FY 2014 Baseline Report

GREENHOUSE GAS INVENTORY

Prepared by Florida A&M University
Sustainability Institute
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FLORIDA A&M UNIVERSITY
SUSTAINABILITY INSTITUTE

GREENHOUSE GAS INVENTORY REPORT

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Executive Summary

Florida A&M University (FAMU) conducted a greenhouse gas (GHG) inventory in spring 2015 in accordance with guidelines set out by the American College and University Presidents' Climate Commitment (ACUPCC), since renamed the Carbon Commitment. FAMU, along with hundreds of other institutions that are fellow signatories to the Carbon Commitment, expresses its reasons for taking part in the climate compact by stating:

"We believe that colleges and universities must exercise leadership in their communities and throughout society by providing the knowledge, research, practice, and informed graduates to create a positive and sustainable future. Along with other aspects of sustainability, campuses that address the climate challenge by reducing greenhouse gas emissions and by integrating resilience into their curriculum, research, and campus operations will better serve their students and meet their social mandate to help create a vital, ethical, and prosperous civil society." (Secondnature.org)

Energy consumption data, computed in carbon dioxide equivalents, were reported to the ACUPCC through an online portal on May 15, 2015. This report documents the results of the campus-wide inventory and the processes through which information was obtained. The report presents an approximation using best available information of FAMU's greenhouse gas emissions derived from an inventory of fossil fuel sources used for heating, cooling and lighting buildings, operating the campus fleet of vehicles, business air travel, and estimates for commuting by students, faculty, and staff. FAMU's total emissions for the Fiscal Year 2013-2014 were estimated at 118,100 metric tons of carbon dioxide equivalent (MtCO2e). Given significant uncertainties about data accuracy, especially for commuting and air travel, this baseline carbon footprint is considered an unverified estimate. Future inventories will seek to improve upon the data collection and methodology.

Commuting was found to be the biggest source of GHG emissions, contributing an estimated 76 percent of emissions (89,900 MtCO2e), followed by purchased electricity, responsible for 14 percent (16,600 MtCO2e). A lesser proportion of GHG emissions were released through combustion of natural gas to fuel the campus central energy plant (9 percent, 10,600 MteCO2e), followed by a small percentage from operation of FAMU campus vehicles (rounded up to 1 percent), 900 MtCO2e, and air travel (0.5 percent, 600 MtCO2e).

Tracking energy use is a starting point for making management decisions and behavioral changes to achieve the ultimate goal of net zero greenhouse gas emissions. The goal will require improved energy efficiency, behavior change among all campus populations, a shift to renewable, non-carbon based energy sources, and carbon sequestration initiatives or purchase of carbon offsets. By implementing measures that reduce greenhouse gas emissions, the university

will reduce spending for utilities and other energy-related costs and advance other sustainability goals. This report provides a baseline snapshot of FAMU's energy and greenhouse gas profile. It is hoped that it will spur initiatives for curbing greenhouse gas emissions to mitigate climate change and reduce FAMU's expenditures for energy-related costs. Recommendations are provided for some actions steps as well as for improving methods of data collection/processing for future inventories, which must be reported annually. This report will also facilitate the development of the university's Climate Action Plan (CAP).

Introduction

Florida A&M University (FAMU) conducted its first greenhouse gas (GHG) inventory in spring 2015. Completion of the inventory was in fulfillment of the American College and University Presidents' Climate Commitment (ACUPCC), since renamed the Carbon Commitment, to which FAMU became a signatory in January 2014, under Interim President Dr. Larry Robinson. After her inauguration as president in April 2014, Dr. Elmira Mangum established the Sustainability Institute, which was charged with administering FAMU's carbon commitment. The inventory was conducted in Spring 2015 by staff and student interns of FAMU's Sustainability Institute using data for the fiscal year 2014 (July 1, 2013 June 30, 2014).

Multiple campus departments and individuals contributed data for the inventory. The City of Tallahassee Utilities provided electric and natural gas consumption data supplemented by some data from the university's Plant Operations and Maintenance (POM) department.

Background on Greenhouse Gases (GHGs)

A greenhouse gas is any gas that absorbs infrared radiation in the atmosphere, trapping heat in the atmosphere and preventing it from radiating from Earth toward space (http://climate.nasa.gov/causes/). These gases warm the Earth, causing the "greenhouse effect" by absorbing the heat. Greenhouse gases include water vapor, carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone (O3), and fluorinated gases including perfluorinated carbons (PFCs), and hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), sulfur hexafluoride (SF6).

Greenhouse gases are generated through natural processes and through human activities. Natural processes include animal, plant and soil respiration, decomposition and volcanoes.

There has been an increase in atmospheric carbon dioxide levels from 280 parts per million to 402 parts per million in the last 150 years due to industrial activities associated with modernization (https://www.co2.earth/). The main human sources of greenhouse gas emissions are: fossil fuel production and use (burning coal, natural gas and oil), transportation, deforestation, intensive livestock farming, landfills and waste, agriculture, use of synthetic fertilizers and industrial processes like cement and wood products manufacturing (http://www3.epa.gov/climatechange/ghgemissions/global.html).

Although greenhouse gases are generated from a variety of everyday activities, electricity and transportation produce the most GHGs in the United States. Major greenhouse gases from human activity include: carbon dioxide (CO2) 54.7%, methane (CH4) 30%, Nitrous oxide (N2O)

4.9%, Fluorinated gases 0.6% and other gases 9.8% (http://www3.epa.gov/climatechange/ghgemissions/global.html).

Campuses generate greenhouse gases through the course of any energy-related activities, included heating, cooling, lighting, and ventilating buildings, and operating vehicles and machinery. Indirectly, campuses also contribute to greenhouse gas emissions by sponsoring air travel. Members of the campus community release greenhouse gases through fossil-fuel dependent means of commuting. Finally, indirect GHGs are associated with processes used to create the array of products consumed in daily operation of the university.

