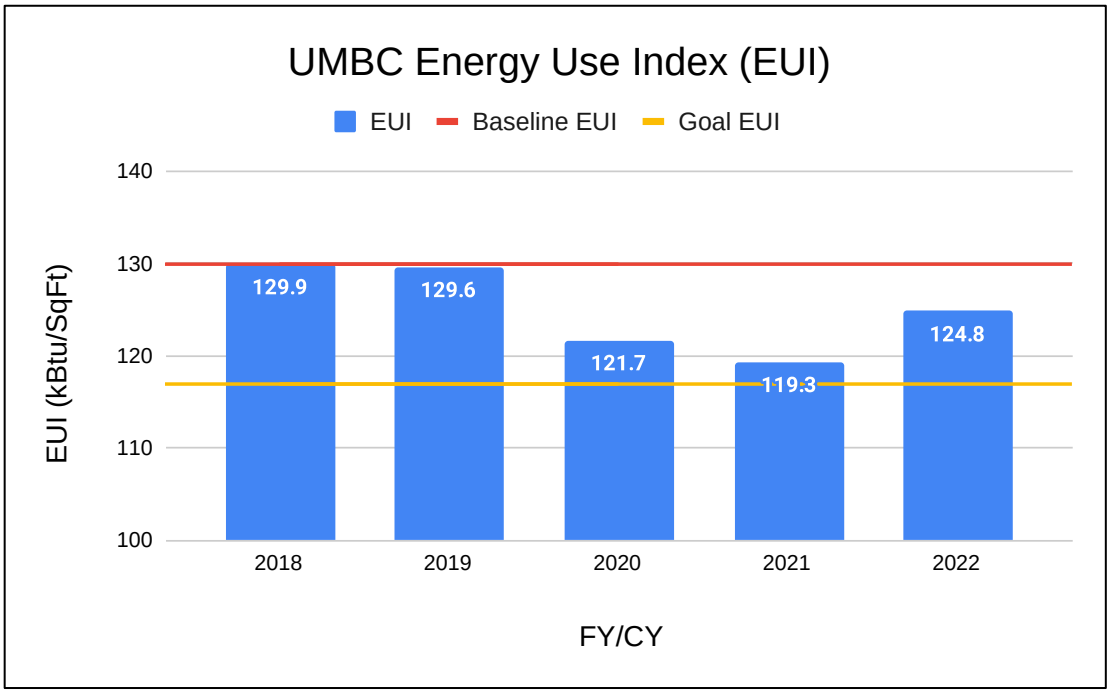
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBtu	EUI (kBtu/SqFt)
FY18 (baseline)	4,467,954	580,472		6.03%	129.9
FY19	4,467,954	579,017	-0.3%	6.14%	129.6
FY20	4,467,954	543,597	-6.3%	6.18%	121.7
FY21	4,467,954	533,055	-8.2%	6.20%	119.3
CY22	4,467,954	557,480	-3.9%	6.62%	124.8

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0.00
FY19	100%	0	$0.00
FY20	100%	0	$0.00
FY21	100%	0	$0.00
CY22	100%	0	$0.00

Change in Energy Use Index (EUI):



Agency report: No update.

V. Department of General Services

Agency Energy Usage Snapshot:

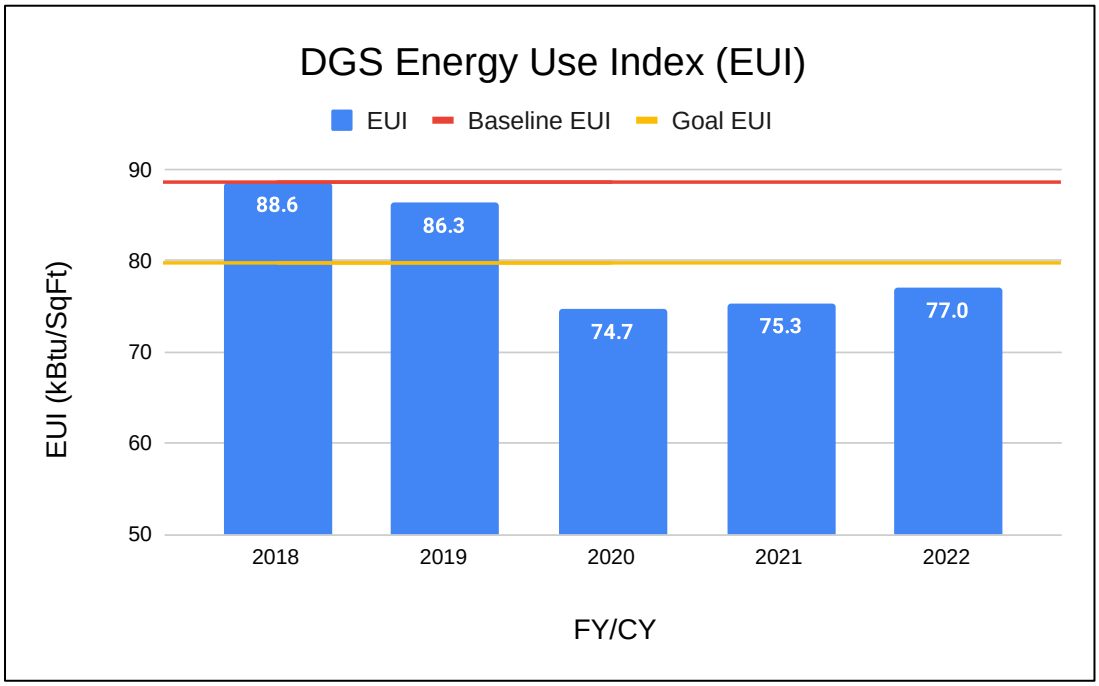
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	Change in usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	6,498,791	575,501		5.98%	88.6

FY19	6,498,791	560,793	-2.5%	5.95%	86.3
FY20	6,498,791	485,168	-15.7%	5.52%	74.7
FY21	6,498,791	489,171	-15.0%	5.69%	75.3
CY22	6,466,134	498,067	-13.1%	5.92%	77.0

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	7	$15,167
FY19	100%	16	$36,029
FY20	100%	0	$0
FY21	100%	12	$21,642
CY22	100%	0	$0

Change in Energy Use Index (EUI):



Agency report:

Please see the write-up on pages 10 through 18.

VI. Maryland Aviation Administration (MDOT-MAA)

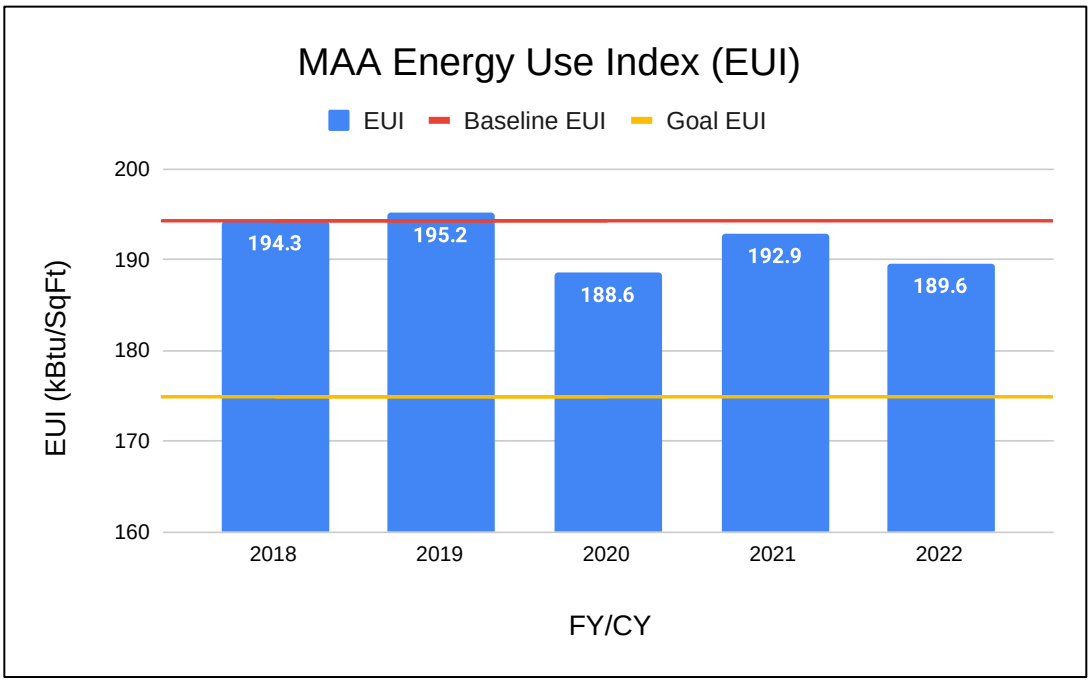
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	2,920,577	567,330		5.89%	194.3
FY19	2,920,577	570,231	+0.5%	6.05%	195.2
FY20	2,920,577	550,780	-2.9%	6.26%	188.6
FY21	2,920,577	561,828	-0.7%	6.54%	192.9
CY22	2,912,077	552,165	-2.4%	6.56%	189.6

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0
FY19	100%	28	$19,582
FY20	100%	6	$8,759
FY21	100%	46	$10,821
CY22	100%	30	$14,720

Change in Energy Use Index (EUI):



Agency report:

Maryland Aviation Administration owns and operates both Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) and Martin State Airport. Current and historical energy efficiency initiatives undertaken by MAA include a 505 kW rooftop solar array on the Daily Garage and various energy efficiency improvements which have resulted in a 35% decrease in energy per passenger served over the last decade.
This past year, MAA secured the purchase of 15,000 MW hours of renewable electric power for FY 24 and FY 25. Working closely with Maryland Department of General Services and Washington Gas, this purchase was arranged under existing contracts and budgets and is exclusive to BWI Marshall. Previously, BWI Marshall's energy portfolio included 20% renewable energy purchased from wind and solar projects. With the above purchase this number increases to 40%.
Looking forward to FY24, MAA will begin a decarbonization audit and plan for both BWI Marshall and Martin State Airports. This plan will include a greenhouse gas (GHG) emissions inventory, a decarbonization strategy, and conceptual designs for projects to reduce GHG emissions at both airports. These efforts are made possible by the Federal Aviation Administration's (FAA) Airports Climate Challenge grant that awarded MAA $1.2 million and Maryland Energy Administration's Resilient Maryland grant that awarded MAA $100 thousand for a microgrid feasibility study.
Additionally, BWI Marshall received $15 million for the Taxiway F Relocation Phase 2 project. This project includes several strategies to promote sustainable development including light-colored concrete that will not contribute to the urban heat island effect and new LED lights and signage that will decrease energy consumption up to 40% over existing systems.
Examples of energy efficiency enhancements that occurred during FY23 and that are ongoing:
1. BWI Concourse DX-DY HVAC Improvements - This ±$20 million project will replace four outdated rooftop units with three new chilled water and hot water units and install updated and integrated system controls to optimize efficiency.

2. BWI Restroom Renovations - The new restrooms include state-of the-art technology including energy efficient LED lighting and efficient water fixtures that will yield a 20% average consumption savings per passenger using the restroom.

3. BWI A/B Connector and Baggage Handling System Improvements- Currently in construction, this project is projected to achieve a 24% energy cost saving through improved lighting, chiller replacement, hot water heating, building design, and control systems.

VII. Towson University

Agency Energy Usage Snapshot:

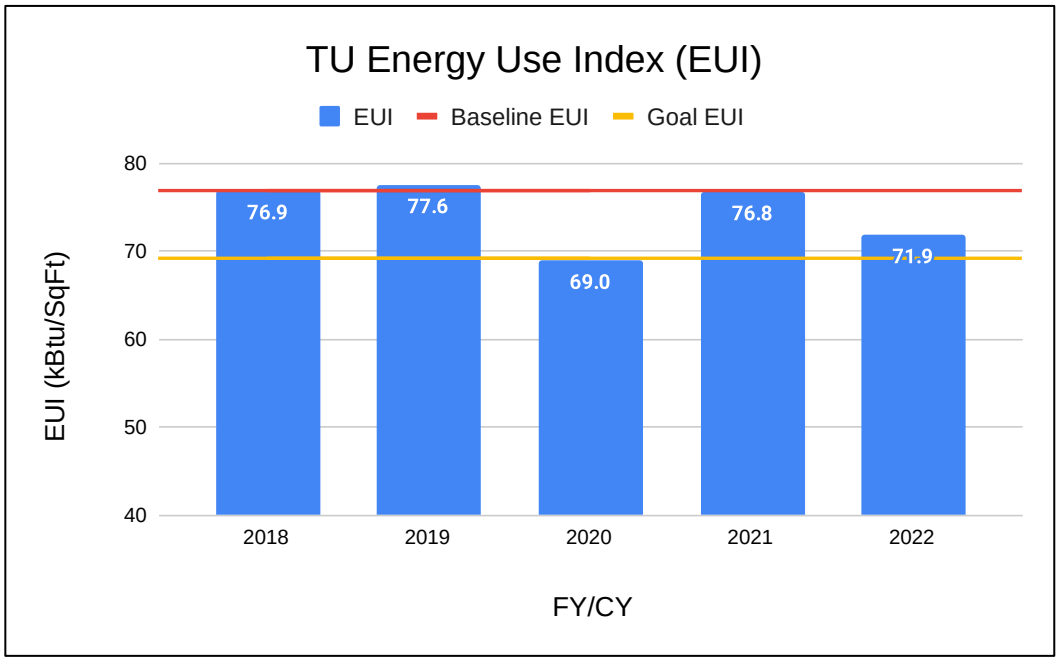
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)

FY18 (baseline)	6,036,906	463,915		4.82%	76.9
FY19	6,036,906	468,144	+0.9%	4.96%	77.6
FY20	6,036,906	416,416	-10.3%	4.74%	69.0
FY21	6,036,906	463,515	-0.1%	5.39%	76.8
CY22	6,124,353	440,163	-6.5%	5.23%	71.9

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0
FY19	100%	0	$0
FY20	100%	0	$0
FY21	100%	0	$0
CY22	100%	0	$0

Change in Energy Use Index (EUI):



Agency report: No update.

