

# LAGRANGE COLLEGE

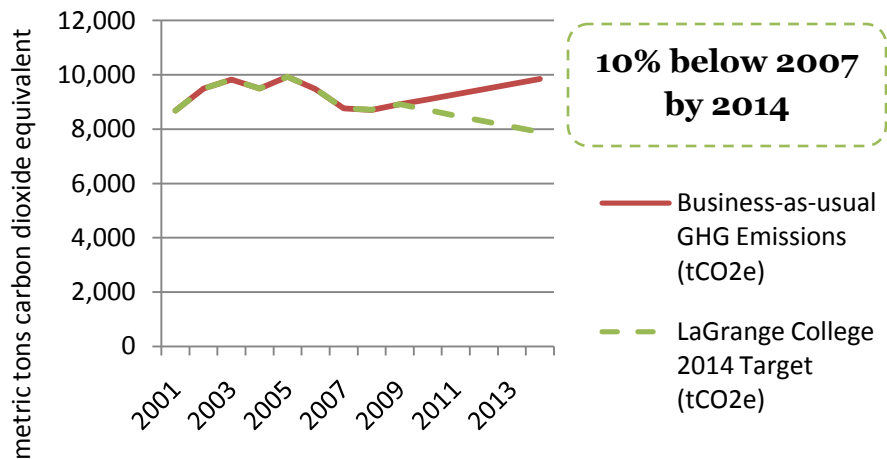
## 2009 CLIMATE ACTION PLAN

### EXECUTIVE SUMMARY

This Climate Action Plan fulfills the latest step in the American College and University Presidents Climate Commitment to which LaGrange College is a signatory. It provides a road map of how the College will cost-effectively reduce greenhouse gas emissions 10% over the next five years compared to a 2007 baseline.

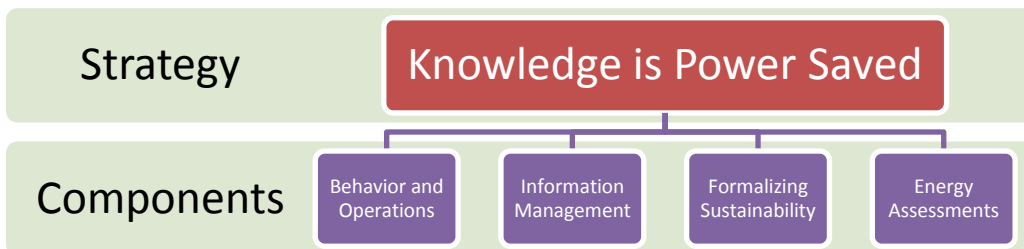
LaGrange College's greenhouse gas emissions, 75% of which come from electricity and natural gas consumption, rose from 2001 to 2006 and have steeply declined since then, coincident with major energy upgrades to campus facilities. Going forward, the CAP Committee has set a target for reducing greenhouse gas emissions as depicted in the figure to the right.

**Business-as-Usual and LaGrange College Target GHG Emissions**



The overarching strategy that LaGrange College will pursue to reduce greenhouse gas emissions is dubbed “Knowledge is Power Saved” due to its focus on increasing the quality and flow of energy-related information. Through various specific measures like optimizing summer building scheduling and providing monthly energy performance reports to key staff, LaGrange College can reduce greenhouse gas emissions and achieve excellent financial returns on the required investments. Including all recommended measures, it is estimated that, for a total upfront cash cost of \$47,900,

LaGrange College can avoid approximately \$63,000 in annual energy costs.



## INTRODUCTION

In compliance with the American College and University Presidents Climate Commitment, this Climate Action Plan provides a road map for how LaGrange College will reduce greenhouse gas emissions in the coming years. The Plan focuses on the near term and takes a pragmatic approach, seeking to reduce greenhouse gas emissions in the most cost-effective manner. Designed in light of LaGrange College's unique strengths, weaknesses, opportunities and threats, the Plan follows a cohesive strategy to improve knowledge and understanding around energy usage and sustainability. This strategy, dubbed "Knowledge is Power Saved", will be implemented through various specific measures that require low upfront investment but have the potential to yield considerable financial savings in the form of lower utility bills. While reducing utility costs, the Plan intends to reduce campus greenhouse gas emissions 10% by 2014 compared to a 2007 baseline.

## CAMPUS EMISSIONS

### BASELINE GHG EMISSIONS

Academic year 2007 – 2008 is presently the only year for which LaGrange College has conducted a complete greenhouse gas inventory. In the course of the CAP development process, the Committee decided to shift the temporal boundary for future inventories from the academic year to the calendar year. For this Climate Action Plan, calendar year 2007 is selected as the baseline year. Non-energy greenhouse gas sources are assumed to be the same as in the inventory conducted for the 2007-2008 academic year, and energy emissions have been adjusted to the calendar year. LaGrange College's total GHG emissions for calendar year 2007 were **9,743 metric tons of carbon dioxide-equivalent (tCO<sub>2</sub>e)**. A new GHG inventory for calendar year 2007 is in the process of being created for upload to the ACUPCC reporting site.

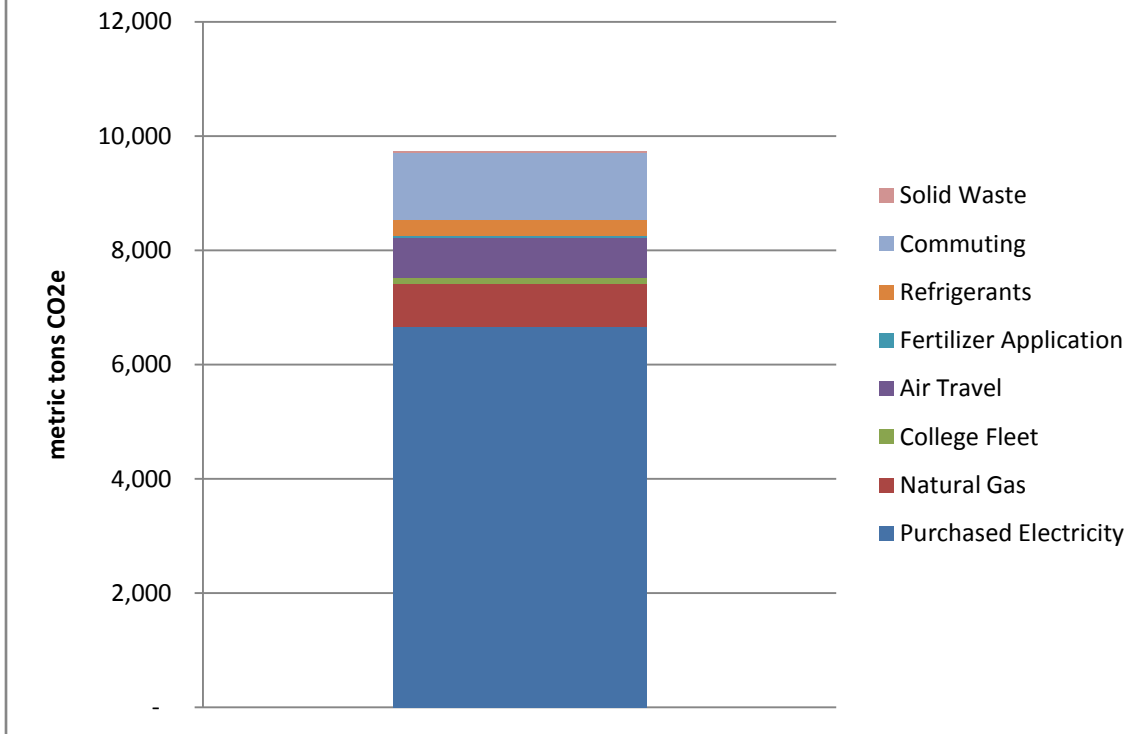
### GHG INVENTORY AND BASELINE

LaGrange College's greenhouse gas inventory includes the following emissions sources:

- Purchased electricity
- Natural gas
- College fleet
  - Faculty commuting
  - Staff commuting
  - Student commuting
- Air travel
  - Faculty/staff business travel
  - Student interim travel – Study Abroad
- Agricultural - synthetic fertilizer use
- Solid waste (landfill)
- Refrigerant use (HCFC – R-22)

Total campus emissions were as depicted below, with electricity and natural gas comprising approximately 75% of total campus emissions:

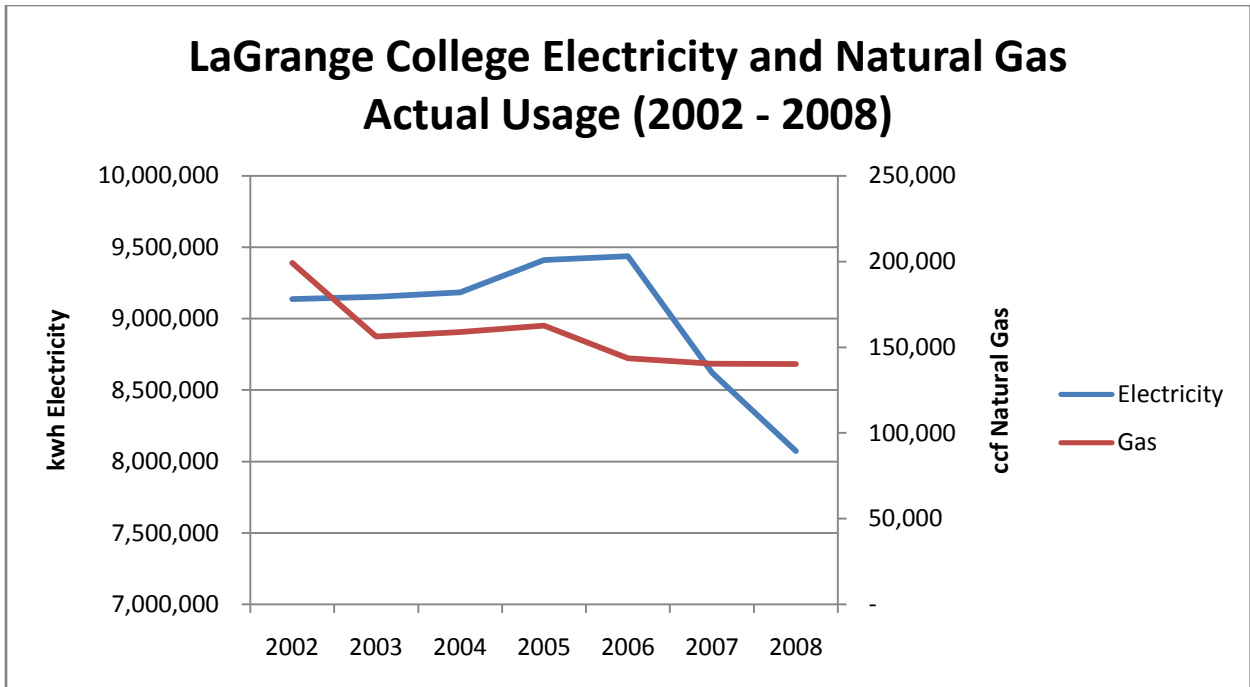
## 2007 LaGrange College Greenhouse Gas Emissions by Source



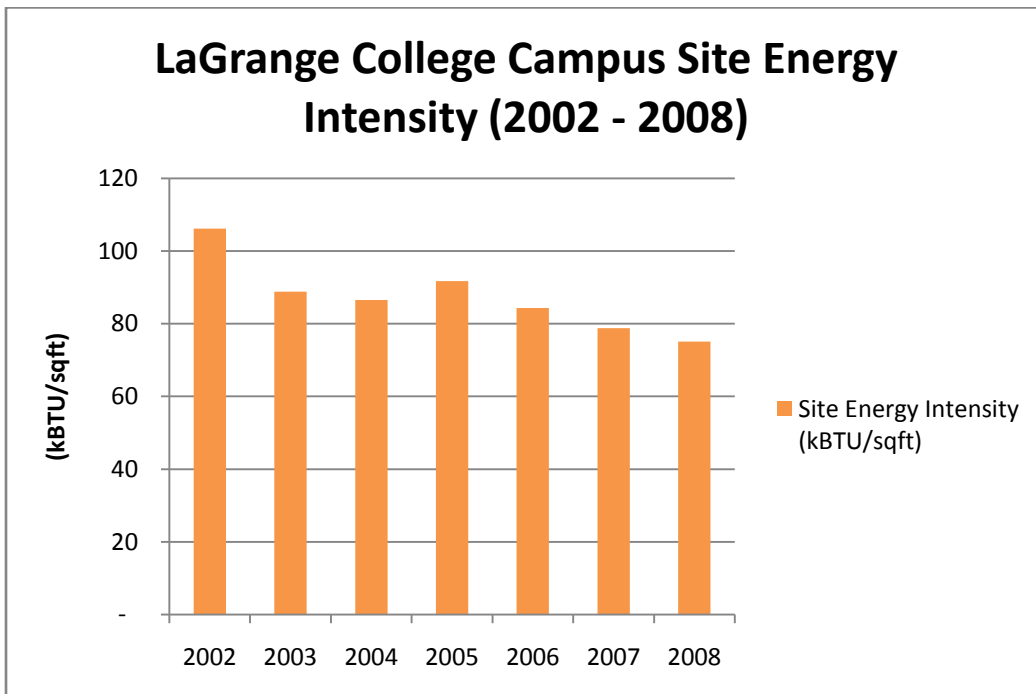
### EMISSIONS TRAJECTORIES

Because they comprise 75% of total GHG emissions, energy consumption emissions in the form of natural gas and electricity are the focus for mitigation in this 2009 Climate Action Plan. Indeed recent sustainability efforts at LaGrange have centered on reducing energy usage through extensive retrofits of existing buildings. These retrofits, conducted via performance contract with an energy service company, broke ground in July 2006 and were completed in August 2007. Additionally, in late 2008 LaGrange campus saw the addition of a 45,000 square foot library that is on its way to becoming LEED-NC™ Silver-certified.

