CALVIN

College

Calvin Sustainability Scorecard

April 2015

Purpose

In response to God's faithfulness and the Biblical mandate to exercise responsible stewardship of all God's blessings, Calvin College developed "practical guidelines that lay a foundation for living in a way that honors the Creator and his beloved creation" in the Statement on Sustainability.[1] The Statement on Sustainability notes that "[s]ustainable living is the daily working out of the stewardship mandate." As Calvin grapples with issues of sustainability, we must find ways to formalize our commitments and make sustainability the "way of life" for Calvin both in terms of operations and the educational mission of the college.

The Calvin Sustainability Scorecard (CSS) is Calvin College's means of assessing (on an annual basis) our progress toward the goals of the Statement on Sustainability. The CSS covers several aspects of sustainability at Calvin, and it is meant to be a simple but helpful way to evaluate our activities on campus. CSS metrics are related to Statement on Sustainability topics on the following pages.

No assessment process or set of metrics are perfect, and this scorecard is no exception. It was designed to be simple, and therefore sustainable through time, and it includes mostly data that we routinely collect anyway. Data are reported based on both academic and calendar years, depending on typical reporting intervals. We will find good reasons to change, adjust, or amend the scorecard as we become more aware of the campus impact on God's Creation, as we continue the process of evaluating our activities in the context of the Statement on Sustainability, and as we strive to live as responsible stewards of the Earth. Comments, both praise and criticism, are welcome. Please visit the Calvin Energy Recovery Fund website at http://www.calvin.edu/go/cerf.

Summary

The goal of the Calvin Sustainability Scorecard (CSS) is to provide a quantifiable measurement process to track our progress in conjunction with the College's Statement on Sustainability.[1] Some of the sections in the Statement on Sustainability lend themselves well to numeric metrics, while others do not. In the process of assembling these metrics, we are becoming more accountable for the effects of our actions on the environment.

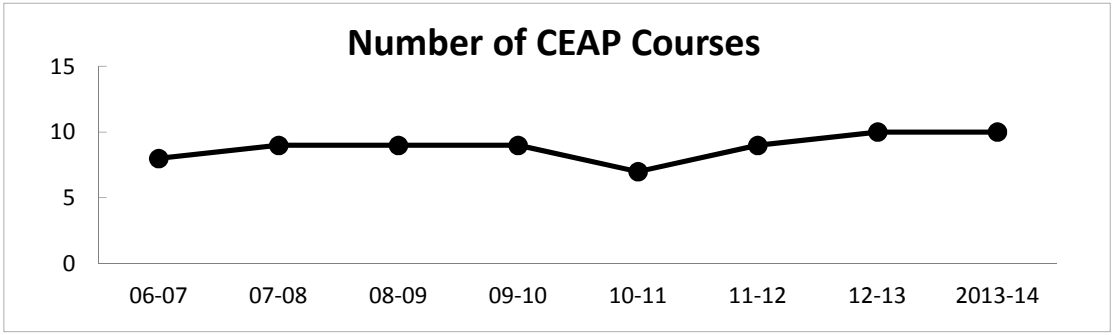
Energy consumption and CO_2 emissions (4) have noticeably decreased in the past year. One third of the reduction is due to the CERF Track and Tennis Center lighting retrofit, completed in March 2014. Natural gas consumption stayed level due to similar winter weather (4). Other areas showing improvement include more recycled waste from 2013 (3) and a ten million gallon decrease in water consumption from 2013 (5). Total local food purchases increased from 2012 due to a significantly greater consumption of local milk products on campus (8). Bus rides and bus passes decreased from 2013-2014 possibly due to the stabilization of gas prices, resulting in a higher number of parking permits and commuters driving their cars to campus (7). Faculty involvement with sustainability topics as reported in the Faculty Activities Report (FAR) shows a decreasing trend, but this may be an issue of incomplete reporting (1) (13).

[1] http://www.calvin.edu/admin/provost/sustainability/documents/sustainability-statement.pdf

Teaching and Research 1

The Calvin Environmental Assessment Program (CEAP) is a collaborative effort of faculty (since 1997) who dedicate regular lab sessions or assign student projects for data collection that contributes to an overall assessment of the campus environment and surrounding community. Students learn about their campus environment and are exposed to sustainability ideas and concepts through CEAP projects. The data collected and analyzed by students form the basis for recommending changes in campus policies, for programs that target individual behavioral changes, and for identifying issues that involve and impact adjacent neighborhoods and the West Michigan community. At the end of each semester, CEAP projects culminate in a poster session where students present their findings.

