

NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
ENERGY USAGE REPORT 2019-20

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 State Construction Office

PURPOSE

The Department of Administration (DOA) reports energy and water usage annually and includes the figures in the Energy Management Plan. Reporting originally was done annually in accordance with the requirements of GS 143-64.12. It also addresses reporting requirements of EO-80, dated October 29, 2018. The baseline year is FY 2002-03.

OVERVIEW

For last year's report, DOA, in response to requests from DEQ, reviewed and revised the Gross Square Footage (GSF) figures used for energy reporting. DOA is assigned most of the State buildings in the Raleigh Downtown Government Campus and DOA Facility Management is responsible for operating and maintaining these buildings, including paying the water, electric, and natural gas utility bills. DOA operates a central steam heating plant, two chilled water plants, and chilled water storage tanks. These plants provide chilled water and steam to many of the DOA buildings and a few buildings that are being reported to the Energy Office by other state agencies. This report continues to focus primarily on the Downtown Complex, using the baseline revised for the 2018-19 report.

Revised baseline: Previous reporting included additional buildings. The table below shows the revised baseline. For additional information, refer to notes on DOA energy reporting; parking decks; and, buildings.

FY	Energy + Water Cost (\$)	Total Energy Cost (\$)	Total Energy Usage (Btu)	Total Water + Sewer Cost (\$)	Total water Usage (mgal)	Total Building Area (gsf)	Energy Tracking Measure (Btu/gsf)	Energy Reduction from Baseline (%)
2002-03	\$8,621,411	\$8,621,411	696,827,809,264	Not Available	Not Available	4,659,040	149,565	NA
Revised 2002-03	\$7,894,926	\$7,894,926	473,446,975,544	Not Available	Not Available	3,653,063	129,603	NA

CURRENT ENERGY PERFORMANCE

The table below identifies the DOA baseline energy usage of 2002-03 (revised) and the present energy usage for 2018-19, and 2019-20.

FY	Energy + Water Cost (\$)	Total Energy Cost (\$)	Total Energy Usage (Btu)	Total Water + Sewer Cost (\$)	Total water Usage (mgal)	Total Building Area (gsf)	Energy Tracking Measure (Btu/gsf)	Energy Reduction from Baseline (%)
Revised 2002-03	\$7,894,926	\$7,894,926	473,446,975,544	Not Available	Not Available	3,653,063	129,603	NA
2018-19	\$7,559,514	\$7,060,624	460,262,263,776	\$498,890	39,611	4,084,314	112,718	-13.0%
2019-20	\$6,553,802	\$6,024,098	446,307,164,846	\$529,704	45,140	4,084,314	109,273	-15.7%

Based upon baseline data reported in FY2002-03, DOA is reporting an Energy Reduction of 15.7%. Water reporting has been erratic and as such, the baseline was not reported. DOA did report water usage for FY 2018-19 and FY2019-20.

DOA Energy Reporting:

The Baseline and subsequent reporting of energy data has been dependent in large part on a database and reporting tool that is fraught with errors. The database tool includes report generation that is now known to generate reports that include corrupted data. Some reports drop individual monthly data that is contained in the database. The database was originally designed as a DOS-based system and does not meet the current IT standards. DOA will not renew the contract for this system. A task group is reviewing options for a replacement that meeting IT standards and provides accurate reporting capabilities. This energy usage report is based on energy billing and usage data available, with acknowledgement that it contains incomplete data due to the limitations of the energy database tool in use.

Parking Decks:

In 2018 and 2019, DEQ questioned the square footage reported by DOA. In large part, the question was the inclusion of parking decks in the energy reporting. In 2019, efforts were made to reconcile the square footage and baseline figures. Parking deck square footage is not included in the energy usage reporting.

Parking Deck 65 is attached to five (5) Downtown Government Complex buildings: Archdale Building; Dobbs Building; New Revenue Building; New Education Building; and Legislative Office Building (LOB). Parking Deck 65 does not have its own electrical service or electrical meter. It was built in phases, as the buildings around Halifax Mall were built. There is no practical way to segregate the electrical usage of the parking deck from the surrounding buildings. The parking deck energy usage includes lighting and exhaust fans for ventilation. In addition, automatic roll-up doors add to the electrical load.

Parking Deck 77 was built as part of the Green Square project. The square footage increased with the addition of Nature Resource Center (NRC), DENR/DEQ Office Building, and Parking Deck 77. An effort has been made to be more transparent about the buildings and square footage included in the report.

Parking Deck 17 sits below the Museum of History. Notes on the energy reporting template indicated that Museum of History included 301,000 GSF for parking deck. The Museum of History is being reported as 190,099 GSF, as reflected in the State Property Office (SPO) database. This does not include additional square footage for Parking Deck 17.

The billing and meter data is stored in a database that has a web interface for extracting or reporting data. The software package, Willowtec, was one of the early tools used in State Government for energy reporting. In 2001-02 it was considered by some ahead of its time; however, it falls short of meeting even its initial intent. The constraints associated with the program are clear indications it is not adequate for the energy management needs of DOA. Review of the data in the database reveal that it contains some discrepancies. DOA is researching other options that are better suited to meet its utility metering and billing data management and reporting needs. Available options can help DOA make better use of the data as a management tool, as well as providing a tool for reporting to meet the reporting requirements of EO-80. Available information indicates that DOA is opted-in for the energy efficiency rider charged by the electric utility, without making full use of the energy efficiency resources funded by this rider. DOA is exploring other energy data management tools. Opting out of the energy efficiency rider may provide some funding to go toward the new energy data tool.

Buildings included in the Willowtec database include buildings that are not DOA buildings. Efforts were made to reconcile GSF figures, as well as identify the groups of buildings that are included. The SPO data was used to identify buildings, agency, square footage, and construction year.

Buildings (Background and Notes):

The revised baseline includes only the DOA owned and operated buildings in the Downtown Government Complex.

Legislative Building (LB) and Legislative Office Building (LOB) do not fall under DOA and are not included in the DOA square footage. The steam and chilled water supplied to LB and LOB are included in the energy report. Steam and chilled water supplied by the central plants to LB and LOB have not been separately metered. SPO lists the size of the buildings as 165,786 GSF and 166,144 GSF, respectively.

Highway Building, Former Art Museum, and Olivia Raney Building, all located in downtown Raleigh, are Department of Transportation (DOT) maintained and operated, and are not included in the DOA reporting.

Department of Military and Veteran Affairs (DMVA) is now a separate department. Prior to being named a department, it was a division within DOA. Currently the only building that falls under DOA is the Seaboard Building, owned and operated by DOA, and occupied by DMVA.

Garner Road Complex – Department of Public Safety – State Highway Patrol – Garner Road.

Motor Fleet and Textbook Warehouse are outside of the Downtown Government Complex. These buildings are located on Blue Ridge Road.

Federal Surplus – The Federal Surplus Warehouse is listed by the SPO database as a total of 70,418 GSF. It is not included in the DOA Downtown Government Complex and is not included in the report.

State Surplus Warehouse is listed by the SPO database as 41,164 GSF. It is not included in the DOA Downtown Government Complex and is not included in the report.

North Carolina Museum of Art – Located on Blue Ridge Road and listed by SPO as Department of Natural and Cultural Resources (DNCR).

State Public Health Lab, constructed 2012, is a Department of Health and Human Services (DHHS) building.

State Crime Lab - Listed by SPO as Attorney General-Justice.

For Natural Gas cost and usage, the database does not include complete information. Several of the smaller buildings have cost data, but do not quantify units of natural gas consumption in therms. Estimates were calculated to express energy in therms, so as to be able to report total btus.