VIII. Maryland Dept of Health (MDH)

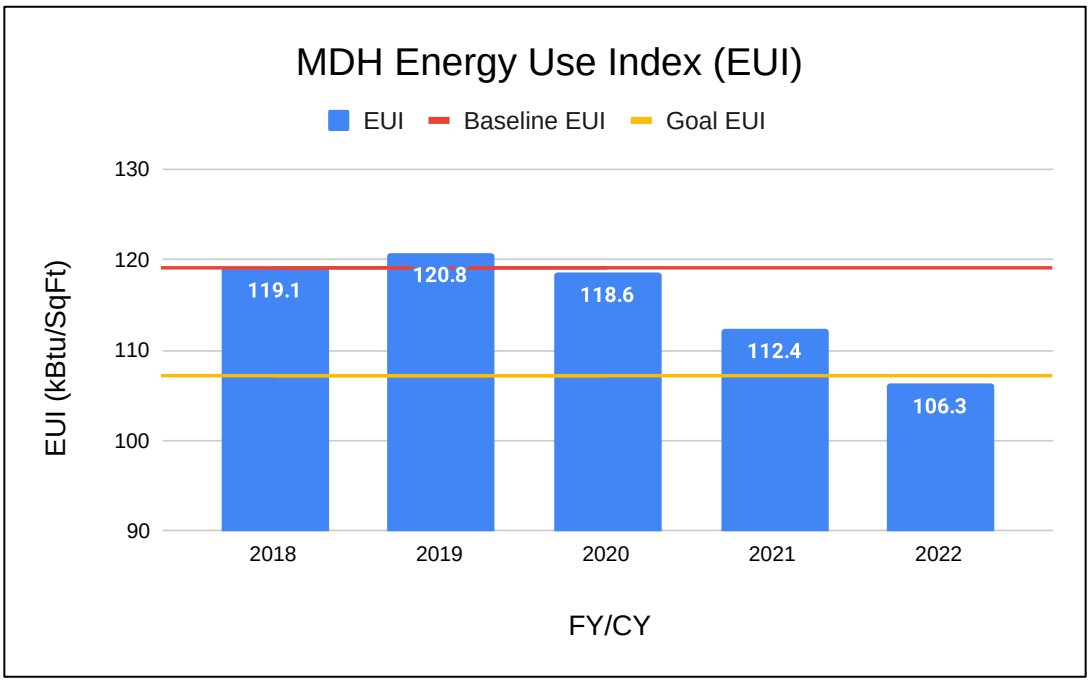
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	3,208,181	382,122		3.97%	119.1
FY19	3,208,181	387,688	+1.5%	4.11%	120.8
FY20	3,208,181	380,601	-0.4%	4.33%	118.6
FY21	3,208,181	360,713	-5.6%	4.20%	112.4
CY22	3,208,101	340,917	-10.8%	4.05%	106.3

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	2	$7,100
FY19	100%	31	$28,309
FY20	100%	0	$0.00
FY21	100%	13	$74,995
CY22	100%	4	$13,517

Change in Energy Use Index (EUI):



Agency report: No update.

IX. Morgan State University (MSU)

Agency Energy Usage Snapshot:

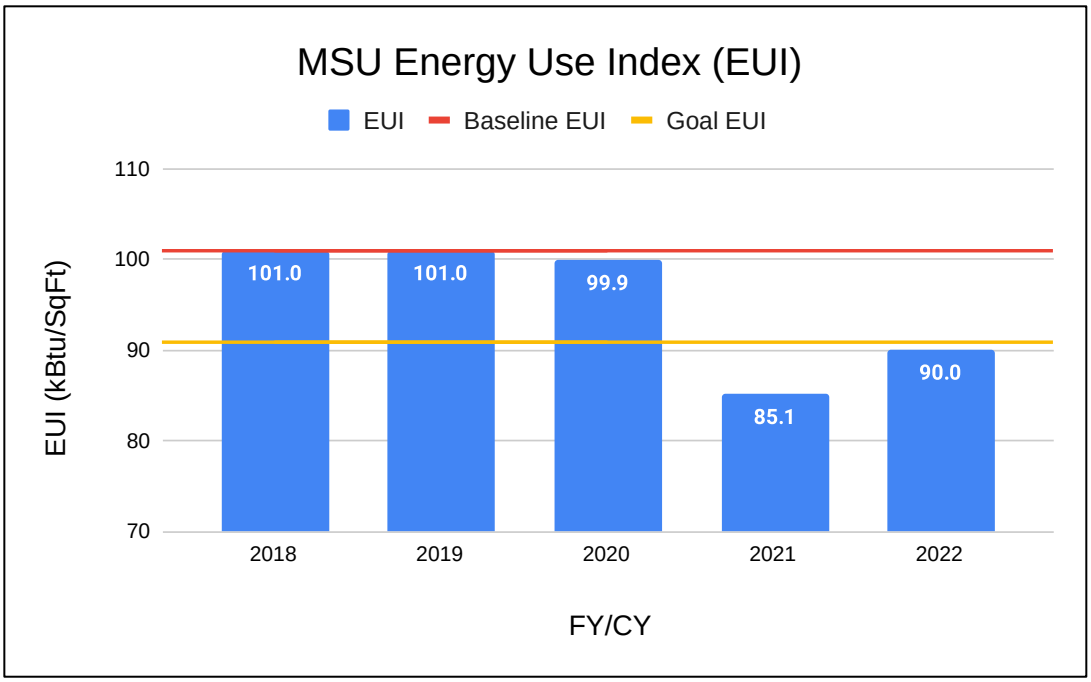
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	3,396,043*	342,866		3.56%	101.0*
FY19	3,396,043*	342,913	+0.01%*	3.64%	101.0*
FY20	3,396,043	339,205	-1.1%	3.86%	99.9
FY21	3,396,043	288,972	-15.7%	3.36%	85.1
CY22	3,346,788	301,267	-10.8%	3.58%	90.0

* Updated from FY18-19 Annual Report

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0.00
FY19	100%	0	$0.00
FY20	100%	0	$0.00
FY21	100%	45	$410,580
CY22	100%	7	$23,755

Change in Energy Use Index (EUI):



Agency report: No update.

X. Maryland Transit Administration (MDOT-MTA)

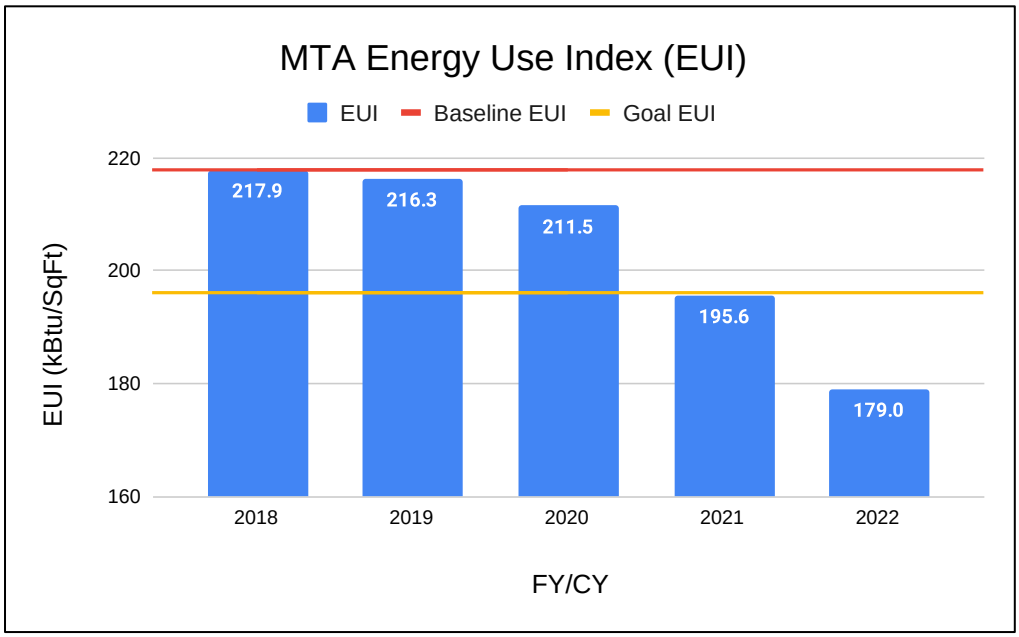
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,562,344	340,403		3.54%	217.9
FY19	1,562,344	337,921	-0.7%	3.58%	216.3
FY20	1,562,344	330,463	-2.9%	3.76%	211.5
FY21	1,562,344	305,642	-10.2%	3.56%	195.6
CY22	1,562,344	279,622	-17.9%	3.32%	179.0

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	16	$86,663
FY19	100%	4	$18,927
FY20	100%	7	$26,551
FY21	100%	12	$46,029
CY22	100%	16	$86,308

Change in Energy Use Index (EUI):



Agency report: No update.

XI. Frostburg State University (FSU)

Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,541,581*	207,429		2.15%	134.6*
FY19	1,541,581*	213,733*	+3.0%*	2.27%	138.6*
FY20	1,541,581*	198,559*	-4.3%*	2.26%	128.8*
FY21	1,538,831	193,619	-6.5%*	2.25%	125.8
CY22	1,538,831	202,404	-2.3%	2.40%	131.5

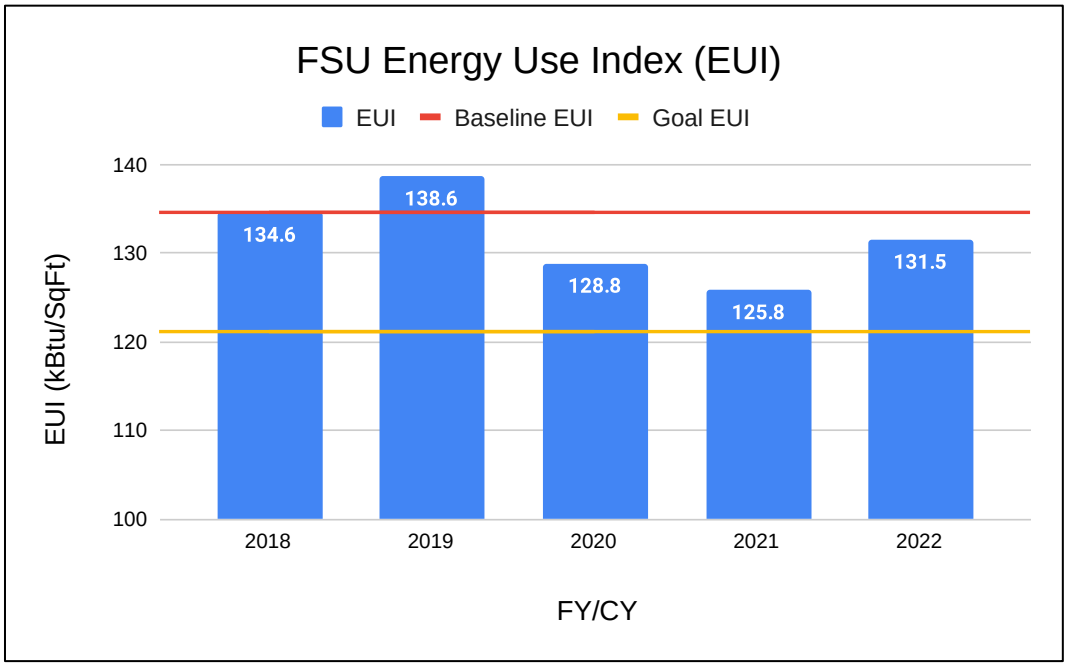
* Updated from FY18-19 Annual Report

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	59	$5,065
FY19	100%	14	$9,225

FY20	100%	65	$82,932
FY21	100%	36	$19,166
CY22	100%	36	$64,864

Change in Energy Use Index (EUI):



Agency report: No update.

XII. Salisbury University

Agency Energy Usage Snapshot:

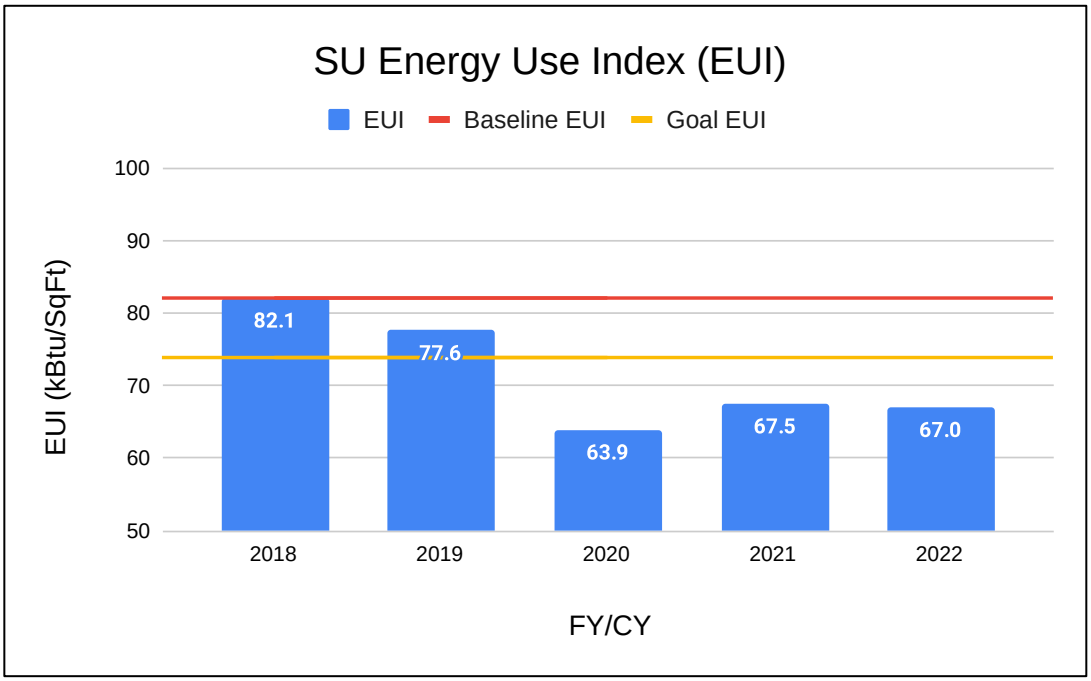
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	2,217,621	182,154		1.89%	82.1
FY19	2,217,621	172,156	-5.5%	1.83%	77.6
FY20	2,217,621	141,792	-22.1%	1.61%	63.9
FY21	2,217,621	149,700	-17.8%	1.74%	67.5
CY22	2,217,621	148,520	-18.4%	1.76%	67.0

Missing bill and data report:

DATA COMPLIANCE

	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	6	$1,314
FY19	100%	10	$1,978
FY20	100%	0	$0
FY21	100%	0	$0
CY22	100%	0	$0

Change in Energy Use Index (EUI):



Agency report: No update.