Inventory Time Frame

FAMU's GHG inventory was conducted from January to April 2015. Data for the fiscal year 2014 (July 1, 2013 June 30, 2014) were used for this baseline audit. Selection of a fiscal year timeframe is in line with the majority of institution data collection and will enable accurate comparisons over time, as well as the potential to examine the correlation between implementation of GHG reduction measures and financial savings.

Boundaries and Campus Characteristics

The inventory uses an operational control approach to define campus boundaries and was determined to be limited to the main campus. The boundary for what constitutes the main campus is defined by the FAMU Campus Planning Office and is the same boundary used during development of the FAMU Master Plan. GHG emissions are calculated for facilities within this boundary that are occupied and or operated by FAMU. All other FAMU properties were excluded from the GHG inventory because of limited or complicated data that would present an undue burden for calculations. Among the excluded properties were: the College of Engineering jointly operated with Florida State University in Tallahassee, FL; the FAMU Center for Viticulture and Small Fruit Research in Tallahassee, FL; the FAMU Research & Extension Center in Quincy, FL; and the FAMU College of Law in Orlando, FL.

The main campus is 423 acres and as of FY 2014, contained approximately 100 buildings comprising about 3.6 million gross square feet. The building stock is aging, with only about 18 percent of buildings constructed between 2005 and 2015.

The FY 2014 campus population consisted of 7,420 full-time equivalent (FTE) students, 633 FTE staff and 1,134 FTE faculty members.

The GHG Inventory Process

The FAMU Sustainability Institute directed and facilitated this baseline GHG inventory process. After creating a plan of work that defined the inventory boundary and selected the reporting period, two interns gathered contact information from the university's directory for potential campus sources. The interns created a contact list then made the necessary calls and sent emails to the persons and departments that were possible resources for data gathering. Finally they composed and sent data requests to the responsible parties. Some data were difficult to extract while others were public knowledge and available on the university's website.

Multiple departments and individuals contributed data for the inventory, including personnel from Plant Operations and Maintenance (POM), Physical Plant, Administrative Services Assistance Program (ASAP), Facilities Planning and Construction, and Parking Services. The City of Tallahassee Utilities also assisted in the development of Scope II by providing energy consumption data. Contacts who supplied data are listed in Appendix 1.

Overview of Results

Six major sources of GHGs were tracked for this baseline inventory. The protocol for reporting GHGs divides these emissions into three "scopes" of influence:

Scope 1 - Direct Emissions or those from sources owned or controlled by the institution and directly related to the operation of the campus. For colleges and universities, Scope 1 is primarily composed of fossil fuel combustion for heating, cooling, and other on-site power generation, including boilers and campus fleet.

FAMU Scope 1 Emission Sources

Campus fleet (gasoline, diesel)

Natural gas boilers at main campus energy plant and satellite locations

Scope 2 - Indirect Emissions from the generation of power or other end-use utilities imported to the institution. If a college or university purchases electricity, steam, hot water, or chilled water, the emissions that were created during its generation and distribution fall under Scope 2.

FAMU Scope 2 Emission Sources

Purchased electricity

Scope 3 - Other indirect emissions that are the result of the institution's activities. The primary sources of Scope 3 emissions are commuting, directly financed air and ground travel for students and staff, paper consumption, and waste processing. Scope 3 reporting is

optional while reporting on Scopes 1 and 2 is mandatory. In this first inventory, reporting of Scope 3 is limited to institution-financed air travel and commuting.

FAMU Scope III Emission Sources

Air travel

Commuting

An overview of results is shown below in Figures 1, 2, and 3, and in Table 1.

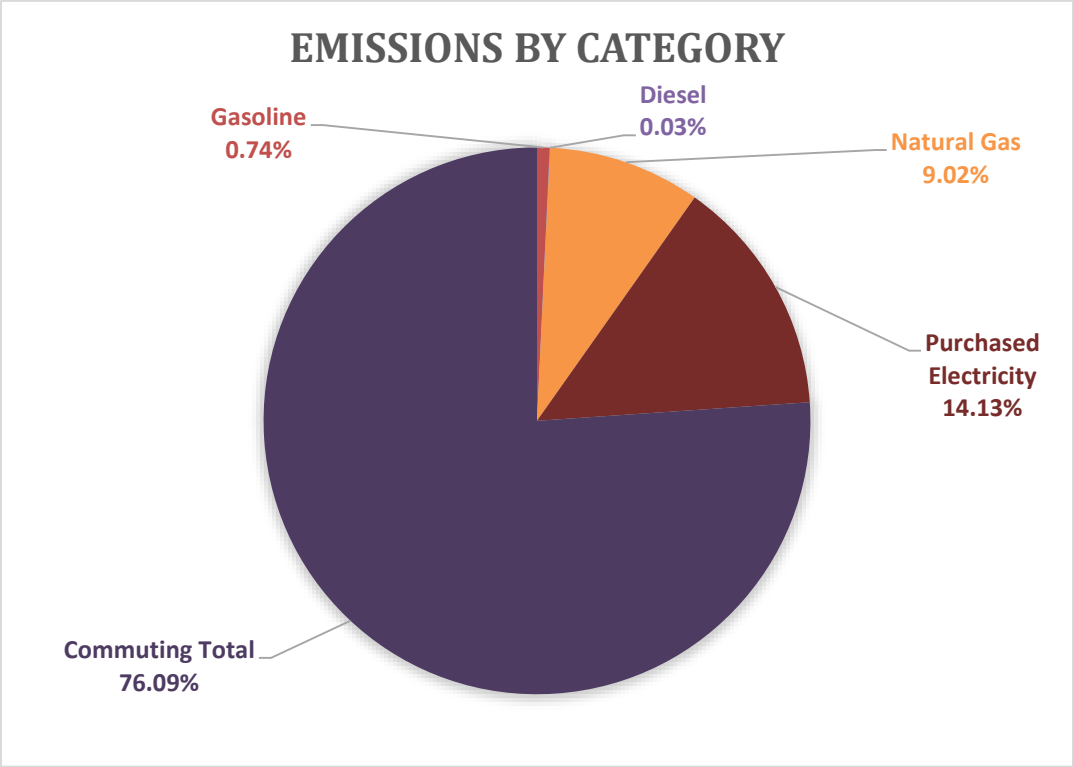


Figure 1. Percentage of FAMU Greenhouse Gas Emissions by Category for FY 14

Table 1. Greenhouse Gases from Six Main Emission Sources at Florida A&M University, Fiscal Year 2014 (July 1, 2013 June 30, 2014)