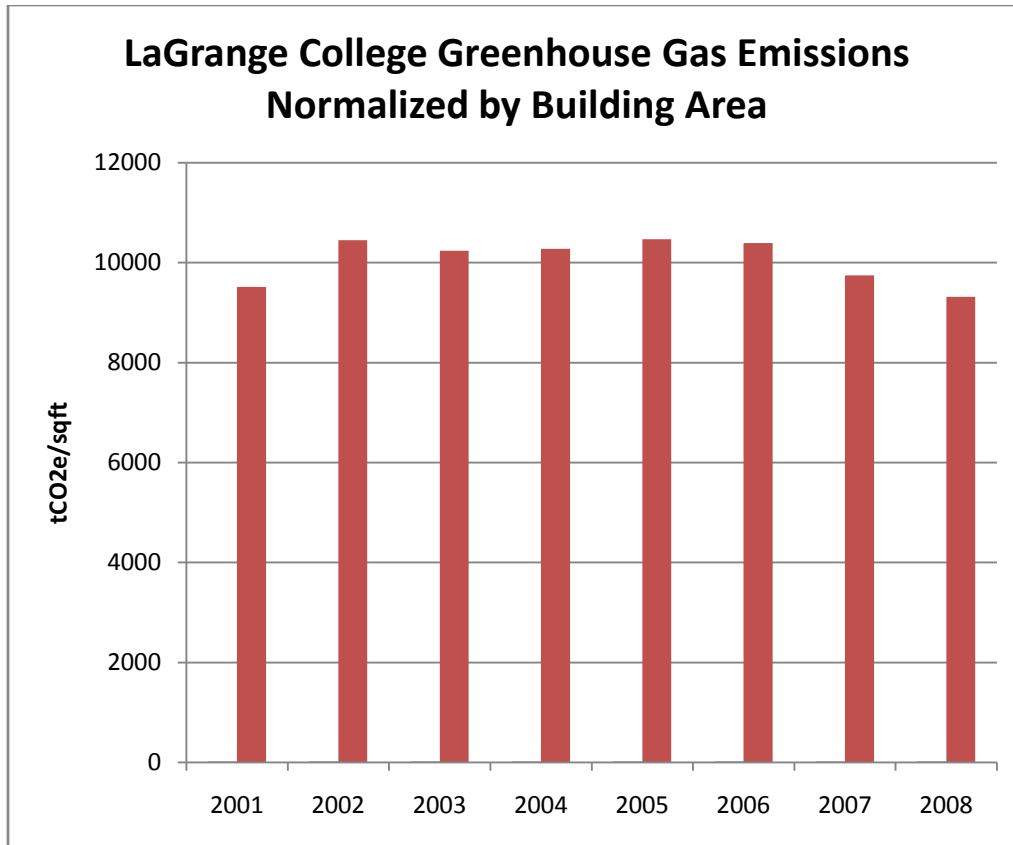
These broad-reaching efforts have resulted in significant electricity and natural gas savings for the College. Unadjusted historical electricity and natural gas usages are depicted below.



This downward trend is even more impressive when considered in the context of campus growth. In 2008, LaGrange College's site energy intensity was approximately 75 kBTU/sqft, a little more than half the national average site energy intensity of 120 kBTU/sqft from the Energy Information Administration's 2003 Commercial Building Energy Consumption Survey. LaGrange College's declining site energy intensity over the past eight calendar years is depicted in the figure below.

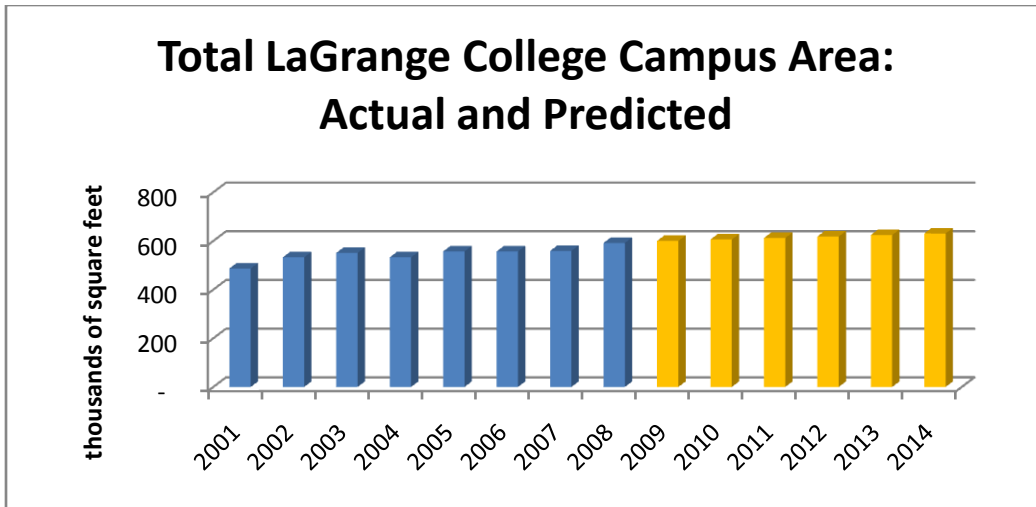


Correspondingly, site greenhouse gas emissions intensity normalized by total building floor area, a figure which was growing (annualized rate of 2.03%) from 2001 to 2004, has fallen steadily over the past four calendar years.



#### FUTURE EMISSIONS TRAJECTORIES

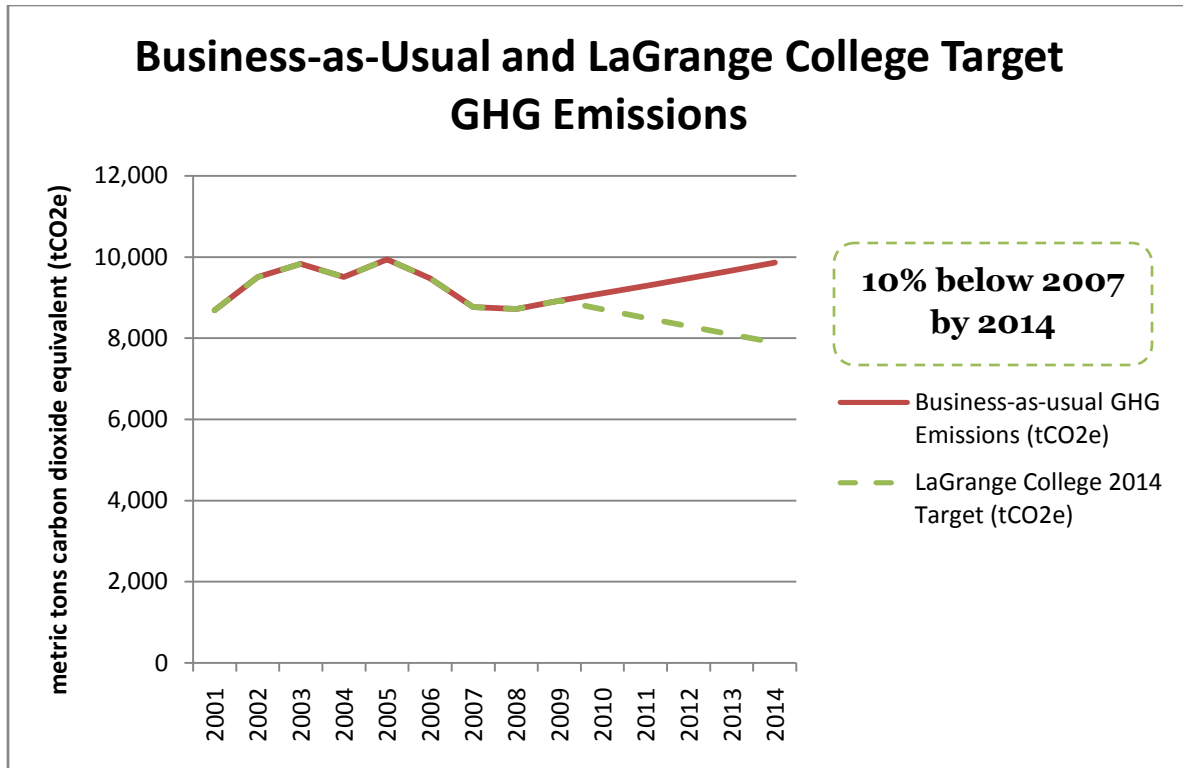
Under a “Business-as-usual” scenario, campus emissions should be expected to grow over the coming years. Reasons for this include campus growth from new buildings and existing building expansions as well as so-called “energy creep”, in which the addition of new loads and the aging of equipment cause energy use to “creep” upwards. Based on informed estimates, the Committee assumes that campus area will grow by 1% per year for the foreseeable future. This is less than the historical average growth rate of the past six years of 2.6%. However the conclusion of several building expansions, the addition of a new 45,000 square foot library and the current economic climate make a lower growth rate of 1% much more likely than continued 2.6% growth.