XIII. Maryland Stadium Authority

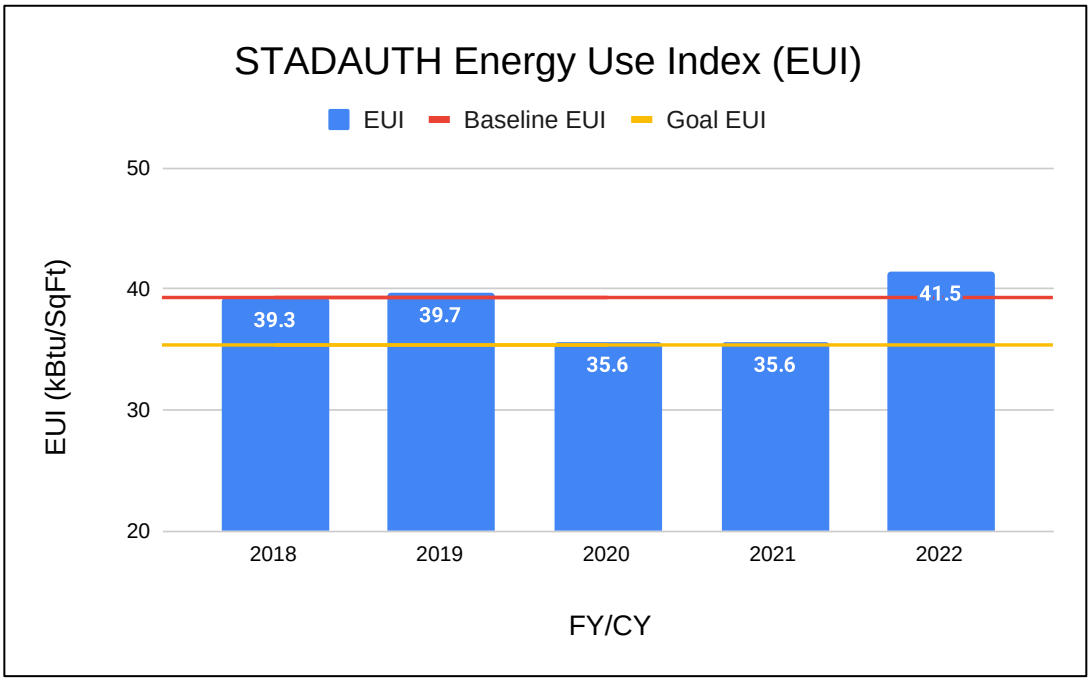
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	4,274,000	168,040		1.75%	39.3
FY19	4,274,000	169,545	+0.9%	1.80%	39.7
FY20	4,274,000	152,337	-9.3%	1.73%	35.6
FY21	4,274,000	152,242	-9.4%	1.77%	35.6
CY22	4,274,000	177,219	+5.5%	2.11%	41.5

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0
FY19	100%	0	$0
FY20	100%	0	$0
FY21	100%	0	$0
CY22	100%	0	$0

Change in Energy Use Index (EUI):



Agency report: No update.

XIV. University of Maryland Eastern Shore (UMES)

Agency Energy Usage Snapshot:

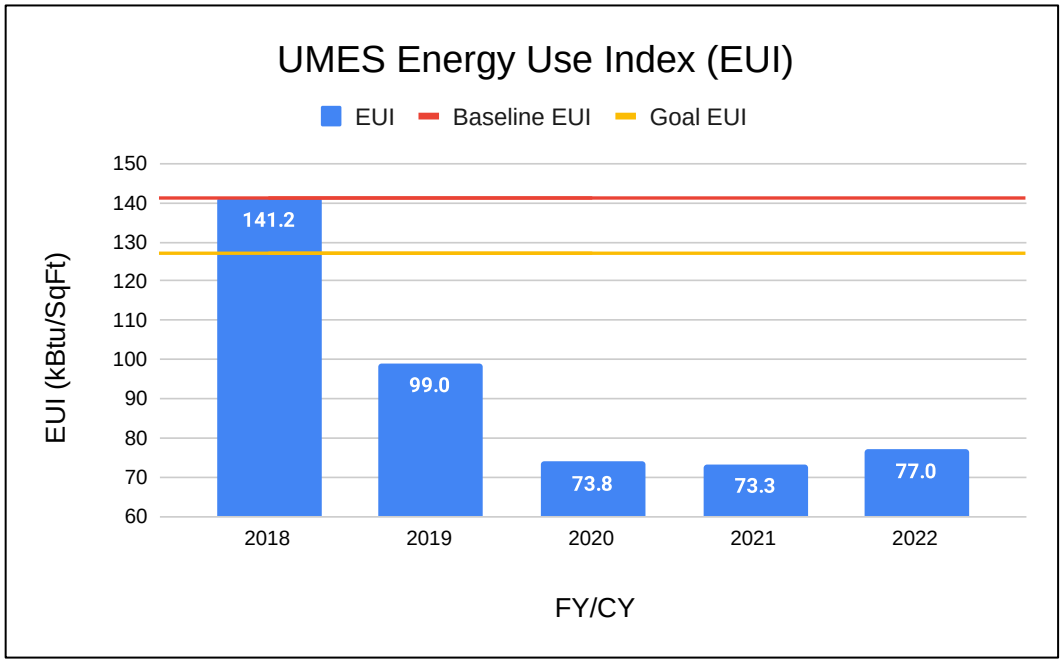
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,093,365	154,368		1.60%	141.2
FY19	1,093,365	108,220	-29.9%	1.15%	99.0

FY20	1,092,704	80,688	-47.7%	0.92%	73.8
FY21	1,092,704	80,098	-48.1%	0.93%	73.3
CY22	1,092,704	84,119	-45.5%	1.00%	77.0

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	94%	2	$422
FY19	94%	4	$130
FY20	97%	1	$9
FY21	97%	25	$46,874
CY22	97%	0	$0

Change in Energy Use Index (EUI):



Agency report:

This report captures the energy savings measures embarked upon in the Fiscal Year 2022-2023. UMES over the years has always striven to increase the campus energy efficiency by upgrading old equipment to more energy efficient and applying energy saving practices to reduce energy usage/efficiently use energy.

Efforts on campus to meet the energy savings targets continue to yield very positive results. It should be noted that UMES student enrollment has been down, and as a result the University

opted to adjust usage building schedules and also encouraged the consolidating of multiple activities into fewer buildings.

The following is a brief summary of UMES-related energy savings projects that have been successfully completed to date. Additional details are provided where needed.

1. Conversion of all fuel oil to natural gas.
In an effort to move away from traditional fuel sources (#6 and #2 fuel) in favor of a less energy-intensive natural gas fuel source, UMES completed the first phase of its natural gas conversion project. This allows the steam plant, which serves the main campus, to efficiently run on cleaner and more energy-efficient natural gas as opposed to #6 and #2 fuel.
The natural gas conversion project was divided into two phases: (1) The Natural Gas Distribution Pipeline; and (2) the conversion of mechanical equipment (boilers and water heaters) to accommodate the new natural gas fuel source (see next point for more details).
This two-in-one project was originally targeted for completion in August 2021, however due to unavoidable delays resulting from the COVID-19 pandemic, market escalations and delays in major equipment, only Phase 1 of the project has been completed at the beginning of 2022. The second phase of the project was started but has been impacted due to unprecedented market-price escalation. A few adjustments were made to put some of the base scope part of the project to add alternate. Collectively, this two-phase project will help reduce institutional CO2 emissions by approximately 55%.

2. Conversion of mechanical boilers and domestic hot water to accommodate the transition to natural gas.
As discussed in the previous point, the boiler and hot water conversion project works is designed to dovetail with a campus-wide natural gas conversion. The mechanical conversion includes the retrofit and upgrade of the steam plant's boilers to energy-efficient boilers. All standalone boilers in buildings that do not derive their heating source from the steam plant are being retrofitted or replaced where necessary to energy-efficient boilers. This project has been the focus of UMES in prior fiscal years and continues to be a top priority. As noted in response to Question 1, this phase is on hold due to funding limitations related to sharp rises in energy costs. However, when either additional funding is allocated, or energy prices return to pre-pandemic levels, UMES will assign all available staffing to ensure that the system is ready and operational as quickly as possible.

3. Upgrading of the 2.2MW solar farm panels
a. UMES partners recently upgraded about 32% of its solar panel arrays. Some of the old panels which were not functioning in the past two (2) years were upgraded. This resulted in an increased amount of solar power UMES derives from the farm.
4. Completed the installation of four (4) new 200-ton chillers in four (4) campus buildings, helping to improve energy efficiency in those structures.

5. The new Building Automation Systems (JCI Metasys) Front-End was effectively put to use. Due to low student enrollment, building schedules were adjusted based on building demands. Also, as part of the chillers replacement noted in #4 above, some Back-End controllers were

upgraded with each chiller replaced in each of the buildings. This helped to more efficiently and effectively manage building efficiency across the improved areas.

6. Retrofitting of all campus parking lights to LEDs. This project has resulted in significant energy cost savings for the campus.
a. UMES was originally projected to have all exterior lighting retrofitted to LED by the end of Fiscal Year 2022. This includes lighting of parking lots, roadways, pathways, pedestrian walkways, and exterior building lights. Despite our target timeline for completion, the pandemic slowed down this process. Yet a considerable amount of the exterior lighting has been retrofitted to LEDs thus far. Specifically, all UMES roadway lighting has been fully retrofitted to LEDs, and the parking lots have also been retrofitted. The areas that still await conversion are the wall-pack exteriors of campus buildings. Additionally, some of the parking lights are on a controlled operational schedule, as opposed to relying on photo-sensor activation used in other LED lighting.

7. Replacement of residential packaged terminal air conditioner (PTAC) units with improved and energy efficient heat pumps. This replacement project is estimated to save about $60,000 in labor and energy consumption over the next two years.

8. Tapped into Empower Maryland incentives program which helped with the tune-up of all the UMES residential apartments. The program has saved the UMES approximately $120,000.
Additional Energy Savings Measures Achieved
UMES capitalized on the use of the two (2) major geothermal buildings for student classes. The effective use of the newly upgraded controls helped to save energy consumption in these buildings. Moreover, the newly upgraded Building Automation Systems were utilized to provide remote access to HVAC systems across campus.
In addition to the aforementioned projects, UMES has embraced a number of key energy curtailment strategies that are reducing overall campus energy usage, including but not limited to:
• Adjusting scheduling of custodial working hours in order to extend unoccupied hours in all buildings.
• Installation of lighting control sensors which include daylight harvesting in 90% of all buildings.
• Gradually replacing all CFL bulbs with LEDs across campus (this is in addition to the campus parking light conversion project mentioned in the previous section).
• Participation in the PJM Demand Response program.
• Lowered heating settings on thermostats from 72F to 69F in order to achieve 3% savings on heating.
• Increased the summertime setting of un-occupied spaces from the occupied set-point of 74F to 80F.
• Utilized heating and cooling setbacks two (2) hours before the end of the day. Setback temperatures are now 80 degrees in the summer and 65 degrees in the winter.
As a final note, the University of Maryland Easter Shore realized significant additional energy savings through the replacement of non-functional solar panels in 2022. Doing so greatly eased the University's electric peak demand load at critical intervals. However, please note that the EUI report to Bithgroup appears not to have accounted for other fuels sources used in buildings

that have not yet been converted to natural gas heating. Therefore an adjustment in energy reporting is recommended. I will be sending the invoices this week in order to revisit this energy calculation and make necessary adjustments

XV. Bowie State University (BSU)

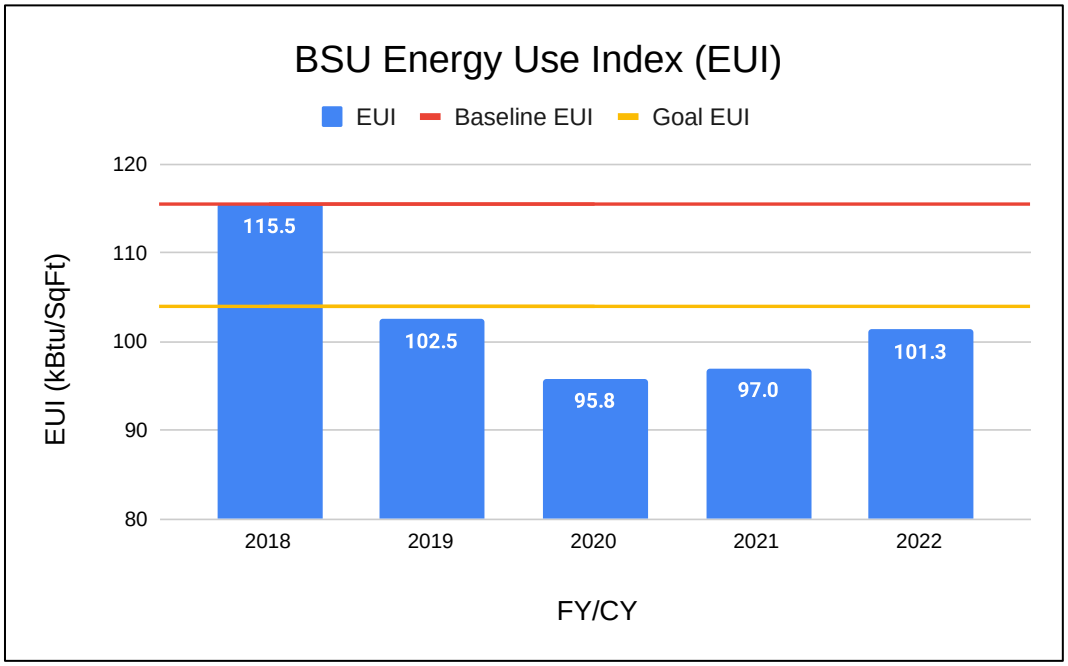
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,332,563	153,917		1.60%	115.5
FY19	1,332,563	136,643	-11.2%	1.45%	102.5
FY20	1,332,563	127,641	-17.1%	1.45%	95.8
FY21	1,332,563	129,272	-16.0%	1.50%	97.0
CY22	1,332,563	135,011	-12.3%	1.60%	101.3

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	9	$12,082
FY19	100%	0	$0
FY20	100%	0	$0
FY21	100%	6	$9,678
CY22	100%	49	$71,449

Change in Energy Use Index (EUI):



Agency report: No update.