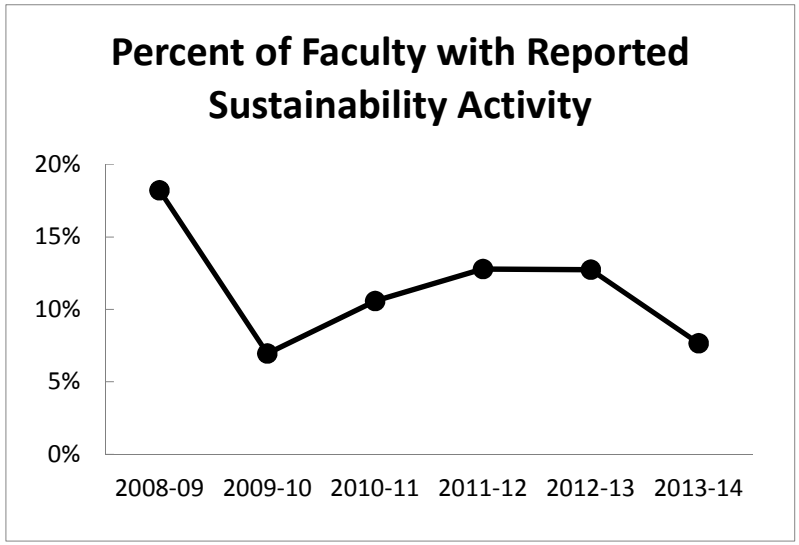
Notes about the data: The number of CEAP courses fluctuates depending on course rotations, faculty teaching loads and is just one indicator of how sustainability and creation care is integrated into the Calvin curriculum