#### CLIMATE ACTION PLAN EMISSIONS TARGET

As mentioned previously, LaGrange College is facing a highly unpredictable future. During the writing of this Climate Action Plan, the Committee saw the change to a new College President and the departure of many senior College officials. Simply predicting what the College will generally look like in the coming decades would be an immense challenge. For this reason the CAP Committee chose to commit to an ambitious but achievable short term goal: *10% total emissions reduction, including all campus emissions sources, by calendar year 2014 from a calendar year 2007 baseline*. Importantly, this short term goal would keep the College on track to meet the climate science-recommended goals of 30% emissions reduction by 2020 and 80% emissions reduction by 2050. Further, this short term target will motivate the College to begin implementing emissions reduction measures immediately.

The National Wildlife Foundation's Campus Ecology program recommends 2% per year reduction below a 2005 baseline. Because LaGrange College's greenhouse gas emissions were lower in 2007 than 2005, LaGrange's target is even more ambitious than that proposed by the National Wildlife Foundation.



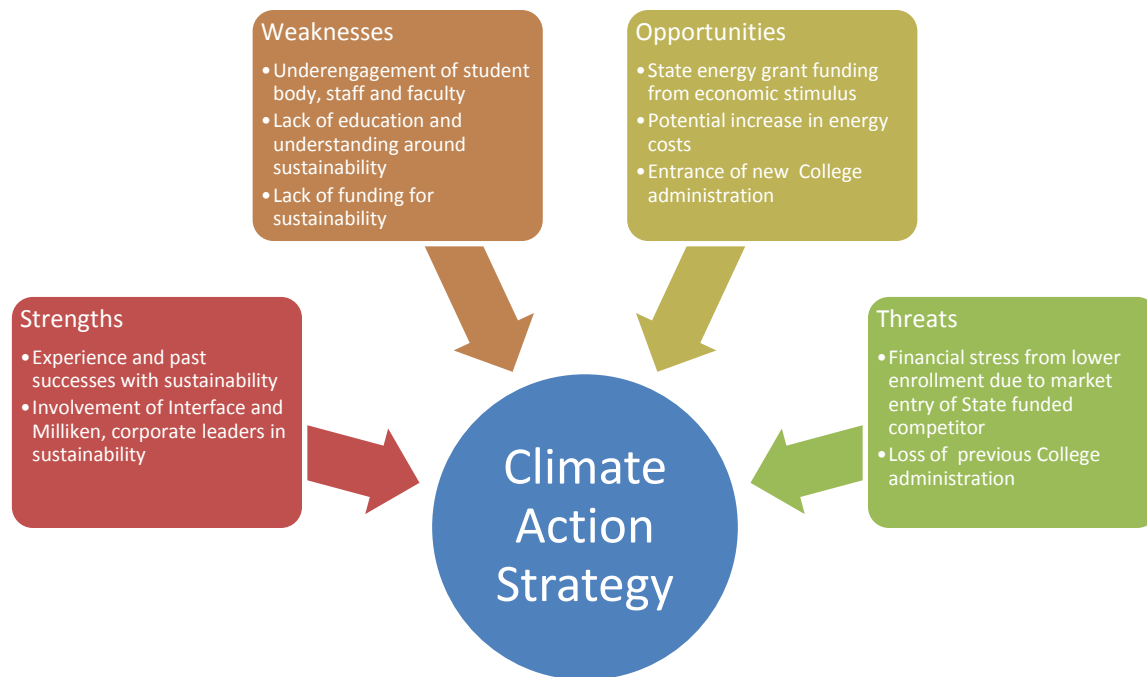
The purpose of the Climate Action Plan is to reduce campus greenhouse gas emissions with the ultimate aim of achieving net zero emissions. LaGrange College’s initial target of 10% below 2007 levels by 2014 puts the College on track to achieve this. However, the Committee has not set specific greenhouse gas targets beyond 2014. Rather than spend the Committee’s limited time speculating on long term emissions trajectories or the decade in which climate neutrality will be achieved, the Committee chose to focus on a short-term target. If the Committee can increase the level of knowledge and understanding around sustainability, rally the campus around an ambitious but achievable goal, and meet this goal, the foundation will be laid for eventually achieving climate neutrality.

## MITIGATION STRATEGIES

In discussing mitigation of campus greenhouse gas emissions, the Committee found it useful to distinguish between climate action ‘strategy’ and ‘measures’. ‘Measures’ as defined by the Committee are specific plans and actions to achieve a predicted amount of emissions reductions, such as leasing natural gas buses instead of diesel buses. Strategy, on the other hand, was used to denote the high-level approach to achieving greenhouse gas reductions. Strategy is a guiding philosophy within which individual measures should fit. Therefore, in the ‘Mitigation Strategies’ section, high level strategy is discussed first and individual measures are discussed second.

## CLIMATE ACTION STRATEGY

The CAP Committee examined LaGrange College’s unique Strengths, Weaknesses, Opportunities and Threats (SWOT) to inform the development of the College’s high-level strategy for climate action. The figure below depicts abbreviated results of this analysis.