XVI. State Highway Administration (MDOT-SHA)

Agency Energy Usage Snapshot:

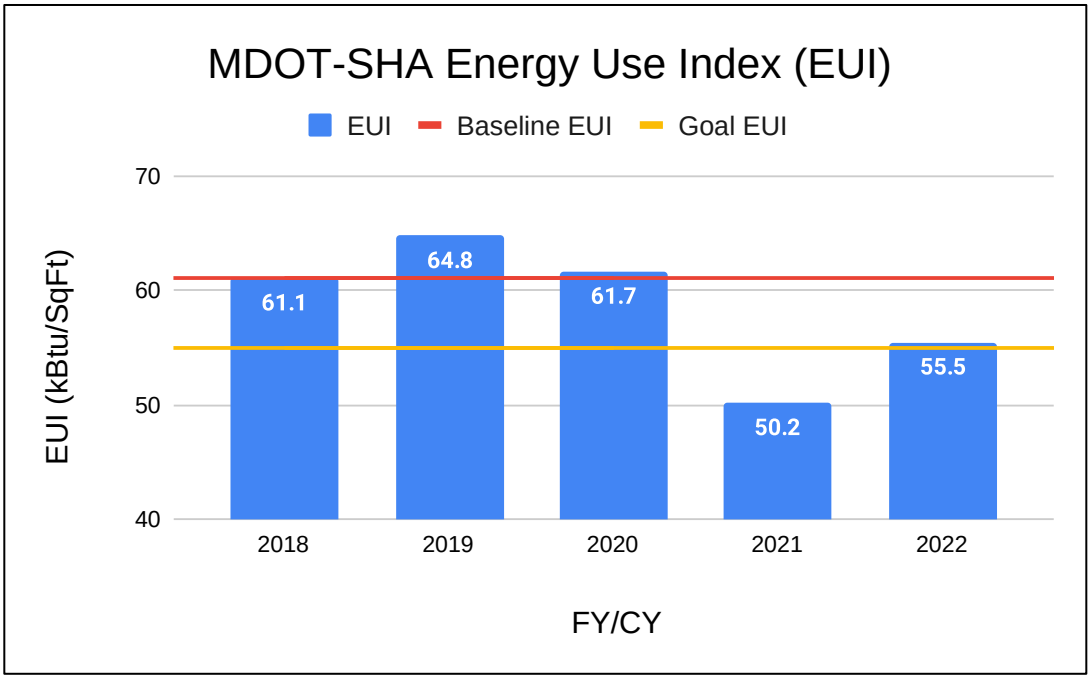
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	2,276,739	139,194		1.45%	61.1
FY19	2,276,739	147,567	+6.0%	1.56%	64.8
FY20	2,276,739	140,434	+1.0%	1.60%	61.7
FY21	2,276,739	114,378	-17.8%	1.33%	50.2
CY22	2,090,846	116,059	-9.2%	1.38%	55.5

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	103	$75,155
FY19	100%	97	$73,090
FY20	100%	145	$69,613

FY21	100%	158	$97,078
CY22	100%	120	$43,754

Change in Energy Use Index (EUI):



Agency report:

State Highway Administration (MDOT SHA) Energy Report, FY23
SHA remains committed to Maryland's energy reduction goals and continues the administration of an energy performance contract executed in 2011. That contract was successful in realizing statewide energy savings for SHA as outlined in previous reports. We are excited to pursue additional improvements and opportunities to further reduce energy use and increase resiliency by reducing reliance on fossil fuels.

FACILITIES
Historically, SHA's facilities have accounted for less than 45% of our total energy use, and HVAC systems average 40% of all building energy use. Beyond the HVAC system itself, significant energy savings can be attained by focusing on related efforts that would reduce the amount of energy needed to heat and cool a building. SHA looks at all capital projects through the lens of energy reduction during the planning and design phases, particularly HVAC, building envelope, and lighting.

CURRENT AND UPCOMING FACILITY CAPITAL PROJECTS WITH ENERGY REDUCTION
Like all other state agencies, inconsistent funding due to unexpected budget constraints has reduced our capacity to move forward planned projects in recent years. SHA has two projects underway that will result in significantly reduce energy consumption (for those facilities), including fossil fuels: Churchville Maintenance Facility HVAC and Roof Replacement, and

District 3 Office Roof Replacement. The Churchville project will reduce energy usage through improved roof insulation (R19 to R30), preventing both heating and cooling loss. The HVAC portion of the project will also realize energy savings through use of a Variable Refrigerant Flow (VRF) system, known for its energy efficiency and energy recovery, as well as improved efficiency on new Heating and Ventilating units with energy recovery for the shop areas. Fossil fuel will still be required for the shop units (100% outside air), but with the improved roof insulation and more efficient equipment, the overall usage will decline. The roof replacement at the District 3 Office will also improve the insulation from R19 to R30. Both projects will be completed in FY24, with savings realized in FY25. There is an upcoming renovation project to be advertised in FY24 for the HVAC replacement at the Glen Burnie Maintenance Facility. The replacement will be another VRF system, and the office lighting will also be replaced with LED fixtures as part of the project. Projects like these will continue to swing the needle and decrease the SHA's energy usage.

SMALL SCALE FACILITY IMPROVEMENTS CONTRIBUTE TO ENERGY REDUCTION

As funding can be difficult for large and medium scale projects like the above, SHA works to improve our aging facilities infrastructure with smaller projects and on-going maintenance efforts that also contribute to energy savings. SHA has previously identified retro-commissioning as a way to reduce HVAC energy usage and also extend the life of the equipment. We now have contracts in place to allow for broader re and retro commissioning efforts, intended to target facilities with HVAC systems between 40-70% through their expected service life. We also look for direct equipment replacements, where possible, as newer equipment is more efficient, and smaller improvements such as adding economizers (to use free cooling in lieu of mechanical cooling) will provide additional energy reductions. Our facilities divisions have also identified roof coatings as another maintenance project that adds a reflective coating to the roof and reduces cooling needs, while extending the life of the roof. These efforts will not have as large of an effect, but will be easier to plan and fund, and will help reduce SHA's overall energy use.

SIGNAL AND HIGHWAY LIGHTING

In addition to efforts described above, work continues to convert all traffic signals to LED. This effort has been held up at approximately 95% completion due to the lack of funding. And although there is currently some movement, this endeavor is progressing slower than anticipated as funding issues continue to be the biggest challenge. Savings for this portion of the effort are difficult to calculate as changes to signal quantities have not been tracked. Signal quantities generally have increased with safety improvements such as additional signaled turn lanes and additional intersections being signalized. A basic intersection of 8 signal heads with incandescent bulbs would have theoretically used 25.92 kwh/day, and if these 8 signal heads were converted to LED they would theoretically use 8.06 kwh/day. Of course, any actual usage and savings varies greatly from intersection to intersection.

All new signals and highway/roadway lighting are constructed with LED lighting. SHA is currently converting all existing highway lighting to LED; as they are replaced due to accident or adjacent roadways undergoing major construction. Some of this lighting may be unmetered and savings will need to be addressed on a case by case basis. This is the largest untapped pool of savings and will result in the biggest impact to further use reduction.

XVII. Maryland Port Administration (MDOT-MPA)

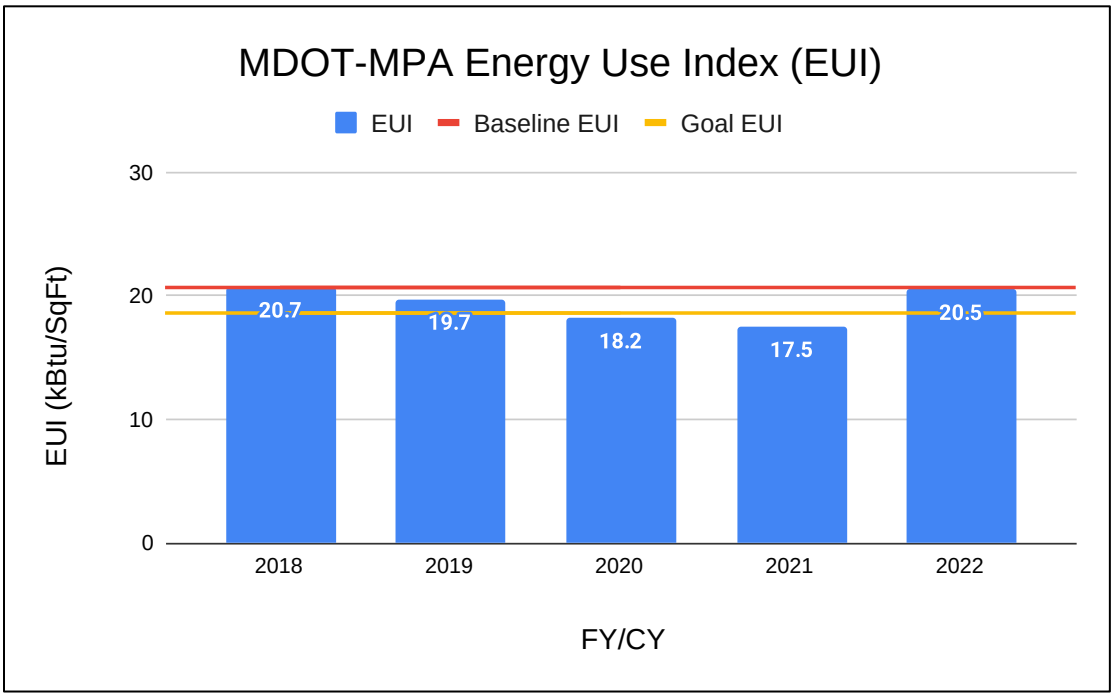
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	6,513,833	134,714		1.40%	20.7
FY19	6,513,833	128,266	-4.8%	1.36%	19.7
FY20	6,131,389	111,882	-12.1%	1.27%	18.2
FY21	6,131,389	107,317	-15.5%	1.25%	17.5
CY22	6,129,318	125,666	-1.0%	1.49%	20.5

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	57%	0	$0
FY19	57%	15	$15,324
FY20	93%	0	$0
FY21	93%	6	$1,238
CY22	93%	9	$1,823

Change in Energy Use Index (EUI):



Note that due to a lack of complete data, the above numbers reflect the entire agency's energy usage and square footage, which may include leased facilities and non-building energy usage.

Agency report: No update.

XVIII. Coppin State University (CSU)

Agency Energy Usage Snapshot:

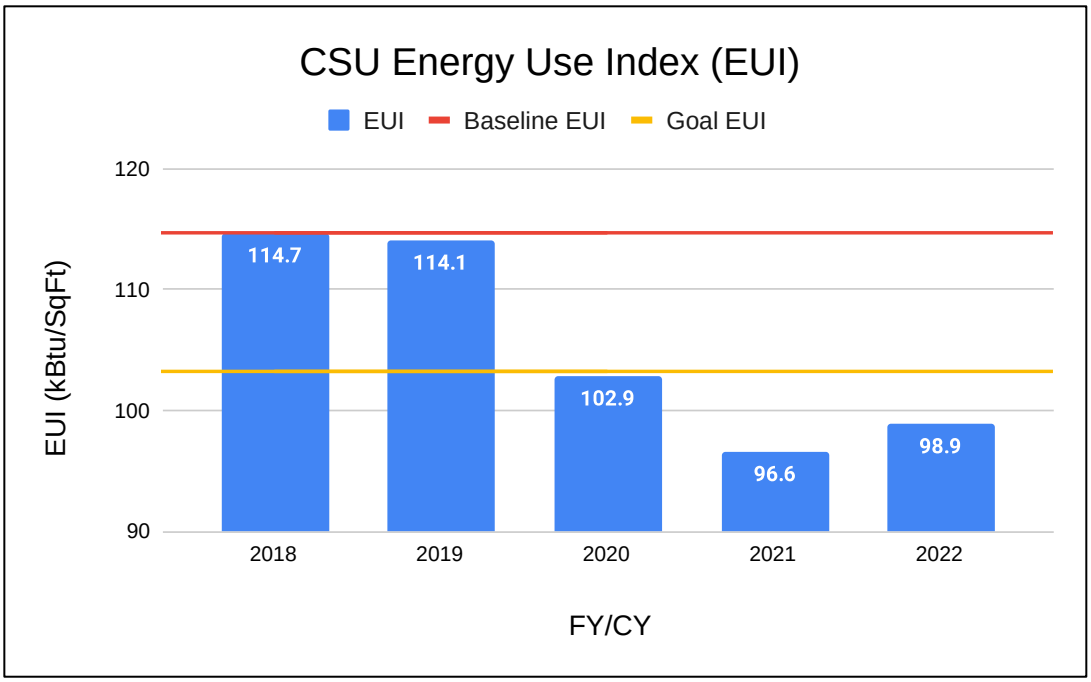
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,096,489	125,809		1.31%	114.7
FY19	1,096,489	125,123	-0.5%	1.33%	114.1
FY20	1,096,489	112,784	-10.3%	1.28%	102.9
FY21	1,096,489	105,927	-15.8%	1.23%	96.6
CY22	1,096,489	108,409	-13.8%	1.29%	98.9

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	0	$0

FY19	100%	0	$0
FY20	100%	1	$23,465
FY21	100%	0	$0
CY22	100%	4	$30,381

Change in Energy Use Index (EUI):



Agency report: No update.