Category	Total Consumption Units	Adjusted Metric Tons CO2-e* reported to ACUPCC	Percentage of Campus Carbon Footprint
SCOPE 1			
Gasoline	98,812 gallons	870	0.7
Diesel	2,803 gallons	30	0.03
Natural gas	1,985,094 hundred cubic feet (ccf)	10,600	8.98
Scope 1 subtotal		11,500	9.71
SCOPE 2			
Purchased Electricity (kwh)	50,629,349 kilowatt-hours (kwh)	16,600	14.0
Scope 2 subtotal		16,600	14.0
SCOPE 3			
Air travel	1,020,533 air miles	600	0.5
Commuting (students)	61,473 miles	61,500	52.1
Commuting (faculty and staff)	27,900 miles	27,900	23.6
Scope 3 subtotal		90,000	76.2
TOTAL Metric Tons CO2-e		118,100	100

*CO2-E is Carbon dioxide equivalent

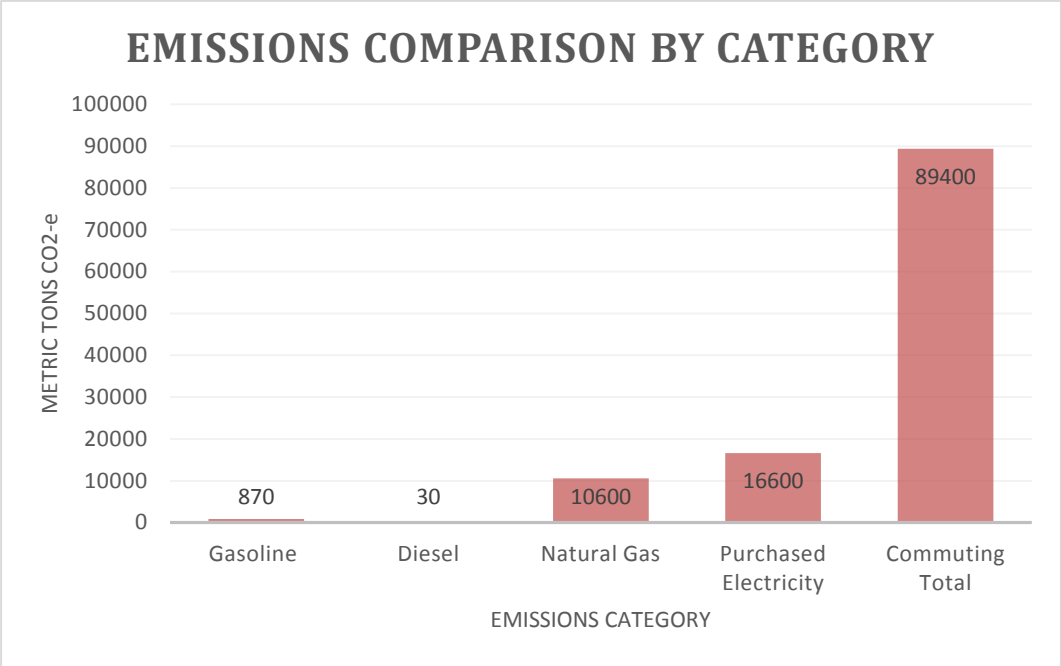


Figure 2. FY 2104 Emissions by Major Campus Sources

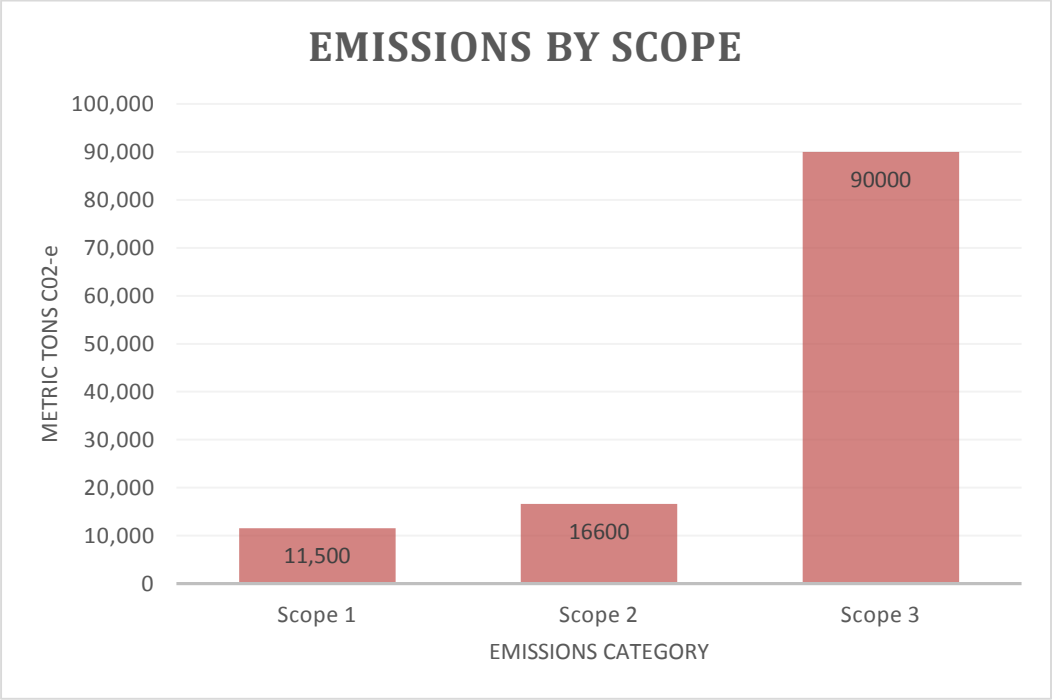


Figure 3. FY 2014 Emissions by Scope

Methods, Findings, and Recommendations for Future Inventories

Scope 1

Scope 1 emissions sources for FAMU were from the campus fleet and from combustion of natural gas on campus. Together, they produce approximately 10 percent of campus greenhouse gas emissions.

Fleet

FAMU is equipped with an on-campus fuel station that supplies all university vehicles including trucks, mowers, golf carts, tractors, and other equipment. The main campus fuel station supplies all university vehicles via 3 tanks: tanks 1 and 2 supply unleaded gasoline and tank 3 supplies diesel. Physical Plant Operations and Maintenance (POM) was the main resource for data on the Campus Fleet. The POM uses Fuelmaster as the fuel management system to monitor fuel consumption and purchasing on campus, and ensure proper entry of fuel consumption values. The POM supplied the fuel bills. The total gallons were summed and the Cool Air Clean Planet (CA-CP) calculator recommended by the Association for the Advancement of Sustainability in Higher Education (AASHE) was used to determine the carbon dioxide equivalent for fleet fuels (http://www.aashe.org/wiki/climate-planning-guide/carbon-footprint-and-emissions-trajectory.php#CleanAirCoolPlanetGHGInventoryTool).

Gasoline. The data for this were gathered from the fuel consumption of campus owned vehicles and trucks. A majority of the vehicles owned by the university use gasoline. Gasoline vehicles account for approximately 98,812 gallons of fuel.

Diesel. This data covers campus owned landscaping equipment, farming equipment, and other vehicles and account for approximately 2,803 gallons of fuel.

Emissions from FAMU's fleet released an estimated 900 MtCO2e in FY 14, making up less than 1 percent of the campus carbon footprint.

Recommendations for Fleet Reporting

While fleet emissions are a small contributor to overall GHG emissions, optimal fleet operation can save money as well as reduce GHGs. To better understand use of this fossil fuel resource, and to devise methods for using fuel more efficiently, additional analysis of data is recommended. It is recommended to use a dashboard available through Fuelmaster and related software to create monthly reports on fuel use by departments and by vehicle class. Currently, Fuelmaster, is used for billing purposes but not for reporting the consumption of the fuel types

by campus departments. Inability to track down fuel use by type for each department means that departments are not analyzing performance of vehicles or tracking its CO2 emissions.