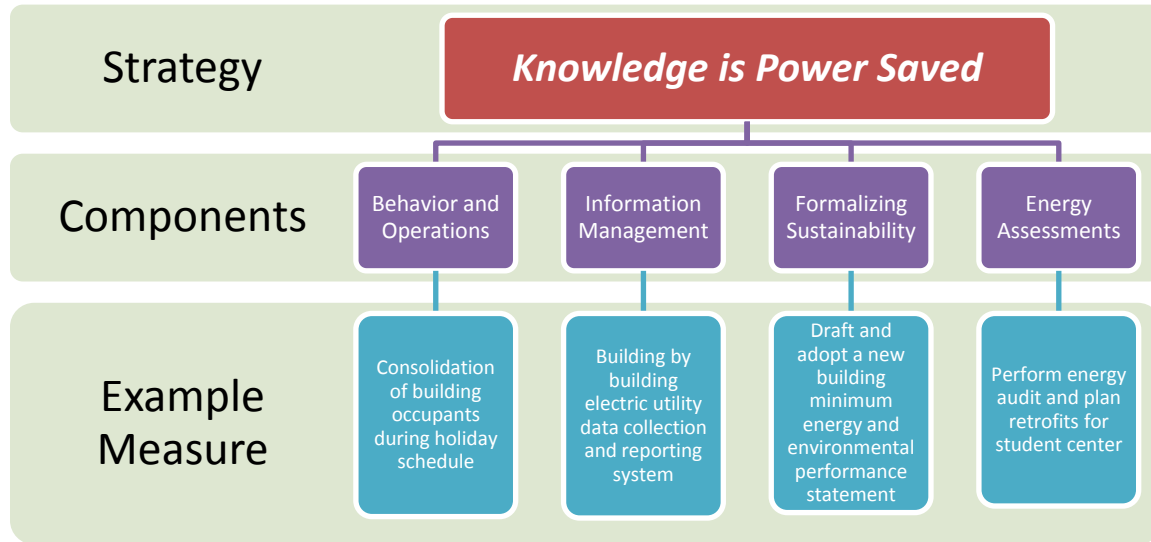


During the SWOT analysis process, the Committee returned to ‘underengagement’ of staff, faculty and students as a major weakness. At the same time, it was realized that this represents a major leverage point for energy savings. If knowledge and understanding of conservation behavior could be expanded, this perceived weakness could be turned into an opportunity. This insight led the CAP Committee to the conclusion that the near-term climate action plan had to be focused on increasing the quality, flow and uptake of sustainability-related information. From this LaGrange College’s CAP Committee decided on a climate action strategy summarized as follows: *Knowledge is Power Saved.*

From monthly building-specific energy performance reports to simple signage around campus, increased knowledge around sustainability will be the most cost-effective means of reducing the College’s campus greenhouse gas emissions from virtually every source. The components of the “Knowledge is Power Saved” strategy include:

1. Behavior modification and operational change
2. Enhanced information management and reporting
3. Formalizing sustainability within institutional structures and increased engagement of senior leadership
4. Energy assessments of existing buildings





The specific emissions reduction *measures* considered in this Plan fall within this overall framework of educating and communicating sustainability issues to reduce campus greenhouse gas emissions from all sources. This strategy will guide climate action for a period of at least the next five years. A tremendous amount of education and capacity building will have to take place before this task can be considered complete.

Longer term strategies will have to be more ambitious and will likely require new expenses and capital outlay. If College administration and the other major stakeholders do not have a solid understanding of the importance and financial benefits of sustainability, these financial hurdles to come will prevent LaGrange from implementing more ambitious strategies required to achieve climate neutrality.

In the near term, LaGrange College has no plans to purchase greenhouse gas offsets or renewable energy credits or to deploy large scale renewable energy systems. LaGrange College faces serious financial constraints that have been and will continue to be exacerbated by multiple factors. While the CAP Committee may recommend some pilot testing of these GHG mitigation methods in the longer term, they are not affordable in the near term.

## CLIMATE ACTION MEASURES

As with other campuses, there are countless potential ways to reduce greenhouse gas emissions from LaGrange College. The CAP Committee agreed that focus and follow-through with a few high impact measures under the Knowledge is Power Saved strategy would be essential to achieving substantial, cost-effective greenhouse gas reductions. The subsequent list of measures is therefore not an exhaustive catalog of ways to reduce LaGrange College campus emissions, but rather an initial assessment of measures the Committee believes could be highly successful.

<i>Measure</i>	<i>Sub-Measures</i>	<i>Emission Sources Affected</i>	<i>Who's involved</i>
<b>1. Improved Building Scheduling</b>	<p>1.1 Condense weekend office work in specific buildings in order to maintain weekend setback schedule</p> <p>1.2 Condense summer scheduling in specific buildings and/or times</p> <p>1.3 Condense and reorganize academic year class locations</p>	Purchased Electricity Natural Gas Solid Waste	Registrar  Physical Plant  Marketing and Communications  Student Life
<b>2. Energy Data Tracking and Reporting</b>	<p>2.1 Provide monthly summary report of energy performance of campus buildings to Director of Physical Plant and Business Office</p> <p>2.2 Create information feedback loops for building occupants</p> <p>2.3 Implement utility accounting software; track and report meter-by-meter energy usage</p>	Purchased Electricity Natural Gas	Business Office  Physical Plant  Academic Departments
<b>3. Communications Campaign on Saving Energy</b>	<p>3.1 Campus signage encouraging proper temperature setbacks of individual room controls</p> <p>3.2 Faculty, Staff and Student email campaign on energy saving measures</p> <p>3.3 Training of faculty and staff on energy conservation behaviors</p> <p>3.4 Website to document progress and provide tips</p> <p>3.5 Training of building energy stewards</p>	Purchased Electricity Natural Gas Solid Waste	Sustainability Council  Marketing and Communications  Student Life

<b>4. Financial Feedback of Behavioral Choices</b>	4.1 Assign costs of outside-of-schedule building startups to departmental budgets	Purchased Electricity Natural Gas	Business Office  Marketing and Communications  Physical Plant  Academic Departments
<b>5. Integrate Energy Efficiency Audit Recommendations into Preventative Maintenance Plan</b>	5.1 Conduct energy audits of remaining buildings including building envelope, HVAC system operation, plug loads and other energy using systems  5.2 Optimize campus DDC system <sup>1</sup>	Purchased Electricity Natural Gas	Physical Plant  Business Office
<b>6. Institutionalize Sustainability through College Policies</b>	6.1 Develop and adopt College-wide new building energy performance policy  6.2 Develop and adopt building renovation energy performance policy	Purchased Electricity Natural Gas	Administration  Physical Plant
<b>7. Peak Demand Management</b>	7.1 Manage buildings peak electricity demand during summer months with interval/demand metering and load shedding system (trial of 5 buildings)	Purchased Electricity Natural Gas	Physical Plant

## EVALUATION OF CLIMATE ACTION MEASURES

LaGrange College’s current financial constraints demand that climate action measures show positive financial returns with low upfront capital requirements in order to be viable. For that reason, the metric ‘Net Present Value per tCO<sub>2</sub>e Reduced’ was utilized as a primary indicator of the measure’s attractiveness. Values for additional metrics were calculated as well, creating a final evaluation metrics list as follows:

- Net Present Value per tCO<sub>2</sub>e Reduced (\$/tCO<sub>2</sub>e)
- Total tCO<sub>2</sub>e Reduced (tCO<sub>2</sub>e)