XIX. Maryland Transportation Authority (MDOT-MDTA)

Agency Energy Usage Snapshot:

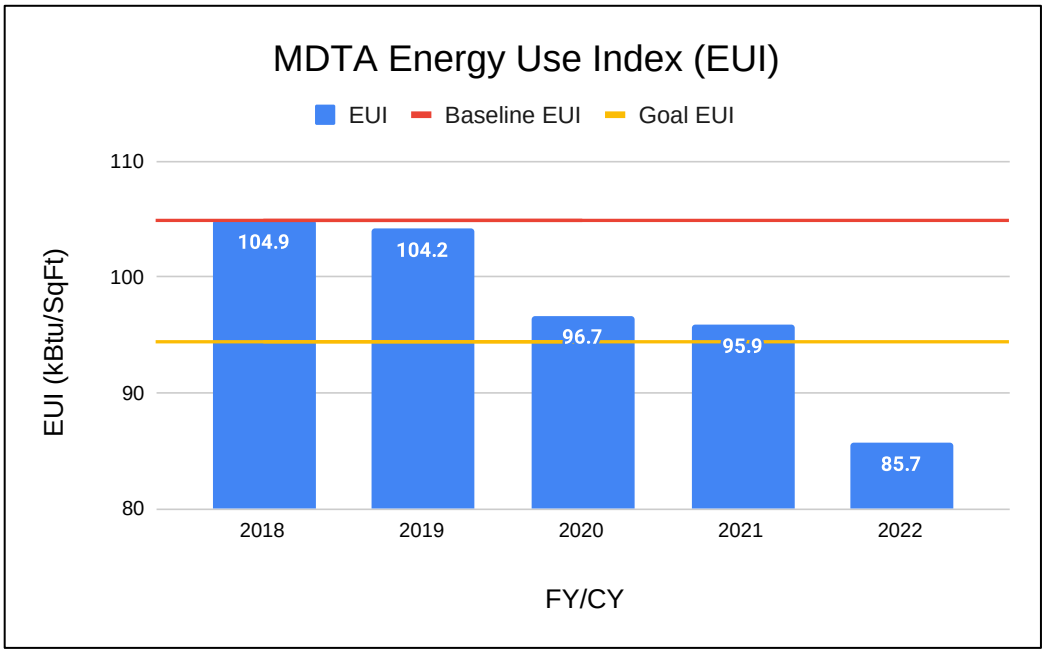
ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,082,817	113,602		1.18%	104.9
FY19	1,082,817	112,840	-0.7%	1.20%	104.2
FY20	1,079,790	104,379	-7.8%	1.19%	96.7
FY21	1,079,790	103,602	-8.6%	1.21%	95.9
CY22	1,079,790	92,487	-18.3%	1.10%	85.7

Missing bill and data report:

DATA COMPLIANCE

	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	20	$4,127
FY19	100%	20	$12,646
FY20	100%	28	$13,173
FY21	100%	43	$6,336
CY22	100%	5	$9,689

Change in Energy Use Index (EUI):



Agency report: No update.

XX. Military Department

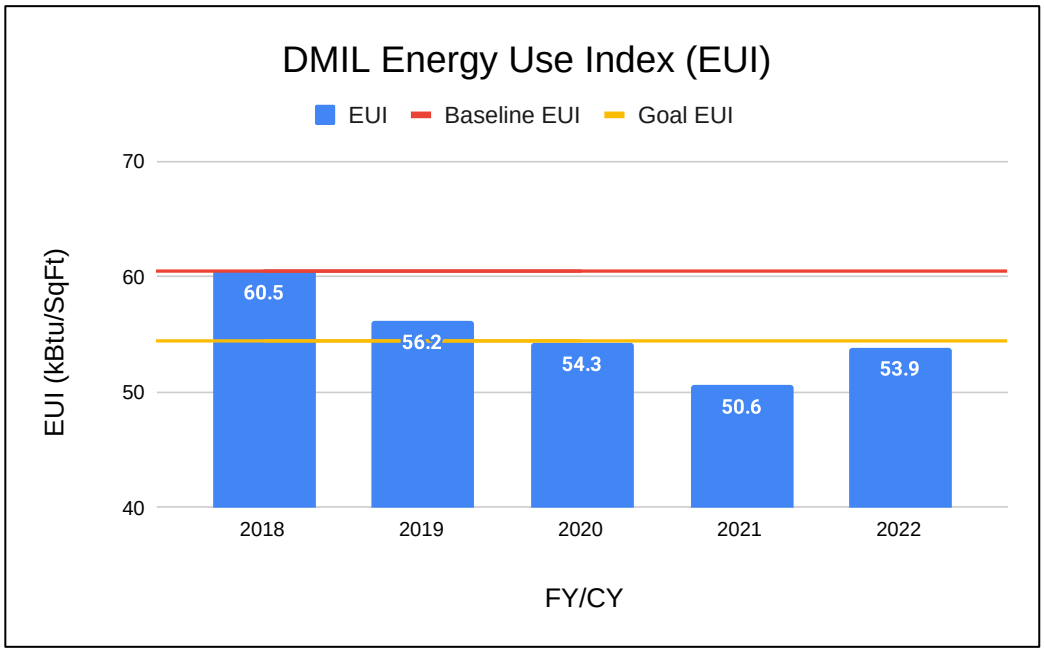
Agency Energy Usage Snapshot:

ENERGY USAGE					
	Square Feet of Buildings	MMBTU	% Change in Energy Usage	% of State Total MMBTU	EUI (kBtu/SqFt)
FY18 (baseline)	1,607,302	97,215		1.01%	60.5
FY19	1,607,302	90,388	-7.0%	0.96%	56.2
FY20	1,607,302	87,284	-10.2%	0.99%	54.3
FY21	1,494,136	75,654	-16.4%	0.88%	50.6
CY22	1,457,487	78,512	-11.0%	0.93%	53.9

Missing bill and data report:

DATA COMPLIANCE			
	% Floor Area Reported to DGS	Number of Missing Bills	Est $ Value of Missing Bills
FY18	100%	10	$9,872
FY19	100%	6	$2,956
FY20	100%	0	$0
FY21	100%	41	$9,283
CY22	100%	19	$16,782

Change in Energy Use Index (EUI):



Agency report:

MMD had over an 11% reduction in electricity in FY23 as compared to FY22. Most of this success can be contributed to the completion of LED upgrades at nine- (9) of our sites. The total building area affected was almost 300,000 square feet. All the work was performed using EmPowerMD funds and incentives across most of our utility suppliers. The scope for each site was the replacement of existing interior and exterior fixtures with LED fixtures. Additionally, the period of performance only covered six- (6) months of the year; we're hoping to see more of this electric reduction in FY24 with a full year of the LED's electric avoidance. Lastly, our newest site, Singh Readiness Center in Sykesville, has now been operational for a full Fiscal Year. Thus, our overall efficiency has increased, as it replaces an older, less efficient building, like Catonsville Readiness Center. It was transferred to another owner along with its

aging equipment and infrastructure. Singh was constructed to LEED Silver standards with efficient equipment, LED lighting, sensors, and a tight building envelope.

APPENDICES

Appendix 1: Data Methodology

The Executive Order pertains to "State-owned buildings" and therefore a detailed scope of reporting is necessary to ensure that all required data points are included in our reporting. Because most of the State's buildings (nearly 80%) are on shared utility meters and do not have building-level submeters, it was necessary to establish a methodology for reporting on building-level data when we have it and at the broader campus of complex level if we do not. For the purposes of reporting, there are two distinct reporting groups that are outlined and defined further below: *Independently Metered Buildings*; and *Campuses*.

All data utilized in this report comes from the Statewide Utility Database, also known as the State Energy Database, a centralized resource of all State facilities and energy usage and cost that is maintained by the Department of General Services. The database tracks energy cost and consumption for all State agencies, including electricity, natural gas, fuel oil, steam, chilled water, water and sewer commodities. Over 1.8 Million State-paid utility invoices are included in the database.

SCOPE OF REPORTING

	Reporting Group	Reporting Level	Examples
	Independently Metered Buildings	Building level usage; Building level EUI	Courthouses Stand-alone office buildings Stand-alone warehouses
	Campuses	Campus-level usage; Campus-level EUI	University campuses Hospital campuses Office complexes

DEFINITIONS

Independently Metered Building: *A State-owned permanent built structure enclosed with exterior walls and a roof, that: (1) consumes energy, (2) has its own energy utility meter, and (3) does not share energy utility meters with any other building.*

Data per each Independently Metered Building:

Includes MMBTU for	• Building • Any attached parking lot or structure (only if on same utility meter as building) • Any attached outdoor lighting (only if on same utility meter as building)
Includes SQFT for	• Building GSF • Any attached structure (only if on same utility meter as building)

Campus: *A group of two or more State-owned buildings that consume energy and share at least one energy utility meter.*

Data per each Campus:

Includes MMBTU for	• Everything that consumes energy on that campus including: • Buildings • Outdoor lighting • Parking lots and structures
Includes SQFT for	• Buildings • Parking structures

Energy Utility Meters include: electric, natural gas, steam, chilled water, and fuel oil.

REPORTING METRICS

The primary reporting metric used in this report is **weather normalized EUI**, or Energy Use Intensity, which is energy usage per area in kBtu per square foot per year. All FY18 and FY19 total energy usage (reporting in MMBtu) is also weather normalized. The data is weather normalized to a baseline year of FY2018 using a common setpoint of 59°F.

With the exception of UMD, all energy used to power State buildings as reported in utility bills was converted to MMBtus from site-based energy. The large Combined Heat and Power (CHP) plant at the College Park campus made comparing their energy use against that of all other agencies a case of apples and oranges. Therefore, UMD and DGS agreed to report the electricity and steam produced by the plant as site-based energy, which facilitated a fair comparison between UMD's energy use, and the energy use of other units of State government.

EXCLUSIONS FROM EO REPORTING

Building data attributes such as area (in gross square feet) are reported by the agencies for inclusion in the database. Agencies that do not own buildings were excluded in this report.

The following energy consuming entities were excluded from the report:

- Traffic lights, streetlights, and other structures that do not meet the definitions of "Independently Metered Buildings" or "Campuses" established above

- Buildings that are not owned by the State as of FY2018
- Buildings that were demolished prior to FY2018
- New construction after FY2018

Appendix 2: Energy Usage for All State Agencies, FY18 & CY22

Summary energy usage by all agencies, ranked by baseline year usage (FY18).

Rank	Agency	FY18 Sqft	FY18 Usage (MMBtu)	FY18 EUI (kBtu / Sqft)	CY22 Usage (MMBtu)	CY22 EUI (kBtu / Sqft)	% Change in Energy Usage
1	University of Maryland College Park (UMCP)*	14,767,416	1,798,702	121.8	1,663,308	112.6	-7.5%
2	Public Safety & Correctional Srvcs, Dept of (DPSCS)	15,374,567	1,385,819	90.1	993,156	77.4	-24.3%
3	University of Maryland Baltimore (UMB)	5,950,069	904,967	152.1	727,119	122.3	-19.6%
4	University of Maryland Baltimore County (UMBC)	4,467,954	580,472	129.9	557,480	124.8	-3.9%
5	General Services, Dept of (DGS)	6,498,791	575,501	88.6	498,067	77.0	-13.1%
6	Maryland Aviation Administration (MDOT-MAA)	2,920,577	567,330	194.3	552,165	189.6	-2.4%
7	Towson University (TU)	6,036,906	463,915	76.9	440,163	71.9	-6.5%
8	Health, Maryland Dept of (MDH)	3,208,181	382,122	119.1	340,917	106.3	-10.8%
9	Morgan State University (MSU)	3,396,043	342,866	101.0	301,267	90.0	-10.8%
10	Maryland Transit Administration (MDOT-MTA)	1,562,344	340,403	217.9	279,622	179.0	-17.9%
11	Frostburg State University (FSU)	1,547,381	207,429	134.1	202,404	131.5	-2.3%
12	Salisbury University (SU)	2,217,621	182,154	82.1	148,520	67.0	-18.4%
13	Stadium Authority, MD (STADAUTH)	4,274,000	168,040	39.3	177,219	41.5	5.5%
14	University of Maryland Eastern Shore (UMES)	1,093,365	154,368	141.2	84,119	77.0	-45.5%
15	Bowie State University (BSU)	1,332,563	153,917	115.5	135,011	101.3	-12.3%
16	State Highway Administration (MDOT-SHA)	2,276,739	139,194	61.1	116,059	55.5	-9.2%
17	Maryland Port Administration (MDOT-MPA)***	6,513,833	134,714	20.7	125,666	20.5	-1.0%
18	Coppin State University (CSU)	1,096,489	125,809	114.7	108,409	98.9	-13.8%
19	Maryland Transportation Authority (MDTA)	1,082,817	113,602	104.9	92,487	85.7	-18.3%
20	Military Dept (DMIL)	1,607,302	97,215	60.5	78,512	53.9	-11.0%
21	Saint Mary's College of MD (SMCM)	928,924	121,494	130.8	74,597	80.3	-38.6%
22	Juvenile Services, Dept of (DJS)	1,028,758	93,953	91.3	72,435	71.3	-21.9%
23	Police, Dept of MD State (DMSP)	600,622	87,359	145.4	83,774	139.5	-4.1%
24	University of Maryland Global Campus (UMGC)	1,005,624	82,637	82.2	49,928	49.6	-39.6%
25	Baltimore City Community College (BCCC)	736,165	77,446	105.2	68,535	120.8	14.8%

26	Motor Vehicle Administration (MDOT-MVA)	568,301	69,399	122.1	56,516	99.4	-18.6%
27	University of Baltimore (UB)	885,521	58,403	66.0	68,227	77.0	16.7%
28	University of Maryland Center for Environmental Science (UMCES)	349,510	58,298	166.8	49,277	141.0	-15.5%
29	Natural Resources, Dept of (DNR)***	1,173,946	52,957	45.1	97,614	83.2	84.4%
30	Veterans Affairs, MD Dept of (MDVA)	358,048	36,401	101.7	30,881	86.2	-15.2%
31	University of MD Shady Grove (UMSG)	507,256	34,273	67.6	23,548	46.4	-31.3%
32	Maryland Public Television (MPT)	140,497	30,953	220.3	30,139	214.5	-2.6%
33	Deaf, MD Schools for the	617,035	26,869	43.6	42,643	69.1	58.5%
34	Agriculture, MD Dept of (MDOA)	181,227	16,679	92.0	13,356	75.0	-18.5%
35	Human Resources, Dept of (DHR)	347,934	16,122	46.3	15,515	44.6	-3.7%
36	Planning, Dept of (MDP)	99,717	5,888	59.1	6,561	66.8	13.0%
37	Environmental Service, MD (MES)	69,913	5,374	76.9	2,374	38.2	-50.3%
38	Labor, Licensing and Regulation, Dept of (DLLR)	316,591	5,908	18.7	7,633	24.1	29.2%
39	Canal Place Preservation & Dev Authority (CPPDA)	29,994	1,839	61.3	616	21.3	-65.3%
40	Environment, MD Dept of the (MDE)	7,118	490	68.8	296	41.6	-39.6%
41	Food Center Authority, MD (MFCA)	63,600	329	5.2	374	5.9	13.1%
	TOTAL/AVERAGE	94,689,463	9,627,793	101.7	8,416,507	89.8	-11.7%

Notes:

*UMCP data is based on self-reported data from the agency.