An additional recommendation for fleet is to consider assigning a Facility Management or Engineering class or interns to perform a fleet analysis that examines classes and needs. Analysis can reveal options to optimize the fleet by looking at fleet composition (to "right-size" vehicles, possibly cutting down on trucks when a sedan is sufficient), and to examine fuel economy of vehicles by class and by vehicles to find inefficient vehicles/and drivers. A spreadsheet with all months collated would be useful.

A policy recommendation is to devise and implement an appropriate no-idling policy. Finally, a vehicle replacement policy can be developed and alternative fuel vehicles can be considered.

A POM liaison should be assigned for transmitting fuel usage routinely for the annual GHG inventory reporting.

Natural Gas

FAMU has on-site stationary boilers that combust natural gas. The majority of the natural gas is used to produce steam and control water temperature. A recent effort consolidated gas distribution into fewer meters as a major energy saving improvement. The main location for combustion is the central utility plant on Wahnish Avenue. A number of satellite boilers still exist south of Osceola Street to serve areas too distant to be served from the central plant. Natural gas is purchased from the City of Tallahassee (CoT) Utilities. At present, we have 22 natural gas accounts with a reported consumption of 1,985,094 ccf. To obtain the carbon dioxide equivalent for emissions, a factor of 53.06 kg CO2 per MMBTU was used, as recommended by the Climate Registry for its 2015 default emission factors (https://www.theclimateregistry.org/). The rounded figure reported for overall CO2-E from natural gas combustion was 10,600 MtCO2e, making up about 9 percent of campus emissions.

Recommendations for Natural Gas Reporting

FAMU needs to develop a reporting system for the Carbon Commitment that is not dependent upon the CoT utilities. At the time this inventory was conducted, FAMU was not using online billing, making data collection dependent on paper records and hand entries of data to spreadsheets. Electricity as well as natural gas data are available online from a CoT online portal; however, data are only available for a one-year period. An effort to create an automated, systematic collection of consumption data is recommended.

Continued efforts for campus-wide improvements in energy efficiency in operations and end use can help to reduce natural gas usage. A POM liaison should be assigned for GHG inventory reporting.

Scope 2

Electricity

Scope 2 emissions sources for FAMU were from purchased electricity. Electricity is purchased from the CoT Utilities. POM provided spreadsheets with data. POM's objective in its process for handling billing is focused upon assigning the correct billing to internal departments and campus organizations as opposed to tracking energy consumption. Multiple accounts (in the hundreds) were presented by POM but extracting active accounts proved difficult. Location of the kilowatt hour consumption metric was therefore a challenge. Sustainability Institute interns created a spreadsheet and removed accounts that were off the main campus from the bills. Seven accounts remained. These accounts fall into various billing categories for Service Agreements.

Ultimately it was necessary to seek records from the CoT to obtain kilowatt hour consumption records.