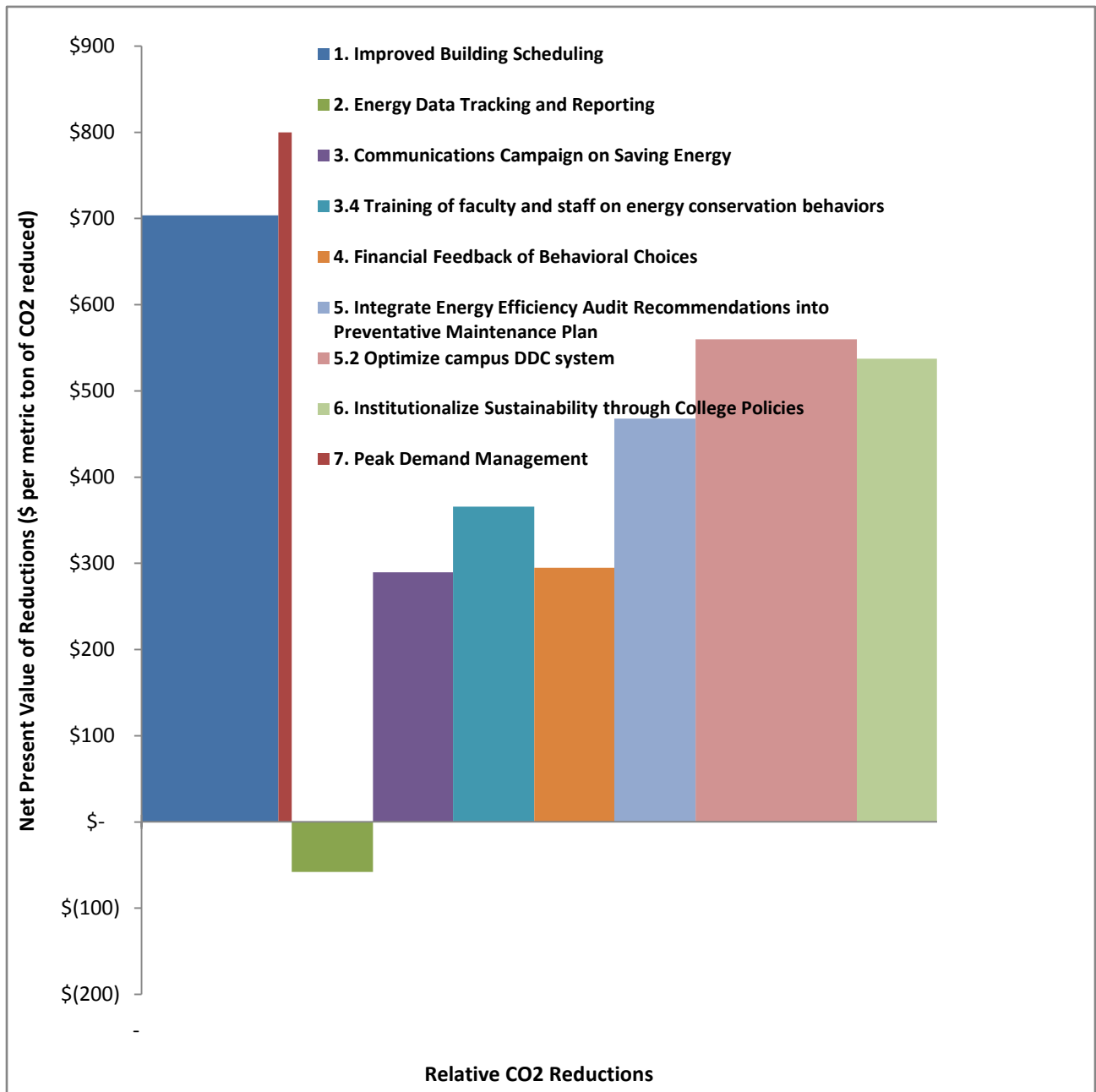
<sup>1</sup> Direct Digital Control System, also known as Building Automation System

- Total Upfront Cost (\$)
- Simple Payback (years)
- Uncertainty (qualitative scale)

Fortunately, the Knowledge is Power Saved strategy is characterized by low-cost and high-impact initiatives. For example, creating a simple energy information email campaign to building occupants has small upfront and ongoing costs. Its effect, however, can be quite large as building occupants become more aware of how basic decisions like powering down appliances or changing room temperature set points affect energy usage and utility costs.

Unfortunately, the Knowledge is Power Saved strategy is also characterized by large uncertainty. The effectiveness of communications campaigns to save energy, for example, varies widely. Unlike predicting the life cycle energy and cost avoided of a lighting retrofit, few quantitative parameters are available when predicting the life cycle energy and cost savings of a 'soft' measure like communications and marketing. Nevertheless, we have calculated building-by-building electricity, electric demand and natural gas avoidance from each measure. We have attempted to be conservative with our estimates and assumptions in order to compensate for inherent uncertainty. In estimating the costs of the various knowledge-enhancing measures, we have not neglected to value the necessary person-hours to develop, deliver and receive information. In each case, we have priced the opportunity cost of labor for staff as well as potential consultants to assist LaGrange College staff. Unless otherwise indicated, the calculations apply to all sub-measures within the numbered measure.

## FINANCIAL RETURNS AND GHG REDUCTION OF RECOMMENDED MITIGATION MEASURES

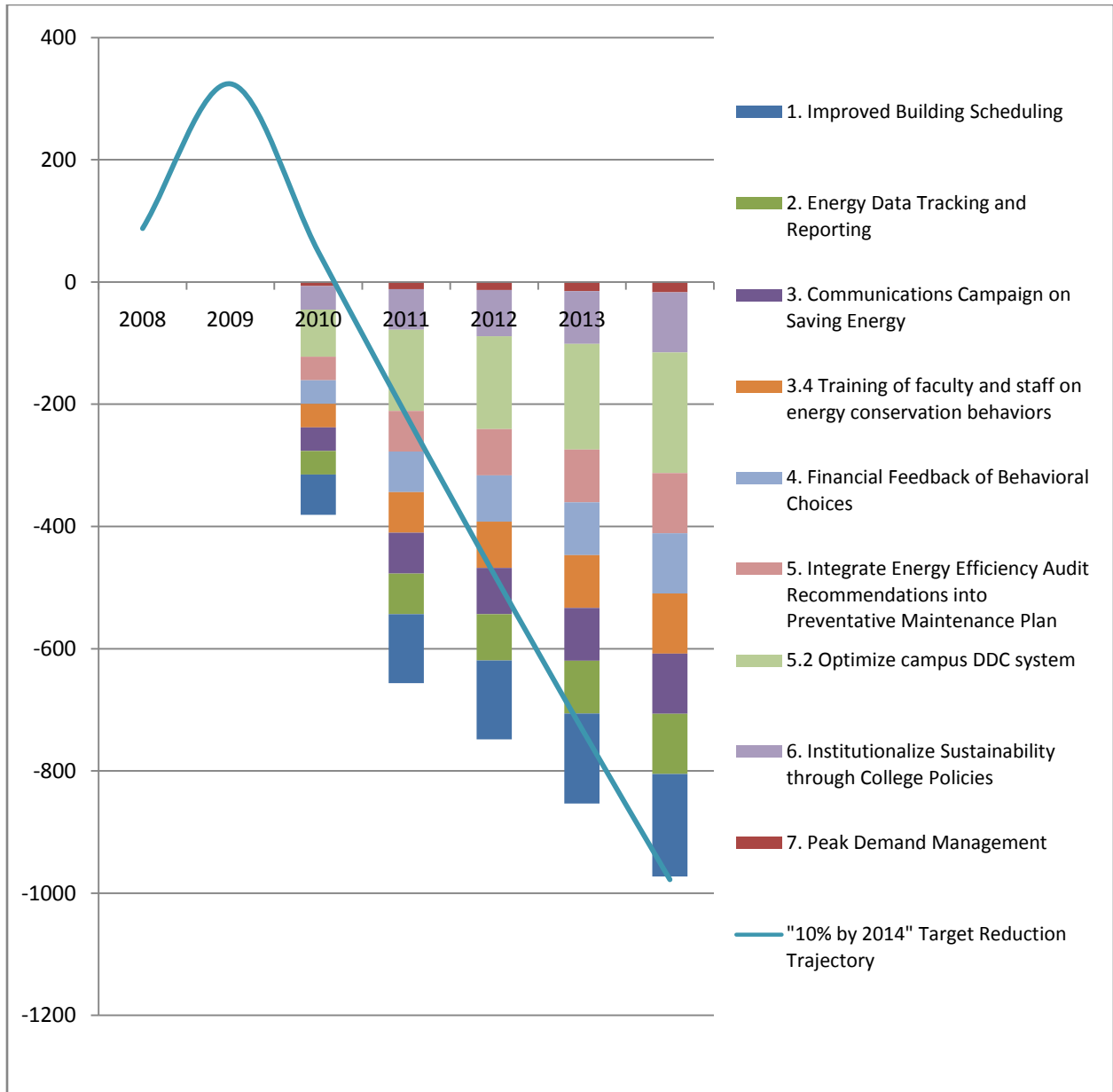


As the chart above depicts, the GHG reduction measures recommended in this Climate Action Plan are all estimated to offer substantially-positive net present value investment opportunities. Where electricity and natural gas avoided costs could not be estimated with more sophisticated measures, a 1% avoidance figure was assumed. In conjunction, the required actual energy avoidance for the project to break even was estimated. Generally, very