**MPA data represents the entire Department's energy usage and square footage. Due to limited confirmed data, DGS was not able to confirm state owned buildings within the scope and proper meter assignments needed for reporting. Therefore, data is summed up for the entire agency, inclusive of non-buildings and leased facilities that would fall outside of the reporting scope.

***DNR data represents the entire Department's energy usage and square footage. Due to limited confirmed data, DGS was not able to confirm state owned buildings within the scope and proper meter assignments needed for reporting. Therefore, data is summed up for the entire agency, inclusive of non-buildings and leased facilities that would fall outside of the reporting scope.

Appendix 3: Top 20 Agencies – Independently Metered Buildings

The below table shows building-level energy usage and EUI for the top 20 energy using agencies for the baseline year of FY2018. Buildings included are those with building-level utility company meters.

Agency	Building Name (Independently Metered only)	Floor Area (Sqft.)	Building Primary Use	Year Built	FY18 Usage (MMBTU)	FY18 EUI (kBTU/ Sqft.)	CY22 Usage (MMBTU)	CY22 EUI (kBTU /Sqft.)	% Change in Usage from FY18 to CY22
BSU	Goodloe Alumni House	3,815	College/University	1916	255	66.8	143	37.4	-43.98%
DGS	Hilton Height Community Center - 530 N Hilton	8,750	Office	1948	425	48.5	451	51.5	6.2%
DGS	Annapolis Post Office	22,994	Office	2017	839	36.5	1,705	74.1	103.2%
DGS	Hilton Height Community Center - 510 N Hilton	22,900	Other - Entertainment/Public Assembly	1948	1,383	60.4	1,457	63.6	5.4%
DGS	Hagerstown - J. Louis Boublitz DC/MSC	27,240	Courthouse	2000	1,430	52.5	1,286	47.2	-10.1%
DGS	Denton - John Hargreaves DC/MSC	31,798	Courthouse	1998	1,788	56.2	1,939	61.0	8.4%
DGS	Essex/Rosedale DC/MSC	22,975	Courthouse	1982	2,100	91.4	2,329	101.4	10.9%
DGS	Centreville - Carter Hickman DC/MSC	37,783	Courthouse	1982	2,772	73.4	1,860	49.2	-32.9%
DGS	OPD - 201 St. Paul Street	32,000	Office	1900	2,783	87.0	2,378	74.3	-14.5%
DGS	Prince Frederick - Louis L. Goldstein DC/MSC	73,000	Courthouse	1991	3,669	50.3	3,675	50.3	0.2%
DGS	Westminster DC/MSC	43,000	Courthouse	2002	4,125	95.9	5,760	134.0	39.6%
DGS	Towson DC	52,000	Courthouse	1994	5,069	97.5	4,410	84.8	-13.0%
DGS	Ellicott City DC/MSC	75,300	Courthouse	1982	5,309	70.5	3,279	43.5	-38.2%
DGS	Hyattsville DC/MSC	82,000	Courthouse	1994	5,362	65.4	5,683	69.3	6.0%
DGS	Wabash - Borgerding DC/MSC	52,824	Courthouse	1986	5,409	102.4	3,579	67.8	-33.8%
DGS	Leonardtown - Joseph P. Carter DC/MSC	77,920	Courthouse	1994	5,661	72.7	4,198	53.9	-25.8%
DGS	Jessup State Complex	126,800	Office	1970	6,011	47.4	4,852	38.3	-19.3%
DGS	2100 Guilford - Parole & Probation	82,953	Prison/Incarceration	1924	6,012	72.5	2,148	25.9	-64.3%
DGS	South Baltimore - Hargrove DC/MSC	84,730	Courthouse	2003	6,721	79.3	9,179	108.3	36.6%
DGS	Elkton DC/MSC	126,700	Courthouse	1983	6,725	53.1	4,949	39.1	-26.4%
DGS	Glen Burnie - George M. Taylor DC/MSC	97,104	Courthouse	1982	6,948	71.6	8,008	82.5	15.3%

DGS	Silver Spring - L. Leonard Ruben DC	79,596	Courthouse	2004	7,273	91.4	5,987	75.2	-17.7%
DGS	Shillman Building	160,000	Courthouse	1972	9,564	59.8	7,491	46.8	-21.7%
DGS	Salisbury - Paul Martin DC/MSC	224,343	Courthouse	1990	10,182	45.4	11,695	52.1	14.9%
DGS	Bel Air - Mary Risteau DC/MSC	140,000	Courthouse	1983	11,604	82.9	11,230	80.2	-3.2%
DGS	Peoples Resource Center - 100 Community Place	155,900	Office	1991	12,237	78.5	10,094	64.7	-17.5%
DGS	Civic Plaza - 200 W BALTIMORE St	217,700	Office	1911	15,600	71.7	15,272	70.2	-2.1%
DGS	Rockville DC/MSC	167,000	Courthouse	2011	26,234	157.1	14,394	86.2	-45.1%
DGS	WilliamDonaldSchaefer-6 St. Paul	305,400	Office	1986	33,508	109.7	32,512	106.5	-3.0%
DMIL-ARMY	209 S STORAGE SHED	975	Storage	1976	2	2.2	1	1.0	-53.2%
DMIL-ARMY	2-Bay Maintenance Shop	6,657	Storage	1971	18	2.7	0	0.0	-100.0%
DMIL-ARMY	WHITE OAK FMS	2,873	Storage	1972	44	15.2	55	19.1	26.3%
DMIL-ARMY	113- GATEHOUSE BUILDING	64	Other	1990	63	980.9	67	1046.9	6.7%
DMIL-ARMY	W-3 WHSE BUILDING	6,156	Warehouse - Unrefrigerated	1924	64	10.4	40	6.5	-37.5%
DMIL-ARMY	BLD. 402 WELL PUMP	180	Pump House	1975	85	474.5	59	327.8	-30.9%
DMIL-ARMY	W-2 WHSE BUILDING	7,680	Warehouse - Unrefrigerated	1924	91	11.8	527	68.6	481.4%
DMIL-ARMY	201- BEECHAM BUILDING	5,095	Hospital	1999	130	25.5	82	16.1	-36.9%
DMIL-ARMY	P1- MAINT BUILDING	1,008	Shop	1991	207	205.5	7	6.9	-96.6%
DMIL-ARMY	SEC 16 - EST 2000	512	Office	1975	211	412.6	190	371.1	-10.1%
DMIL-ARMY	S-3 MAINT BUILDING	2,356	Repair Services	1924	257	109.2	259	109.9	0.7%
DMIL-ARMY	Pikesville Armory	96,755	Office	1903	283	2.9	77	0.8	-72.8%
DMIL-ARMY	Catonsville Armory	29,127	Office	1957	338	11.6	467	16.0	38.2%
DMIL-ARMY	DUNDALK OLD FMS	3,739	Shop	1960	356	95.3	344	92.0	-3.4%
DMIL-ARMY	DUNDALK NEW FMS	19,230	Shop	2008	535	27.8	446	23.2	-16.6%

DMIL-ARMY	S-5 MAINT BUILDING	2,337	Repair Services	1924	537	230.0	593	253.7	10.3%
DMIL-ARMY	NCO Building	12,320	Other - Recreation	1903	595	48.3	647	52.5	8.7%
DMIL-ARMY	USP&FO Warehouse	1,440	Warehouse - Unrefrigerated	2007	638	443.0	861	597.9	35.0%
DMIL-ARMY	GLEN BURNIE ARMORY	23,179	Office	1950	662	28.6	640	27.6	-3.3%
DMIL-ARMY	W-8 WHSE BUILDING	9,600	Warehouse - Unrefrigerated	1924	742	77.3	572	59.6	-22.9%
DMIL-ARMY	QUEEN ANNE ARMORY	17,642	Office	1977	781	44.3	2	0.1	-99.7%
DMIL-ARMY	SALISBURY FMS	11,432	Shop	2004	836	73.1	1,008	88.2	20.6%
DMIL-ARMY	S-2 MAINT BUILDING	19,844	Shop	1924	985	49.7	1,169	58.9	18.6%
DMIL-ARMY	HAGERSTOWN ARMORY	30,306	Office	1978	998	32.9	1,970	65.0	97.4%
DMIL-ARMY	LAPLATA ARMORY	23,230	Office	2016	1,087	46.8	809	34.8	-25.6%
DMIL-ARMY	FREDERICK ARMORY	18,630	Office	1978	1,240	66.5	798	42.8	-35.6%
DMIL-ARMY	SALISBURY ARMORY	33,070	Office	1959	1,460	44.1	1,464	44.3	0.3%
DMIL-ARMY	WESTMINSTER ARMORY	17,229	Office	1980	1,527	88.6	1,361	79.0	-10.9%
DMIL-ARMY	O-2 ADMIN BUILDING	16,108	Office	1948	1,562	97.0	1,704	105.8	9.1%
DMIL-ARMY	ELLICOTT CITY ARMORY	19,356	Office	1953	1,672	86.4	32	1.7	-98.1%
DMIL-ARMY	ANNAPOLIS ARMORY	41,473	Office	1959	1,700	41.0	1,825	44.0	7.4%
DMIL-ARMY	WHITE OAK ARMORY	27,078	Office	1972	1,736	64.1	1,282	47.3	-26.1%
DMIL-ARMY	CADE ARMORY	35,369	Office	1960	2,023	57.2	1,658	46.9	-18.0%
DMIL-ARMY	GUNPOWDER-PURNELL ARMORY	31,969	Office	1975	2,201	68.9	1,451	45.4	-34.1%
DMIL-ARMY	CUMBERLAND ARMORY	26,332	Office	1960	2,355	89.4	1,954	74.2	-17.0%
DMIL-ARMY	PARKVILLE ARMORY	39,279	Office	1964	2,358	60.0	2,111	53.7	-10.5%
DMIL-ARMY	Dundalk Armory	31,022	Fitness Center/Health Club/Gym	1960	3,271	105.4	3,535	114.0	8.1%

DMIL-ARMY	RUHL ARMORY-TOWSON	71,699	Office	1980	3,909	54.5	3,133	43.7	-19.8%
DMIL-ARMY	114- ARMORY BUILDING	63,481	Office	1990	7,839	123.5	6,458	101.7	-17.6%
DMIL-ARMY	FIFTH REGIMENT ARMORY	322,434	Office	1901	19,418	60.2	14,011	43.5	-27.8%
FSU	Intramural Field Restroom	720	Restroom	2012	8	11.7	11	15.3	30.3%
FSU	WFWM RADIO STATION	100	Office	2015	76	764.6	103	1030.0	34.7%
FSU	20 BRADDOCK	1,913	Office	1955	125	65.1	89	46.5	-28.6%
FSU	MIDLOTHIAN ROAD	27,520	Irrigation	2012	1,041	37.8	1,036	37.6	-0.5%
MAA	801 WILSON-POINT RD	28,404	Hangar	1980	30	1.1	12	0.4	-60.6%
MAA	801 WILSON-POINT RD	68,803	Hangar	1980	35	0.5	23	0.3	-34.3%
MAA	Building 120	2,185	Office	1980	74	34.0	99	45.3	33.4%
MAA	3000 Mathison Way	60,000	Office	1990	79	1.3	64	1.1	-19.5%
MAA	Building 117	8,844	Storage	1980	202	22.8	145	16.4	-28.1%
MAA	Building 137	3,880	Shop	1980	207	53.3	173	44.6	-16.3%
MAA	R 7023 Elm Rd Bldg 123, Bay A	1,500	Shop	1980	225	150.2	244	162.7	8.3%
MAA	Building 113	28,400	Storage	1980	236	8.3	270	9.5	14.4%
MAA	Building 158	5,100	Maintenance Shop	1980	358	70.1	807	158.2	125.7%
MAA	Building 119	3,840	Storage	1980	394	102.7	308	80.2	-21.9%
MAA	701 Wilson Point Rd Hangar	12,345	Hangar	2000	933	75.6	1,013	82.1	8.6%
MAA	Building 121	8,200	Shop	1980	996	121.5	950	115.9	-4.6%
MAA	701 WILSON-POINT RD	9,181	Hangar	1980	1,049	114.3	705	76.8	-32.8%
MAA	701 Wilson-Point Road - Hangar 6	61,100	Hangar	1980	1,150	18.8	882	14.4	-23.3%
MAA	601 WILSON-POINT RD	74,200	Hangar	1980	1,342	18.1	1,674	22.6	24.7%
MAA	7057 Elm Rd Bldg 112	45,000	Office	1980	1,454	32.3	850	18.9	-41.5%
MAA	701 Wilson-Point Road - Hangar 4	61,800	Hangar	1980	1,568	25.4	1,185	19.2	-24.4%
MAA	Building 155	9,504	Office	1980	2,555	268.8	2,704	284.5	5.9%
MAA	Building 105	35,000	Firestation	1980	3,773	107.8	3,863	110.4	2.4%
MAA	601 WILSON-POINT RD	19,800	Hangar	1980	4,057	204.9	3,167	159.9	-21.9%
MAA	Building 107	28,000	Storage	1980	4,874	174.1	5,430	193.9	11.4%
MAA	MAC Building 172	172,000	Office	1980	9,527	55.4	9,169	53.3	-3.8%
MAA	701 WILSON-POINT RD (Central)	12,900	Hangar	1980	12,586	975.7	12,168	943.3	-3.3%
MAA	Building 116 FMX Shop	10,200	Shop	1995	17,979	1762.6	5,329	522.5	-70.4%
MAA	100 Building - BWI Airport	2,129,	Hangar	1947	501,342	235.4	499,311	234.4	-0.4%