Staff at the CoT graciously assisted with providing data for the 2014 fiscal year as was needed for our reporting period. They also confirmed the actual number of active accounts. A total of 50,629,349 kwh of electricity was consumed. The CA-CP calculator was used to compute associated greenhouse gas emissions amounting to a rounded reported total of 16,600 MtCO2e, making up 14 percent of total GHG emissions.

Recommendations for Purchased Electricity Reporting

As is the case for natural gas, to assist with routinely tracking electricity consumption, an improved record keeping system is needed for consumption as well as billing. A POM liaison should be assigned for GHG inventory reporting covering electricity consumption. FAMU has an energy monitoring network on campus, the "Central Energy Network." Communication of energy consumption via this network may be possible. Real-time reporting is possible for the future and is supported by POM.

An inventory of accounts can be conducted to determine whether any inactive accounts remain and should be closed.

Scope 3

Of the many areas of possible Scope 3 emissions to report, for this initial GHG inventory, FAMU limited reporting to air travel and commuting. The overall total reported for Scope 3 emissions was 90,000 MtCO2e.

Air Travel

Air travel was calculated for university-authorized travel by faculty, staff and students.

The Administrative Services Assistance Program (ASAP) processes travel authorization request (TAR) forms and provided data that were used to estimate total air miles authorized or funded by FAMU. The air travel data turned out to be the most difficult to extract from the FAMU database because the TAR forms do not provide the necessary details.

Determining whether travel was by air or other mode proved difficult, as well as determining destinations and origins of flights.

Calculations of air miles were made by SI interns using spreadsheets obtained from ASAP personnel based on judgment from reviewing travel details. The best attempt was made to distinguish air from ground travel and to calculate destinations. An estimated 1,020,533 air miles were traveled in FY 14. Applying a 2015 Climate Registry conversion factor of 53.06 kg CO2 per MMBTU (https://www.theclimateregistry.org/), the resulting GHG total was 600 MtCO2e. However, it must be noted that a large margin of error is possible due to having to make judgments calls on travel specifics.

Recommendations for Air Travel Reporting

To improve accuracy and efficiency in future GHG reporting, it is recommended that discussion take place between ASAP and the Sustainability Institute regarding the best ways to improve the reporting process. It may be possible to revise the TAR to include a check box for air travel and point of origin and destination. Alternatively, instructions to requesters could be improved to request more detailed reporting on air travel.

Commuting

The Carbon Commitment offers different ways to estimate commuting data. An electronic survey was administered in order to estimate the number of miles travelled during the time period in different modes of travel by various campus populations: students, faculty, and staff.

The survey (developed in Qualtrics by the Office of University Assessment) was administered in March and April 2015, using a non-random sample of respondents. The Sustainability Institute

secured a research Institutional Review Board exemption for the purposes of this survey and distributed it via FAMUINFO (university-wide email list) and through other channels. A total of 563 respondents completed the survey. (See Appendix 2 for the survey.)

As shown in Table 2, the response rate from students was a low 3.4 %; whereas a higher response rate was received from faculty, and the best response rate from staff. The commuting study was performed using convenience sampling versus a representative sample and thus a large margin of error might be expected.

Table 2. Response numbers and rates for FAMU Campus Populations

	FAMU Population	Survey Responses	Response Rate %
Staff	633	133	21
Faculty	1,134	98	8.6
Students	9,049	307	3.4
Total	10,816	538	4.97

Respondents were asked to select their mode of transit, distance, number of trips per day, and number of trips per week. Averages for the number of miles traveled per week for various modes by the different populations were then calculated. Results were then applied to the overall populations to estimate the total number of miles traveled. CA-CP version 7 conversion factors were used for average miles per gallon (24.17 for autos and 31.93 for bus travel, and 48 for carpool and shuttle). Emission factors from the Climate Registry (53.06 kg CO2 per MMBTU) were used to obtain total carbon dioxide. Student commuting amounted to 61,500 MtCO2e; staff and faculty commuting totaled 27,900 MtCO2e.

As shown in Table 3, 57 percent of the student population drove alone to campus, 19 percent walked, 15 percent took the bus, 7 percent carpooled or used a shuttle, and 1 percent bicycled. The average distance from campus for students who took the survey was 5 miles. Staff and faculty had higher rates of driving alone; they also lived an average of 12 miles away from campus.

Table 3. Modal Split for FAMU Campus Commuting

Mode of Travel	Students %	# Students in mode	Staff & Faculty %	# Staff & Faculty
Carbon-based modes				
Drive Alone	57	5,838	87	1,537
Bus	15	1,537	1	18
Bike	1	102	2	35
Carpool & shuttle	7	716	8	141
Non carbon-modes				
Walk	19	1,946	1	18
Other	1	102	1	18
Total	100	10,241	100	1,767

The carbon footprint associated with student commuting as opposed to faculty and staff is shown in Figures 4 and 5. Based on proximity of students to campus and their greater acceptance of non-carbon based modes of transit and higher bus ridership, it appears there is a good opportunity to reduce carbon-based modes by focusing on student transport, although measures can also be taken for faculty and staff.