little energy usage needed to be avoided in order for the project to break even. Minimum avoided energy usage and other figures are shown in the table below.

	<b>Minimum Annual Energy Cost Avoidance to Break Even (\$0 NPV)</b>
<b>1. Improved Building Scheduling</b>	1.75% of cooling and heating usage
<b>2. Energy Data Tracking and Reporting</b>	1.10%
<b>3. Communications Campaign on Saving Energy</b>	0.50%
<b>3.4 Training of faculty and staff on energy conservation behaviors</b>	0.37%
<b>4. Financial Feedback of Behavioral Choices</b>	0.50%
<b>5. Integrate Energy Efficiency Audit Recommendations into Preventative Maintenance Plan</b>	0.20%
<b>5.2 Optimize campus DDC system</b>	0.07%
<b>6. Institutionalize Sustainability through College Policies</b>	0.07%
<b>7. Peak Demand Management</b>	3.3% of 5 bldgs billed demand

For simplicity, we assume that all the recommended measures in this CAP would be implemented by 2011. The emissions reductions from measures in this CAP do not promise to achieve 10% reduction below 2007 emissions. For this CAP, we assume that the results of these measures will “inflate” and new greenhouse gas emissions reduction measures will emerge in order to achieve the committed reductions by 2014, as depicted in the figure below.



## EDUCATIONAL, RESEARCH, COMMUNITY OUTREACH EFFORTS

LaGrange College created a multi-stakeholder Sustainability Blue Ribbon Task Force in spring 2008. The Task Force objectives include to “suggest ways to reflect the College’s embracing and understanding of sustainability...in the College’s academic programs....[and] co-curricular activities.” The faculty and staff that comprised the Task Force developed an extensive list of recommendations to augment the College’s academic programs and community engagement efforts in order to promote sustainability beyond the campus walls. The Educational, Research and Community Outreach component of this Climate Action Plan is drawn from the Blue Ribbon Task Force’s valuable work.

It is vital to note that the Educational, Research and Community Outreach section includes all Climate Action Plan-relevant recommendations of the Blue Ribbon Task Force. The Task Force was created under the previous College

administration; the decision to approve and implement the Task Force's recommendations will rest with the new College administration.

## EDUCATION

**Blue Ribbon Task Force Objective 1:** Suggest ways to reflect the College's embracing and understanding of sustainability – including global awareness – in the College's academic programs.

In terms of the first objective, our recommendations reflect our desire to encourage and support educational opportunities for all faculty, staff, and students to engage actively in change toward sustainability. We have divided this objective into two categories: Academic Programs and Global Awareness.

### **Goals for the Academic Programs:**

- Incorporate sustainability into core and major courses.
- Increase student's exposure to sustainability topics.
- Have an upward trend in faculty involvement with sustainability focus topics in courses.
- Support faculty research that investigates and encourages attention to sustainability (economic, social, and environmental) and offer appropriate research and practicum experiences for students.
- Promote healthy lifestyles.
- Offer opportunities for continued learning for faculty and staff about sustainability issues.
- Support action projects that encourage reflective participation in sustainability efforts for students, staff, and faculty leaders.

### **Recommendations for Academic Programs:**

- a. Incorporate sustainability into all integrated core courses (each course could incorporate at least one particular aspect of sustainability). Faculty members should indicate on their syllabi how sustainability will be incorporated into each course that they teach.
- b. At least one cornerstone class should have sustainability as its topic of focus.
- c. Faculty should have development opportunities to help them learn how to incorporate sustainability into their courses or to expand their knowledge of incorporating sustainability into their courses. This could be done in the following four ways:
  1. During the interdisciplinary course institute meetings (for faculty teaching the CORE courses such as Cornerstone, American Experience, Humanities, Problem Solving, etc.), at least one hour should be devoted to the incorporation of sustainability into the course. This should be organized by the course coordinator. A representative from the Curriculum Awareness Committee, which is a subcommittee of the Sustainability Council, could provide resource help if needed.



2. Any faculty, but especially faculty who are course coordinators, division chairs, or department chairs, are recommended to participate in the Sustaining the Hill Project, which is a workshop designed to help faculty incorporate sustainability into their courses. This project should be designed and developed by the Curriculum Awareness Committee by the end of spring semester of 2009 and should be included in the Sustainability Council's year-end report to the president of the College. The project should then begin in the spring of 2010 and the goal would be to help faculty incorporate sustainability into their courses in a broad range of disciplines as well as the core courses.
  3. Have brown-bag lunch discussions on sustainability in order to share ideas among faculty and/or have a common-themed sustainability reading. Invite students to attend and possibly give cultural enrichment credit for these if approved by the Cultural Enrichment Committee.
  4. Provide a designated spot on the Sustainability Web page that would be a resource guide for faculty who would like to learn more ways to incorporate sustainability into their courses. These resources should be available in the College library or online. The Publicity Subcommittee of the Sustainability Council, who currently maintains the webpage for the Sustainability Council, should be the point of contact for posting links.
- d. Have a sustainability link on the College's homepage in order to emphasize its importance on campus. This could link to the Sustainability web page.
  - e. All students should participate in at least four sustainability enrichment events as a graduate requirement. Sustainability enrichment events should be designated in the cultural enrichment calendar in order for students to be able to identify events that would satisfy this requirement. Events that would count towards this requirement should be approved by the Sustainability Council. Transfer students should have this as a graduation requirement, but the number of events should be reduced.
  - f. Add sustainability to the CORE goals of the College curriculum.
  - g. Every department on campus should define sustainability as it relates to the major's discipline and denote courses that incorporate sustainability in them. This should be included in the LaGrange College Academic Bulletin.
  - h. Update technology on campus to maintain a competitive edge. To help with this, we recommend to make additional funds available for technology and to reinstitute the Instructional Technology Roundtable to its original format. The original Technology Roundtable Committee had a balance of faculty members and administrators serving on the Committee and would ask departments to submit technology needs in the fall of each year. The proposals from the departments would indicate how the need fit into the Institutional Effectiveness goals for the College. The Technology Roundtable Committee would then prioritize the requests as funds were available.
  - i. Emphasize some type of physical wellness program. This could be done by requiring at least one physical education course per year.