		891							
MDH	Garage	1,400	Repair Services	1996	143	102.2	152	108.6	6.2%
MDH	Employee Dorms	12,092	Residential Care Facility	1958	969	80.2	460	38.0	-52.6%
MDH	Gym	8,305	Gym/Stadium	1986	1,200	144.5	1,800	216.7	50.0%
MDH	Office of Chief Medical Examiner	120,000	Laboratory	2010	17,153	142.9	23,692	197.4	38.1%
MDH	MDH Eastern Shore Hospital Center	108,000	Residential Care Facility	2001	22,896	212.0	21,503	199.1	-6.1%
MDTA	Western Shore Storage Building	2,240	Storage	1905	22	9.6	54	24.1	149.9%
MDTA	9665 Orland Park Road (Maint. Bldg 1)	3,292	Office	1940	166	50.5	164	49.8	-1.4%
MDTA	Maintenance Building 2	5,234	Office	2019	308	58.8	444	84.8	44.3%
MDTA	7677 LILLIAN HOLT DRIVE	14,406	Office	-	313	21.7	345	23.9	10.2%
MDTA	OPS Building (2340)	5,736	Office	1905	345	60.1	352	61.4	2.1%
MDTA	Eastern Shore Storage Building	1,920	Storage	1905	472	245.8	479	249.5	1.5%
MDTA	2330 BROENING HWY	14,015	Office	1905	795	56.7	2,400	171.2	202.0%
MDTA	Police & Automotive Building	38,860	Mixed Use Property	1905	2,017	51.9	2,153	55.4	6.8%
MDTA	Headquarters Building (2310)	62,141	Office	1905	4,016	64.6	3,822	61.5	-4.8%
MDTA	303 AUTHORITY DR	25,800	Office	-	6,020	233.3	4,209	163.1	-30.1%
MDTA	Administration Building (1200 Frankfurst Ave)	32,253	Office	1956	8,641	267.9	8,374	259.6	-3.1%
MDTA	1700 FRANKFURST AVENUE	7,149	Office	-	15,255	2133.9	14,738	2061.5	-3.4%
MSU	1140 E COLD-SPRING LA	10,269	Storage	1950	26	2.5	316	30.8	1138.4%
MSU	2412 President's Residence	4,270	Residence	1963	193	45.2	258	60.4	33.8%
MSU	Lillie Carroll Jackson Museum	5,600	Museum	1900	306	54.7	312	55.7	1.8%
MSU	Morgan Christian Center	3,883	Office	1942	379	97.7	254	65.4	-33.1%
MSU	Thurgood Marshall D	6,591	Dormitory/Residence Hall	1986	422	64.1	172	26.1	-59.3%
MSU	Thurgood Marshall B	19,774	Dormitory/Residence Hall	1986	941	47.6	411	20.8	-56.3%
MSU	Thurgood Marshall C	19,774	Dormitory/Residence Hall	1986	966	48.9	402	20.3	-58.4%
MSU	Thurgood Marshall A	19,774	Dormitory/Residence Hall	1986	985	49.8	393	19.9	-60.1%

MSU	Estuarine Center (off site)	28,000	Office	1995	1,164	41.6	1,877	67.0	61.2%
MSU	4530 Portage Ave	40,856	Office	1983	1,490	36.5	1,711	41.9	14.8%
MSU	Business School	138,000	Office	2016	18,403	133.4	9,066	65.7	-50.7%
MSU	Behavioral & Social Science Center (BSSC)	140,000	Office	1980	24,248	173.2	9,301	66.4	-61.6%
MTA	Laurel Station	800	Transportation Terminal/Station	1984	296	370.2	254	317.5	-14.2%
MTA	Bush Bus Division	25,000	Storage	-	594	23.8	430	17.2	-27.6%
MTA	Light Rail Stations Cherry Hill	40,000	Storage	1960	751	18.8	407	10.2	-45.8%
MTA	Light Rail Stations Cherry Hill	10,000	-	-	960	96.0	127	12.7	-86.8%
MTA	Eastern Bus Division Trans Bldg	13,913	Shop	1950	979	70.4	965	69.4	-1.5%
MTA	MTA Police Mt. Hope DR	90,000	Police Station	2011	3,112	34.6	2,747	30.5	-11.7%
MTA	Procurement	34,506	Office	2000	3,150	91.3	3,865	112.0	22.7%
MTA	Kirk Bus Division	46,239	Shop	2016	11,562	250	1,169	25.3	-89.9%
MTA	METRO Maintenance Old Court	40,000	Shop	1979	5,569	139.2	4,576	114.4	-17.8%
MTA	Cromwell Light Rail Maintenance	56,279	Shop	2000	8,342	148.2	7,532	133.8	-9.7%
MTA	MARC Maintenance Facilities Martins	55,000	Maintenance Shop	2006	9,772	177.7	7,970	144.9	-18.4%
MTA	Light Rail Maintenance North Ave	107,000	Shop	1991	14,807	138.4	14,804	138.4	0.0%
MTA	Northwest Bus Division	264,905	Shop	1974	17,426	65.8	13,825	52.2	-20.7%
MTA	5801 WABASH AVE	130,000	Shop	1981	26,020	200.2	22,709	174.7	-12.7%
MTA	Bush Bus Division	348,702	Shop	1903	58,402	167.5	53,454	153.3	-8.5%
MTA	Metro Stations Johns Hopkins	300,000	Transportation Terminal/Station	1992	178,662	595.5	144,787	482.6	-19.0%
SHA	Shop - Salisbury Old District Office	1,789	Shop	1984	125	69.8	118	66.0	-5.5%
SHA	Vehicle Calibration Building	7,381	Office	-	573	77.6	897	121.5	56.7%
SHA	Highway Communications Division	5,485	Shop	-	671	122.3	666	121.4	-0.7%
SHA	Shop - Denton	34,648	Shop	1984	696	20.1	687	19.8	-1.3%
SHA	Shop - Snow Hill	35,375	Shop	1958	699	19.8	592	16.7	-15.3%
SHA	Shop - Cambridge	63,988	Shop	1963	752	11.8	1,030	16.1	37.0%
SHA	Shop - Leonardtown	45,891	Shop	1975	1,051	22.9	850	18.5	-19.1%

SHA	Shop - Princess Anne	36,074	Shop	1960	1,191	33.0	434	12.0	-63.6%
SHA	District Office/Shop - Chestertown	54,302	Office	-	1,224	22.5	3,181	58.6	159.9%
SHA	Shop - Prince Frederick	32,077	Shop	1968	1,251	39.0	2,137	66.6	70.8%
SHA	Shop - Easton	31,100	Shop	1952	1,290	41.5	1,910	61.4	48.1%
SHA	District Office - LaVale	18,406	Office	-	1,569	85.3	933	50.7	-40.5%
SHA	Shop - Centerville	44,192	Shop	1963	1,598	36.2	1,644	37.2	2.9%
SHA	Shop - Gaithersburg	48,273	Shop	1994	1,736	36.0	2,347	48.6	35.2%
SHA	Shop - Dayton	48,527	Shop	2003	1,907	39.3	1,964	40.5	3.0%
SHA	Shop - Laurel	42,987	Shop	1987	2,085	48.5	3,081	71.7	47.8%
SHA	Shop - Lavale	48,582	Shop	-	2,190	45.1	1,665	34.3	-24.0%
SHA	Shop - Fairlands	45,323	Shop	1998	2,260	49.9	2,471	54.5	9.4%
SHA	Shop - Hagerstown	53,639	Shop	1986	2,276	42.4	770	14.4	-66.2%
SHA	District Office-PG	41,967	Office	-	2,425	57.8	3,739	89.1	54.2%
SHA	Shop - Upper Marlboro	52,763	Shop	1998	2,559	48.5	2,520	47.8	-1.5%
SHA	Shop - Churchville	45,103	Shop	2000	2,628	58.3	2,177	48.3	-17.2%
SHA	Shop - Elkton	50,890	Shop	1987	2,799	55.0	1,198	23.5	-57.2%
SHA	Shop - Glen Burnie	52,430	Shop	1979	2,805	53.5	3,592	68.5	28.1%
SHA	211 Building	51,312	Office	1963	2,845	55.4	2,078	40.5	-27.0%
SHA	Shop - Golden Ring	36,230	Shop	1988	2,949	81.4	3,188	88.0	8.1%
SHA	Shop - Owings Mills	49,498	Shop	1985	3,122	63.1	2,257	45.6	-27.7%
SHA	Building 1 OOTS 2 & 3	134,954	Office	-	3,137	23.2	3,000	22.2	-4.4%
SHA	Shop - Hereford	45,754	Shop	1988	3,340	73.0	1,815	39.7	-45.7%
SHA	District Office - Frederick	67,621	Office	-	3,379	50.0	2,118	31.3	-37.3%
SHA	Shop - LaPlata	48,146	Shop	1985	3,407	70.8	1,556	32.3	-54.3%
SHA	Shop - Westminster	47,372	Shop	1986	4,003	84.5	3,751	79.2	-6.3%
SHA	District Office - Salisbury	52,568	Office	-	4,586	87.2	3,905	74.3	-14.8%
SHA	District Office - Warren Road	19,003	Office	-	4,611	242.6	5,134	270.2	11.4%
SHA	Building 1 SOC & OOM	51,998	Office	-	4,761	91.6	3,876	74.5	-18.6%
SHA	Shop - Keysers Ridge	94,061	Shop	1983	4,890	52.0	1,192	12.7	-75.6%
SHA	District office/shop - Annapolis	47,777	Office	-	5,557	116.3	6,096	127.6	9.7%
SHA	Building 4 & Vehicle Calibration	105,798	Office	-	10,169	96.1	8,630	81.6	-15.1%
SHA	Building 4	98,417	Office	-	10,983	111.6	10,590	107.6	-3.6%
SHA	707 Building	199,145	Office	-	15,033	75.5	16,273	81.7	8.3%
SU	1206 A Camden Ave. C-3	625	Office	1950	19	30.7	26	41.6	35.4%

SU	1100 Camden Ave. Center for Conflict Resolution	2,917	Office	1934	33	11.4	34	11.7	2.3%
SU	305 College Ave. Environmental Studies	2,000	Office	1947	37	18.6	45	22.5	21.0%
SU	1214 Camden Ave. University Analysis House	3,085	Office	1937	41	13.3	33	10.7	-19.7%
SU	1504 S. Salisbury Blvd	3,000	Storage	1970	47	15.8	2	0.7	-95.8%
SU	1106 Camden Ave. International Faculty House	2,368	Office	1940	48	20.4	36	15.2	-25.5%
SU	Tower Shelter	212	Antenna/Communication	2014	49	229.5	51	240.6	4.8%
SU	303 College Ave. Student Arts	2,457	Office	1942	52	21.0	50	20.4	-3.2%
SU	1013 Camden Ave. Philosophy House	3,340	Office	1928	54	16.3	71	21.3	30.4%
SU	1206 Camden Ave. C-2	2,620	Office	1950	61	23.1	65	24.8	7.4%
SU	215 Milford St. M-2	10,900	Storage	1980	69	6.4	208	19.1	199.8%
SU	103 Power St. Grounds Storage	3,675	Storage	1999	74	20.2	73	19.9	-1.6%
SU	Nanticoke River Center	7,082	Other - Education	2006	76	10.8	77	10.9	0.8%
SU	406 Loblolly Lane Carriage House	1,409	Residence	1930	91	64.3	82	58.2	-9.5%
SU	1108 Camden Ave. C-1	2,432	Office	1940	95	39.0	96	39.5	1.1%
SU	DOGWOOD VILLAGE K	1,792	Dormitory/Residence Hall	1985	102	56.9	68	37.9	-33.3%
SU	ATHLETIC TEAM BUILDING-SOCCER	2,573	Other	2012	104	40.6	132	51.3	26.4%
SU	DOGWOOD VILLAGE L	1,792	Dormitory/Residence Hall	1985	105	58.5	93	51.9	-11.2%
SU	DOGWOOD VILLAGE O	1,792	Dormitory/Residence Hall	1985	106	59.1	103	57.5	-2.8%
SU	DOGWOOD VILLAGE M	1,792	Dormitory/Residence Hall	1985	112	62.8	101	56.4	-10.2%
SU	1220 S. Division D-1	1,535	Office	1950	113	73.4	62	40.4	-45.0%
SU	DOGWOOD VILLAGE N	1,792	Dormitory/Residence Hall	1985	115	64.0	61	34.0	-46.8%
SU	1212 Camden Ave. Camden House	2,680	Office	1940	120	44.8	145	54.1	20.9%
SU	DOGWOOD VILLAGE H	1,792	Dormitory/Residence Hall	1985	124	69.2	77	43.0	-37.9%
SU	DOGWOOD VILLAGE B	1,792	Dormitory/Residence Hall	1985	124	69.2	98	54.7	-20.9%

SU	1308 Camden Ave. Foundation Center	5,468	Office	1925	125	22.9	108	19.8	-13.9%
SU	DOGWOOD VILLAGE F	1,792	Dormitory/Residence Hall	1985	129	71.9	59	32.9	-54.2%
SU	DOGWOOD VILLAGE C	1,792	Dormitory/Residence Hall	1985	131	73.1	71	39.6	-45.8%
SU	DOGWOOD VILLAGE G	1,792	Dormitory/Residence Hall	1985	131	73.3	55	30.7	-58.1%
SU	1015 CAMDEN AVE, SALISBURY	2,559	Office	1943	145	56.8	156	61.0	7.4%
SU	DOGWOOD VILLAGE E	1,792	Dormitory/Residence Hall	1985	147	82.1	96	53.6	-34.8%
SU	DOGWOOD VILLAGE D	1,792	Dormitory/Residence Hall	1985	148	82.4	105	58.6	-28.9%
SU	DOGWOOD VILLAGE J	1,792	Dormitory/Residence Hall	1985	150	83.7	102	56.9	-32.0%
SU	1122 Camden Ave. Honors House	3,946	Office	1956	154	38.9	125	31.7	-18.6%
SU	DOGWOOD VILLAGE A	1,792	Dormitory/Residence Hall	1985	154	85.7	118	65.8	-23.2%
SU	106 Pine Bluff P-1	5,832	College/University	1950	244	41.8	254	43.6	4.2%
SU	DOGWOOD VILLAGE SUPPORT BUILDING	1,792	Dormitory/Residence Hall	1985	252	140.5	165	92.1	-34.5%
SU	1200 Camden Ave. Admissions House	7,700	Office	1930	319	41.5	251	32.6	-21.4%
SU	Outdoor Tennis Center	2,578	Outdoor Recreation	2016	336	130.5	234	90.8	-30.5%
SU	1204 Camden Ave. Scarborough Hall	8,400	Office	2001	383	45.6	420	50.0	9.8%
SU	1120 Camden Ave Alumni House	7,818	Office	1996	388	49.7	275	35.2	-29.2%
SU	205 Milford St. Indoor Tennis Center	20,000	Other - Recreation	1975	469	23.4	272	13.6	-42.0%
SU	119 Bateman St Support Services	15,200	Warehouse - Unrefrigerated	1960	531	34.9	526	34.6	-0.9%
SU	125 Bateman Street IT Building	14,477	Office	1950	666	46.0	548	37.9	-17.7%
SU	201 Milford St. University Fitness	15,034	Fitness Center/Health Club/Gym	1978	701	46.6	592	39.4	-15.6%
SU	1221 Wayne St. Green House & Grounds Office	5,768	Other	1994	1,012	175.5	895	155.2	-11.6%
SU	East Campus Complex	30,695	College/University	1989	1,386	45.1	1,369	44.6	-1.2%