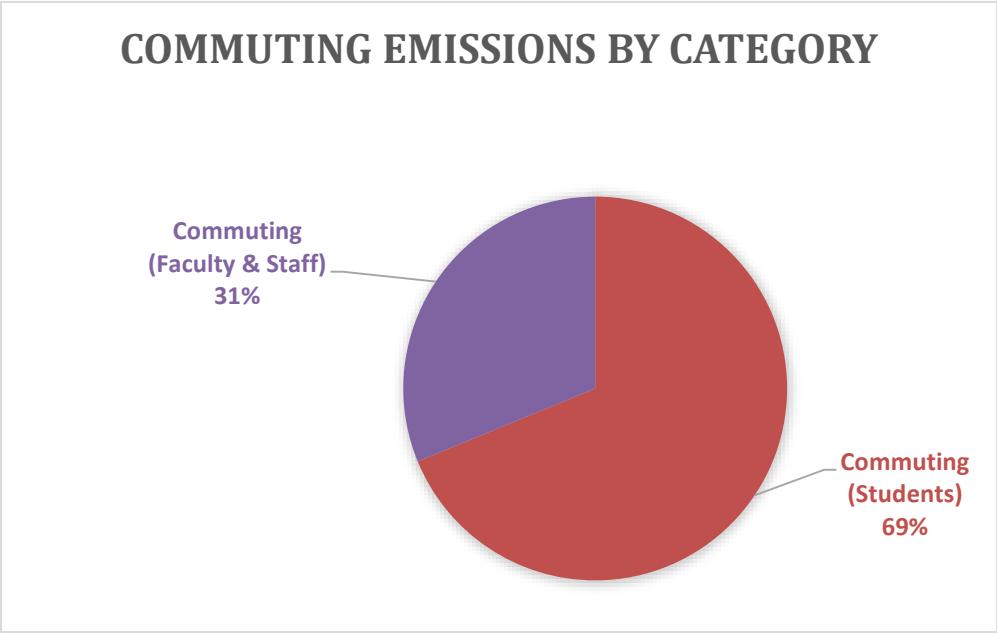


Figure 4. Commuting by Students and Faculty/Staff (combined)

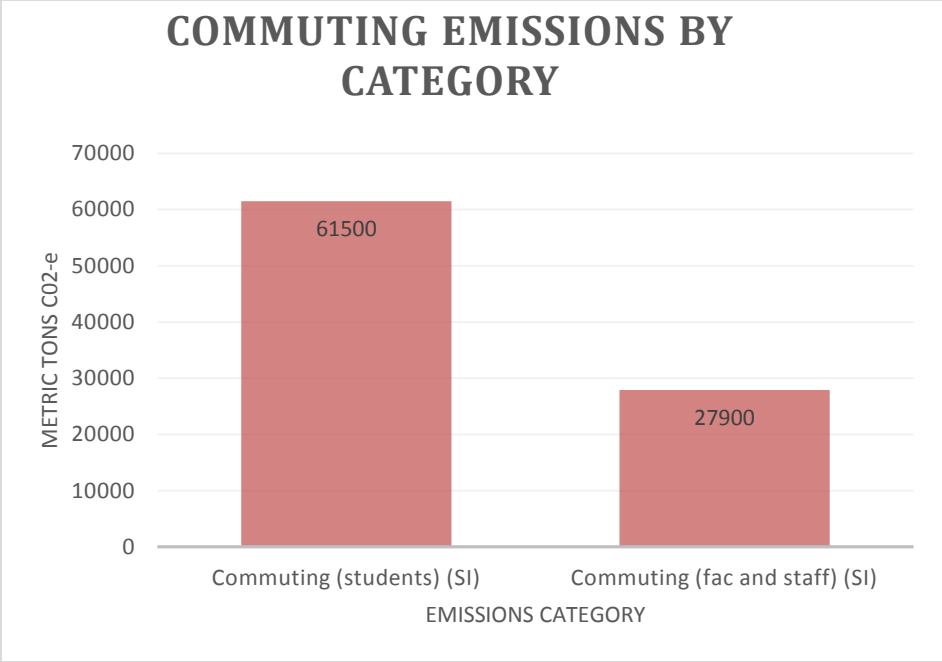


Figure 5. Commuting by Students and Faculty/Staff (combined)

Recommendations for Commuting & Commuting Reporting

As the largest contributor to the university's carbon footprint, transportation is the area in which improvements would be most impactful. These should include policy changes in cooperation among the local mass transit authority, STAR Metro, local planning departments and FAMU. Improvements would include enhanced bus service to campus, carpooling incentives, provision for bicycles, an awareness campaign and incentives to carpool or use non-carbon modes of transit.

A future survey can be designed to capture data more efficiently. For example, Qualtrics has a feature to allow respondents to use a map to indicate their place of residence, which would yield more accurate distance data.

Conclusion

As a signatory to the Carbon Commitment, FAMU has made an important obligation to undertake measures to work toward a climate neutral campus. The University satisfied one of its obligations with completion of the first GHG inventory, submitted May 15, 2015. Tracking GHGs is a necessary tool for assessing the current status and considering ways to reduce emissions. FAMU will be incorporating suggestions for GHG reductions in a Climate Action Plan to be submitted in May 2016.

Under the Carbon Commitment, FAMU is required to submit annual GHG inventories. Broad cooperation across the campus is necessary to achieve this goal each year. Suggestions for improving the process can be submitted to sustainability@famu.edu.

References

The Carbon Commitment http://secondnature.org/climate-guidance/the-commitments/#Carbon_Commitment

Climate Registry https://www.theclimateregistry.org/

US EPA http://www3.epa.gov/climatechange/ghgemissions/

NASA http://climate.nasa.gov

Acknowledgments

The Greenhouse Gas (GHG) inventory was conducted from January to April 2015 under the direction of the Florida A&M Sustainability Institute Chief Sustainability Officer Abena Ojetayo and Sustainability Program Coordinator Kathryn Ziewitz. Agronomy graduate Thalika Saintil was the lead inventory researcher, with engineering student Altagracia Cesaire assisting. Contributing to production of this report were undergraduate students Phylesia Fralin, Andrea Pugh, and graduate student Simone English.

Multiple departments and individuals contributed to the realization of this project, including: from Plant Operations and Maintenance (POM): Mr. Clinton Smith, Ms. Mattie Bryant, Ms. Sherry Bryant, Mr. Delvert Campfield, and Ms. Stephanie Fisher. From Administrative Services Assistance Program (ASAP), Mr. Lee Parker; from Business and Auxiliary Services, and Chasity Brown assisted. Ms. Brandi Newkirk from the Office of University Assessment (OUA) provided assistance in developing the electronic survey.