- j. Develop partnerships with organizations (companies, agencies, or government entities) for the mutual promotion of sustainability.
  - 1. Cultivate internships with these partner organizations such that sustainability is an integral part of the internship experience. Departments that choose to require a sustainability component of such an internship should work with the Career Center to develop a handbook to be used for this type of internship. The student's portfolio should include research of how the organization incorporates sustainability in their practices and then how these practices could be incorporated at LaGrange College (if applicable). Departments should indicate how this component of the internship will be evaluated.
- k. Encourage undergraduate research that includes a component of sustainability.
  - 1. Papers published in Citations should indicate whether the research is in an area of sustainability by having a section devoted to research in sustainability topics.
  - 2. Guarantee that at least 20% of undergraduate research funding be available to students who are doing research with an emphasis in sustainability. The abstract for the research should be sent to the Sustainability Council for approval before consideration for the funding.
- l. Encourage more interim term courses with topics in sustainability. Then, at Interim Term Day, have at least two student presentations on courses in which sustainability is involved.
- m. Give awards for sustainability efforts on campus. These could include the following:
  - 1. Honor's Day Award – Individual awards could include a student award and a faculty award given to the individual who models sustainability in their lives; Group or organization awards could include a Greek award and a non-Greek award.
  - 2. Gang Green House – This house should continue to be used by students who commit to sustainable living practices and should be used as an example for others on campus (tours at Homecoming, etc.). An application process, as needed, should be put into place by Student Affairs that would be used to choose the students to live there (possibly a group application).
  - 3. Undergraduate Research Award for a sustainability themed research project (with a monetary award similar to the Hines Award). Funds should be solicited by identifying a donor.
  - 4. Research Award for a faculty member who does sustainability themed research. Funds should be solicited by identifying a donor.
  - 5. The topic "What is sustainability?" should be the focus of "First Week" and the Faculty Institute during fall of 2009 or 2010. For every year afterwards, "First Week" should have at least one day devoted to sustainability.
  - 6. Give a minimum of two Sustainability Scholarships to incoming freshmen with some on-campus responsibility attached to the award. We recommend that this

responsibility include working with the Sustainability Coordinator, helping to fulfill the obligations required by the President's Climate Commitment, and cultivating a garden with the help of the Sustainability Council members.

- n. Make prospective students and their parents aware of sustainability efforts on campus when they visit the College (giving tours of the library, etc.). In order to do this, students who currently conduct tours need to be trained.
- o. Evaluate the effectiveness of the Oikos Sustainability minor in order to determine if a major in Sustainability is needed.
- p. Develop Millennial Park as a native plant habitat/Arboretum for educational purposes and eventually expand this practice throughout other areas on campus. It is recommended that this project be a collaborative effort between National and Science department course work.

## RESEARCH

LaGrange College is not a research institution. Student research in topics relating to sustainability and climate action are covered in the previous section.

## COMMUNITY OUTREACH

The Blue Ribbon Task Force produced the following recommendations pertaining to community engagement around climate action and sustainability:

1. Develop partnerships with organizations (companies, agencies, or government entities) for the mutual promotion of sustainability.
  - a. Cultivate internships with these partner organizations such that sustainability is an integral part of the internship experience. Departments that choose to require a sustainability component of such an internship should work with the Career Center to develop a handbook to be used for this type of internship. The student's portfolio should include research of how the organization incorporates sustainability in their practices and then how these practices could be incorporated at LaGrange College (if applicable). Departments should indicate how this component of the internship will be evaluated.
2. Cultivate a relationship with organizations to assist one another with the promotion of sustainability. Some organizations that we currently have a relationship with or should develop a relationship with include, but are not limited to, the following:

City of LaGrange

Troup County

Chambers of Commerce

Keep Troup Beautiful

Upper Chattahoochee River Keepers

West Point Lake Coalition

Interface

Milliken

DASH

3. Encourage more work-study students to be involved in service to the community type jobs.
4. Increase the number of federal work-study funds for community service jobs. For example, students in a particular major could work in the local schools to help aid teachers or serve as tutors in their major area.

## FINANCING

The strategy pursued in this Climate Action Plan, Knowledge is Power Saved, relies mostly on engagement of current College staff towards the aim of increased knowledge and understanding around sustainability. There are no major capital outlays recommended in this report. The largest upfront cost is associated with Measure 7, Peak Demand Management, which includes equipment, software and programming. These costs are estimated to be approximately \$5,000 per building for a total upfront cost of \$25,000 for the five proposed buildings. In spite of the present financial challenges, this sum could likely be found in an existing operating budget.

In the longer term, LaGrange College will benefit from a stable source of financing for green campus projects. An endowment, a revolving loan fund, and other options that tie utility savings to future investments are under consideration.

## TRACKING PROGRESS

LaGrange College has implemented a program to simply but effectively track every campus emissions source. The table below describes the tracking protocol for each emissions source.

<b>Emissions Source</b>	<b>Data Tracking Protocol</b>
<b>College Fleet</b>	LaGrange College Campus Services tracks mileage and fuel charges of its campus vehicle fleet through the campus's work order management system. Mileage and fuel usage for those campus vehicles not managed by Campus Services are based on usage estimates.
<b>Air Travel</b>	All air travel arrangements are made through a local travel agent in LaGrange, Georgia. Each year the agent supplies a report of total air mileage based on each faculty, staff and student trip made.

<b>Fertilizer Application</b>	Fertilizer quantities are based on the purchase orders placed throughout the year.
<b>Refrigerants</b>	Campus Services maintains a log with quantities of refrigerants used based on service calls through the campus work order system.
<b>Commuting</b>	An annual campus commuting survey is conducted and total emissions are scaled up based on response rate.
<b>Solid Waste</b>	Total solid waste mass is updated based on landfill tickets each quarter.
<b>Electricity and Natural Gas</b>	Presently a web-based system is available to track energy usage (electricity and natural gas) on each account with the municipal utility provider. As discussed in <i>Mitigation Strategies</i> above, LaGrange College will enhance its energy usage tracking and reporting substantially, including implementation of a campus-wide energy management software system and building-by-building energy reporting. This energy management software will empower LaGrange College to evaluate the true benefits of each energy efficiency measure by normalizing for independent variables such as weather and building utilization.

The above information will be summarized in regular submissions of campus greenhouse gas inventories in accordance with ACUPCC commitments.

**“CARBON CAN”: A WEB-BASED GHG TRACKING SYSTEM**

Furthermore, a LaGrange College alumnus, contractor and CAP Committee member is currently developing a web-based application to accept information on the various emissions sources and prepare it for entry into the popular Clean Air Cool Planet emissions calculator. LaGrange College will help to pilot test this tool, a first version of which has been fully programmed, with the intention of utilizing it for emissions reporting. Presently it is envisioned that this web application will be made available to other schools free of charge.



## CONCLUSION

This Climate Action Plan will be a living document. As the recent financial crisis has made excruciatingly clear, no one can foresee what the future will bring for colleges and universities. Perhaps breakthroughs in technology will obviate the need for combustion-based energy within the century. Changes in local, State and federal policy will surely impact LaGrange's climate action planning in myriad ways over the coming decades. The purpose and hope we have for this Plan is that it will lead to real and consistent reductions in campus greenhouse gas emissions and thereby save LaGrange College money and make the College a better steward of the earth. How to best accomplish this purpose will surely change with time and this Climate Action Plan will have to change with it.