SU	1123 S Division Street - Maint Bldg	36,000	Other - Services	2006	1,823	50.6	1,545	42.9	-15.2%
SU	Sea Gull Stadium	28,000	Stadium (Open)	2016	2,121	75.7	2,080	74.3	-1.9%
SU	1306 S. Salis. Blvd (Sea Gull Squ.)	232,000	Dormitory/Residence Hall	2011	8,652	37.3	9,472	40.8	9.5%
TU	AUBURN HOUSE-AH	11,600	-	1900	756	65.2	766	66.0	1.3%
TU	CHILD CARE CENTER - CC	11,800	Pre-School/Daycare	2007	1,362	115.4	1,232	104.4	-9.5%
TU	7400 York Road - Y2	41,200	Office	2009	2,080	50.5	1,195	29.0	-42.5%
TU	BARTON-BA	73,696	Dormitory/Residence Hall	2011	4,387	59.5	4,324	58.7	-1.4%
TU	FREDERICK DOUGLASS HOUSE	85,540	Dormitory/Residence Hall	2011	4,912	57.4	4,561	53.3	-7.1%
TU	CARROLLHALL-CH	170,504	Dormitory/Residence Hall	2016	7,850	46.0	6,734	39.5	-14.2%
TU	MARSHALLHALL	156,594	Dormitory	2001	8,232	52.6	7,942	50.7	-3.5%
TU	ADMINISTRATION BLDG (7720)-AD	119,467	Office	1957	10,224	85.6	9,188	76.9	-10.1%
TU	BURKSHIRE - TU MARRIOT- TM	311,209	Dormitory/Residence Hall	1989	19,552	62.8	12,270	39.4	-37.2%
UMB	INFO BLDG 100 N. GREENE ST	32,683	Office	1895	0	0.0	0	0.0	-100.0%
UMB	300 RUSSELL ST, 600 WASH BLVD PS	4,132	Office	1900	11	2.7	5	1.2	-55.1%
UMB	601 W. Lexington	8,835	Office	2000	41	4.7	19	2.2	-54.1%
UMB	300 RUSSELL ST 600 WASH BLVD 2ND FL	4,132	Office	1900	72	17.3	39	9.4	-45.6%
UMB	300 RUSSELL ST 600 WASH BLVD 1ST FL	4,132	Office	1900	97	23.5	68	16.5	-30.1%
UMB	300 RUSSELL ST 600 WASH BLVD 3RD FL	4,132	Office	1900	103	24.9	73	17.7	-29.1%
UMB	School of Social Work Administration Office	3,779	Office	2000	809	214.0	508	134.4	-37.2%
UMB	Pine Street Station - 212 N Pine St	9,028	Police Station	1877	1,044	115.7	1,033	114.4	-1.1%
UMB	Maryland Bar Center (MBC)	30,572	Administration	1930	2,833	92.7	1,974	64.6	-30.3%
UMB	General Research Building	38,147	Laboratory	1967	9,517	249.5	7,712	202.2	-19.0%
UMB	Walterhoffer	14,700	Vacant	2000	13	0.9	9	0.6	-28.1%
UMBC	Guard Station	50	Other	2000	20	394.2	21	420.0	6.5%
UMBC	Radio Tower & 4 Ancillary Bldgs	1,300	Antenna/Communication	2017	27	20.5	38	29.2	42.8%

UMBC	HazMat Storage	300	Storage	2009	60	200.5	48	160.0	-20.2%
UMBC	Plasma Spray Bldg	2,467	Laboratory	1980	120	48.8	105	42.6	-12.8%
UMBC	Army ROTC	4,245	College/University	1986	140	33.0	142	33.5	1.3%
UMBC	Naval ROTC	4,632	College/University	1963	156	33.6	140	30.2	-10.1%
UMBC	Tech 2 Bldg	4,256	Office	1992	286	67.3	335	78.7	16.9%
UMBC	Alumni House	7,615	Office	1970	360	47.3	309	40.6	-14.3%
UMBC	Professional Studies Bldg & Shed	8,216	Adult Education	1980	614	74.8	866	105.4	40.9%
UMBC	Clean Energy Technology Incubator (CETI)	22,767	Laboratory	1980	2,668	117.2	3,645	160.1	36.6%
UMBC	Chiller Plant	3,129	Energy/Power Station	1980	4,125	1318.2	4,408	1408.8	6.9%
UMBC	Technology Research Center (TRC)	77,029	Laboratory	1958	12,490	162.1	12,428	161.3	-0.5%
UMBC	Technology Center	134,197	Laboratory	1980	18,875	140.6	20,236	150.8	7.2%
UMBC	Columbus Center	263,937	Office	1995	58,326	221.0	69,101	261.8	18.5%
UMCP	007-Pocomoke Building	30,046	Police Station	1946	3,581	119.2	3,372	112.2	-5.8%
UMCP	164-University House	15,133	College/University	2012	559	36.9	589	38.9	5.4%
UMCP	170-Alpha Delta Pi Sorority (4535 College Ave)	10,459	College/University	1959	1,472	140.7	1,181	112.9	-19.8%
UMCP	171-Phi Sigma Sigma Sorority (4531 College Ave)	10,445	College/University	1960	1,009	96.6	1,014	97.1	0.5%
UMCP	172-Alpha Chi Omega Sorority (4525 College Ave)	11,712	College/University	1960	1,691	144.4	1,416	120.9	-16.3%
UMCP	173-Delta Phi Epsilon Sorority (4514 Knox Rd)	10,273	College/University	1964	1,264	123.0	1,033	100.6	-18.3%
UMCP	174-Sigma Delta Tau Sorority (4516 Knox Rd)	10,372	College/University	1963	1,409	135.8	1,019	98.2	-27.7%
UMCP	175-Delta Gamma Sorority (4518 Knox Rd)	11,662	College/University	1963	1,387	118.9	1,071	91.8	-22.8%
UMCP	176-Alpha Phi Sorority (7402 Princeton Ave)	11,833	College/University	1964	1,286	108.7	1,153	97.4	-10.3%
UMCP	199-MFRI Office/Classroom Building	45,973	College/University	1955	16,535	359.7	5,031	109.4	-69.6%
UMCP	221-Astronomical Observatory	1,643	Other - Technology/Science	1964	149	90.7	146	88.9	-2.0%

UMCP	309-Indoor Practice Facility	20,963	Fitness Center/Health Club/Gym	2001	139	6.6	169	8.1	21.6%
UMCP	395-Turfgrass Research Facility (Paint Branch)	4,500	Laboratory	1999	696	154.7	887	197.1	27.4%
UMCP	795-Avrum Gudelsky Veterinary Center	85,716	College/University	1989	29,210	340.8	30,339	353.9	3.9%
UMCP	800-4-H Headquarters	6,155	College/University	1989	702	114.1	640	104.0	-8.8%
UMCP	803-Adelphi Road Office Annex (8701 Adelphi Rd)	4,818	Office	1956	17	3.5	33	6.8	94.1%
UMCP	804-Cooperative Exten. Svc Annex (Riverdale)	35,293	Office	-	2,389	67.7	386	10.9	-83.8%
UMCP	805-Patapsco Building	53,964	Unknown	1969	5,973	110.7	0	0.0	
UMCP	806-Technology Ventures Building	52,816	College/University	1960	4,953	93.8	3,697	70.0	-25.4%
UMCP	809-Litton 3 (5000 51st Avenue)	9,763	Police Services	1984	2,320	237.6	944	96.7	-59.3%
UMCP	810-Severn Building	310,865	College/University	1998	46,497	149.6	38,855	125.0	-16.4%
UMCP	812-Seneca Building	40,770	College/University	1991	4,670	114.5	3,235	79.3	-30.7%
UMCP	821-MFRI Structural Firefighting Building (LaPlata)	9,801	Fire Station/College/University	2001	1,094	111.6	924	94.3	-15.5%
UMCP	826-MFRI Office/Classroom Building (Lower E. Shore)	6,888	College/University	1994	297	43.1	297	43.1	0.0%
UMCP	827-MFRI Structural Firefighting Bldg (Lower E. Shore)	2,329	Fire Station/College/University	1995	122	52.4	164	70.4	34.4%
UMCP	832-MFRI (Northeast)	9,801	Unknown	2011	714	72.8	739	75.4	3.5%
UMCP	842-MFRI Office/Classroom Building (W. Md)	5,736	College/University	1994	251	43.8	319	55.6	27.1%
UMCP	846-MFRI Structural Firefighting Bldg (Upper E. Shore)	2,329	Fire Station/College/University	2002	597	256.3	451	193.6	-24.5%
UMCP	CNS (Journalism)	1,003	College/University	-	28	27.9	37	36.9	32.1%
UMCP	LEAF House	4,500	Other-Technology/Science	2007	30	6.7	43	9.6	43.3%
UMES	1 TOM NICHOLS RD 11850, TOM NICHOLS	940	College/University	1961	13	14.0	7	6.9	-50.6%

	ROAD								
UMES	2 IRRIGATION PUMP, BACKBONE ROAD	2,200	College/University	2004	15	6.9	24	10.8	55.5%
UMES	HAWKS LANDING 1322, WILLIAM P HYTCHE	1,006	Other - Lodging/Residential	2001	23	23.2	33	32.8	41.1%
UMES	HAWKS LANDING 1522, WILLAIM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	24	23.6	23	23.2	-2.0%
UMES	HAWKS LANDING 1414, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	28	27.4	50	49.9	82.1%
UMES	HAWKS LANDING 1132, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	28	27.4	24	24.2	-11.7%
UMES	HAWKS LANDING 1411, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	28	28.0	43	42.8	53.2%
UMES	HAWKS LANDING 1433, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	29	28.6	30	29.4	3.0%
UMES	HAWKS LANDING 1223, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	30	30.1	34	33.5	11.1%
UMES	HAWKS LANDING 1131, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	30	30.2	29	28.5	-5.4%
UMES	HAWKS LANDING 1423, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	31	30.5	117	116.1	280.2%
UMES	HAWKS LANDING 1231, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	31	31.0	33	32.7	5.5%
UMES	HAWKS LANDING 1112, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	32	31.9	35	34.4	7.9%
UMES	HAWKS LANDING 1121, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	33	32.4	37	37.3	14.9%
UMES	HAWKS LANDING 1211, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	33	32.8	34	34.0	3.9%
UMES	HAWKS LANDING 1421, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	33	32.9	27	26.5	-19.4%
UMES	HAWKS LANDING 1432,	1,006	Other -	2001	33	33.1	31	30.5	-7.7%

	WILLIAM P HYCHE BLVD		Lodging/Residential						
UMES	HAWKS LANDING 1224, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	33	33.2	33	33.1	-0.2%
UMES	HAWKS LANDING 1531, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	35	34.6	38	37.7	9.2%
UMES	HAWKS LANDING 1424, WILLIAM HYCHE BLVD	1,006	Other - Lodging/Residential	2001	35	34.8	31	31.1	-10.6%
UMES	HAWKS LANDING 1412, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	35	34.8	31	31.2	-10.5%
UMES	HAWKS LANDING 1313, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	36	35.4	38	37.3	5.3%
UMES	HAWKS LANDING 1434, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	36	35.9	41	41.1	14.5%
UMES	HAWKS LANDING 1324, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	36	36.2	27	26.3	-27.2%
UMES	HAWKS LANDING 1323, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	37	36.5	34	34.2	-6.3%
UMES	HAWKS LANDING 1222, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	38	37.7	23	23.3	-38.3%
UMES	HAWKS LANDING 1431, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	38	37.8	31	31.1	-17.6%
UMES	HAWKS LANDING 1532, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	38	38.1	41	41.2	8.2%
UMES	HAWKS LANDING 1233, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	41	40.3	32	31.6	-21.7%
UMES	HAWKS LANDING 1331, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	42	41.4	31	30.6	-26.0%
UMES	HAWKS LANDING 1334, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	42	42.0	31	30.4	-27.7%
UMES	HAWKS LANDING 1333, WILLIAM P HYCHE	1,006	Other - Lodging/Resident	2001	42	42.2	34	33.6	-20.3%

	BLVD		ial						
UMES	HAWKS LANDING 1422, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	42	42.2	19	19.3	-54.1%
UMES	HAWKS LANDING 1332, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	43	42.3	39	38.3	-9.4%
UMES	HAWKS LANDING 1321, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	43	43.1	29	29.3	-32.1%
UMES	HAWKS LANDING 1511, WILLIAM P HYTCHE BLVD	1,006	Other - Lodging/Residential	2001	43	43.1	40	39.3	-8.9%
UMES	HAWKS LANDING 1512, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	45	44.3	34	33.9	-23.5%
UMES	HAWKS LANDING 1232, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	45	45.2	50	49.4	9.3%
UMES	HAWKS LANDING 1234, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	46	45.3	36	36.1	-20.4%
UMES	HAWKS LANDING 1221, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	47	46.4	38	38.2	-17.6%
UMES	HAWKS LANDING 1122, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	49	49.0	50	49.4	0.7%
UMES	HAWKS LANDING 1312, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	51	50.9	48	47.2	-7.2%
UMES	HAWKS LANDING 1212, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	54	54.1	44	44.1	-18.5%
UMES	HAWKS LANDING 1413, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	59	58.7	48	47.7	-18.8%
UMES	2 TOM NICHOLS ROAD 11850, TOM NICHOLS ROAD	14,033	College/University	1961	90	6.4	21	1.5	-76.9%
UMES	HAWKS LANDING 1000, WILLIAM P HYCHE	1,006	Other - Lodging/Residential	2001	134	132.9	125	124.2	-6.6%
UMES	HAWKS LANDING 1314, WILLIAM P HYCHE BLVD	1,006	Other - Lodging/Residential	2001	207	206.1	218	216.2	4.9%

UMES	Coastal Ecology	11,000	College/University	2005	1,000	90.9	485	44.1	-51.5%