Beyond FAMU, Mr. Tom Gillman, of the City of Tallahassee provided utility data spanning the necessary time period for natural gas and electricity.

Appendix 1. Contacts and Data Sources

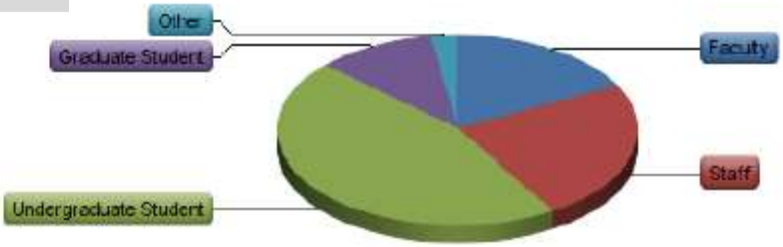
Appendix 1. Contacts and Data Sources Consulted for FY 2014 GHG Reporting

Emission Source	Contact	Title & Department	E-mail	Phone Number	Data Source
Gasoline	Mattie W. Bryant	Coordinator of Accounting, POM	Mattie.Bryant@famu.edu	850-599-8034	Internal FAMU records
	Sherry Bryant	Utilities Information, POM	Sherry.bryant@famu.edu	850-599-3250	Internal FAMU records
	Delvert Campfield	Supervisor of Fleet Maintenance,	Delvert.Campfield@famu.edu	(850) 599-8036	Internal FAMU records
	Stephanie Fisher	Interim Coordinator of Purchasing,	Stephanie.Fisher@famu.edu	(850) 599-8045	Internal FAMU records
Diesel	Mattie W. Bryant	Coordinator of Accounting, POM	Mattie.Bryant@famu.edu	850-599-8034	Internal FAMU records
Natural Gas	Mattie W. Bryant	Coordinator of Accounting, POM	Mattie.Bryant@famu.edu	(850) 599-8034,	Utility bills (hard copy)
	Sherry Bryant (utilities info)	Administrative Support & Human Resources, POM	Sherry.bryant@famu.edu	(850) 599-8034	Utility bills (hard copy)
	Tom Gillman	Key Account Representative, Utility Services, City of Tallahassee	Tom.gillman@talgov.com	(850) 891-6122	Spreadsheets
Purchased Electricity (kwh)	Sherry Bryant	Administrative Support	sherry.bryant@famu.edu	850-561-8035	Utility bills (hard copy)
	Tom Gillman	Key Account Representative, Utility Services, City of	Tom.gillman@talgov.com		Spreadsheets
Air Travel (miles)	Lee Parker	Management Analyst, ASAP	lee.parker@famu.edu	850-412-7316	Travel Authorization Requests (TAR)
	Chasity Brown	Business Management Analyst, Business and Auxiliary Services		(850) 599-3090	
Commuting (Survey)	Brandi Newkirk	Coordinator Academic Support Services, Office of University	Brandi.newkirk@famu.edu	(850) 412-5266	

Appendix 2. Commuting Survey

The following survey was administered by the Office of University Assessment on behalf of the above mentioned department. The survey was administered from March 19, 2015 through April 16, 2015. A total of N=563 participants completed the survey. The results provided in this report were generated using the Qualtrics Survey Software.

1. Are you?

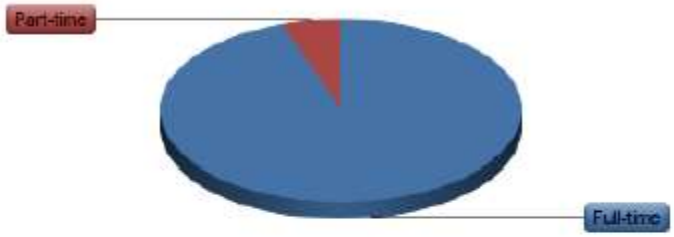


#	Answer		Response	%
1	Faculty		98	17%
2	Staff		134	24%
3	Undergraduate Student		257	46%
4	Graduate Student		60	11%
5	Other		14	2%
	Total		563	100%

Other
RETIREE
Faculty Administrator
Pharmacy Student
Law Student
Post-bacc student and OPS FAMU Staff
Administrator
alumnae
Adjunct Professor

Statistic	Value
Min Value	1
Max Value	5
Mean	2.57
Variance	0.96
Standard Deviation	0.98
Total Responses	563

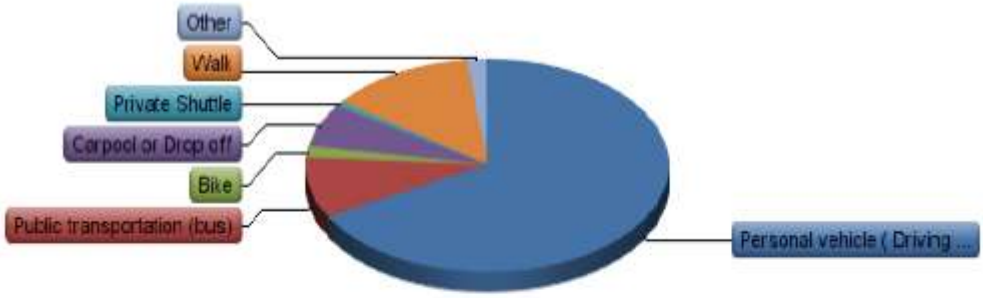
2. If student, faculty or staff, are you?



#	Answer		Response	%
1	Full-time		478	95%
2	Part-time		27	5%
	Total		505	100%

Statistic	Value
Min Value	1
Max Value	2
Mean	1.05
Variance	0.05
Standard Deviation	0.23
Total Responses	505

3. How do you travel to campus?

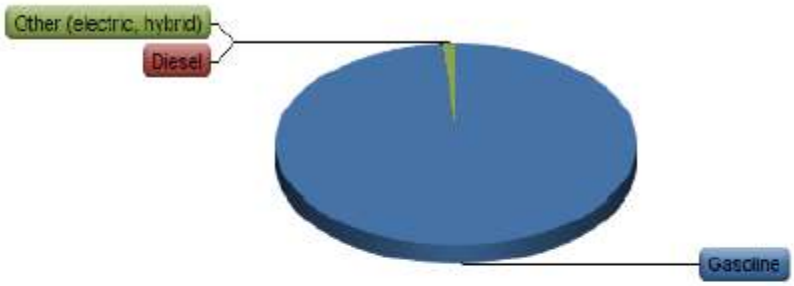


#	Answer		Response	%
1	Personal vehicle (Driving mostly alone)		422	76%
2	Public transportation (bus)		58	10%
3	Bike		11	2%
4	Carpool or Drop off		41	7%
5	Private Shuttle		5	1%
6	Walk		82	15%
7	Other		12	2%

Other
FAMU Vehicle
Live on campus
I live on campus. but have a vehicle
I live on campus.
Sun Rail (1st Semester)
Scooter
Many
I Stay On Campus
live on campus

Statistic	Value
Min Value	1
Max Value	7
Total Responses	556

4. If you have a personal vehicle, what type of fuel do you use?

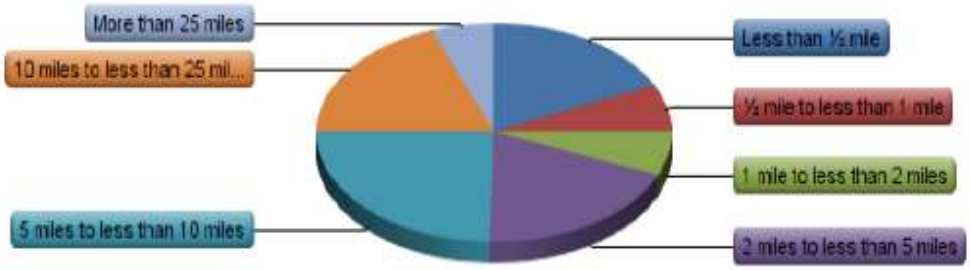


#	Answer		Response	%
1	Gasoline		385	99%
2	Diesel		0	0%
3	Other (electric, hybrid)		5	1%

Other (electric, hybrid)
Ecosystem Car
Hybrid
Electric
hybrid
hybrid

Statistic	Value
Min Value	1
Max Value	3
Total Responses	389

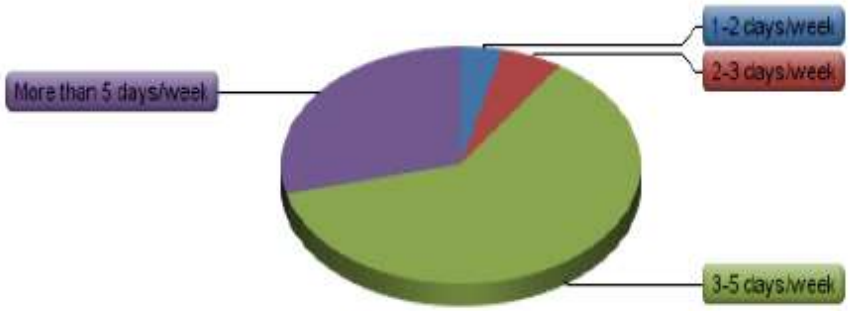
5. How far do you live from campus?



#	Answer		Response	%
1	Less than ½ mile		99	18%
2	½ mile to less than 1 mile		39	7%
3	1 mile to less than 2 miles		36	7%
4	2 miles to less than 5 miles		104	19%
5	5 miles to less than 10 miles		136	25%
6	10 miles to less than 25 miles		106	19%
7	More than 25 miles		32	6%
	Total		552	100%

Statistic	Value
Min Value	1
Max Value	7
Mean	4.06
Variance	3.50
Standard Deviation	1.87
Total Responses	552

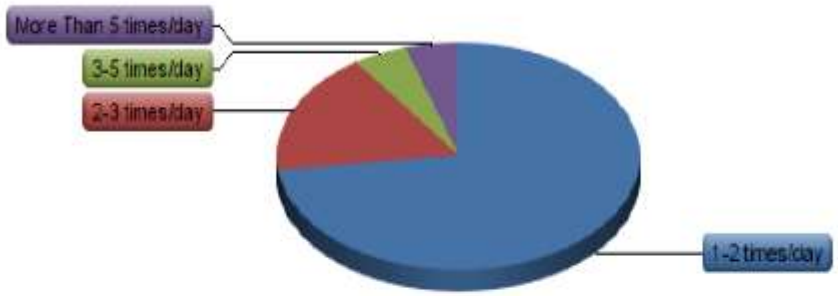
6. On average, how often do you travel to campus in a week?



#	Answer		Response	%
1	1-2 days/week		21	4%
2	2-3 days/week		30	5%
3	3-5 days/week		337	62%
4	More than 5 days/week		159	29%
	Total		547	100%

Statistic	Value
Min Value	1
Max Value	4
Mean	3.16
Variance	0.47
Standard Deviation	0.69
Total Responses	547

7. On a typical day, how many trips do you make to campus?



#	Answer		Response	%
1	1-2 times/day		395	73%
2	2-3 times/day		95	18%
3	3-5 times/day		26	5%
4	More Than 5 times/day		26	5%
	Total		542	100%

Statistic	Value
Min Value	1
Max Value	4
Mean	1.42
Variance	0.63
Standard Deviation	0.79
Total Responses	542