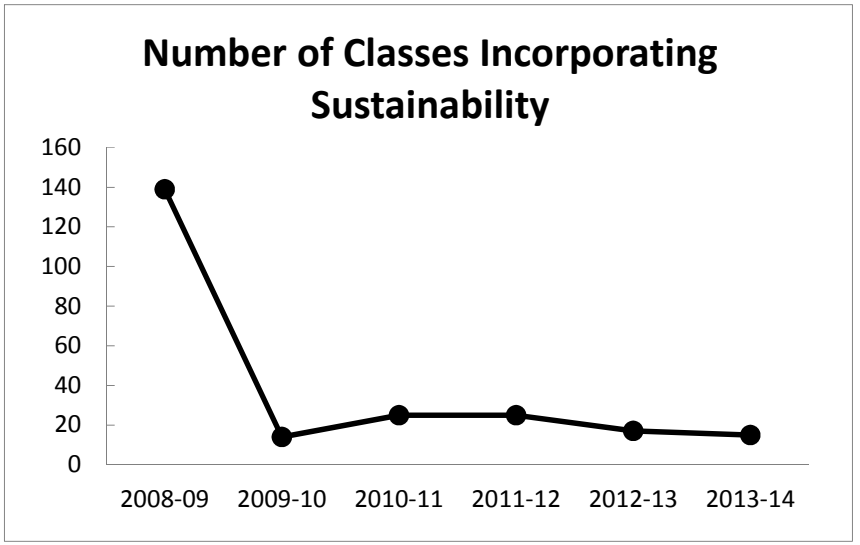


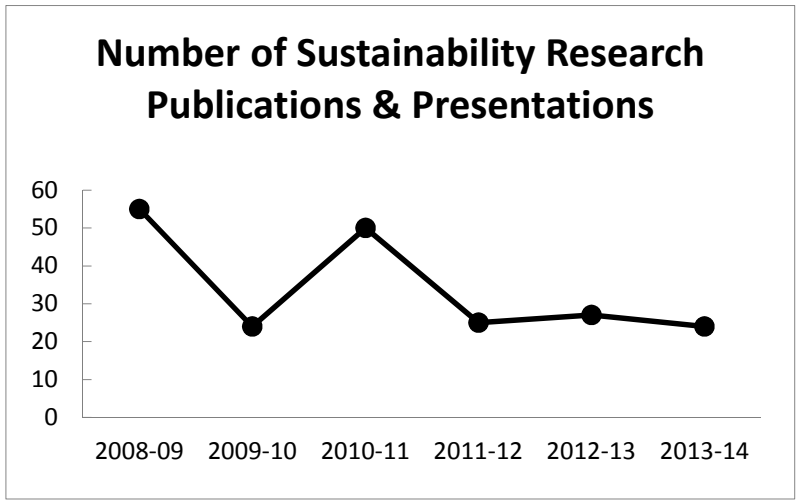
Beginning in the 2008-2009 academic year, the scorecard has also been tracking sustainability activities of faculty through the annual Faculty Activity Report (FAR) in three subcategories: sustainability-related class content, research and publications, and grants and fellowships.

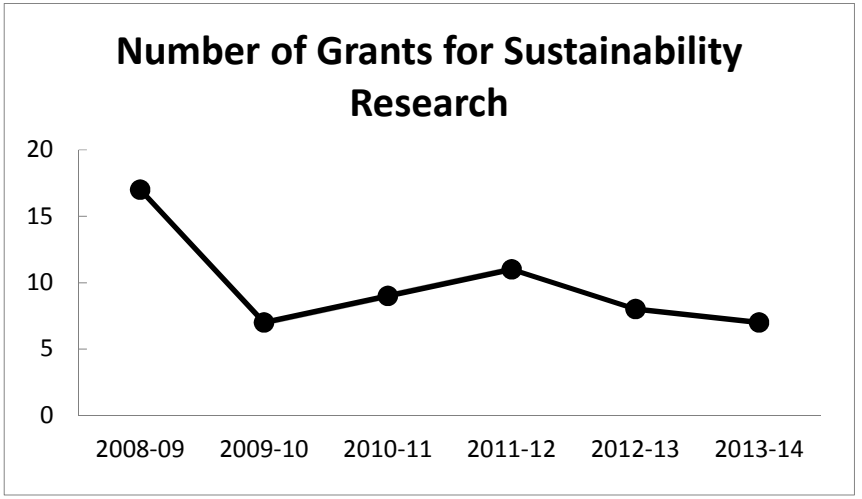
Notes about the data: When sustainability reporting was first introduced in 2008, many faculty documented their activity. However In 2009-10 and 2010-11 the FAR process has been insufficiently comprehensive to capture the breadth of faculty activity because of significant under-reporting. While there was an incease in reporting for the 2012-13 academic year, the 2013-2014 academic year showed a decline in reported sustainability classes and grants. We are continuing to research alternative ways to collect these data in future years to provide more accurate results.

1 Teaching and Research





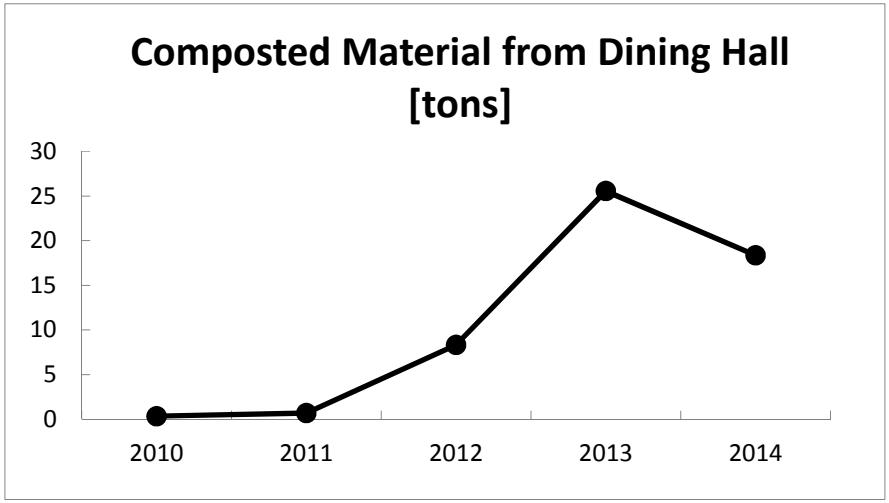




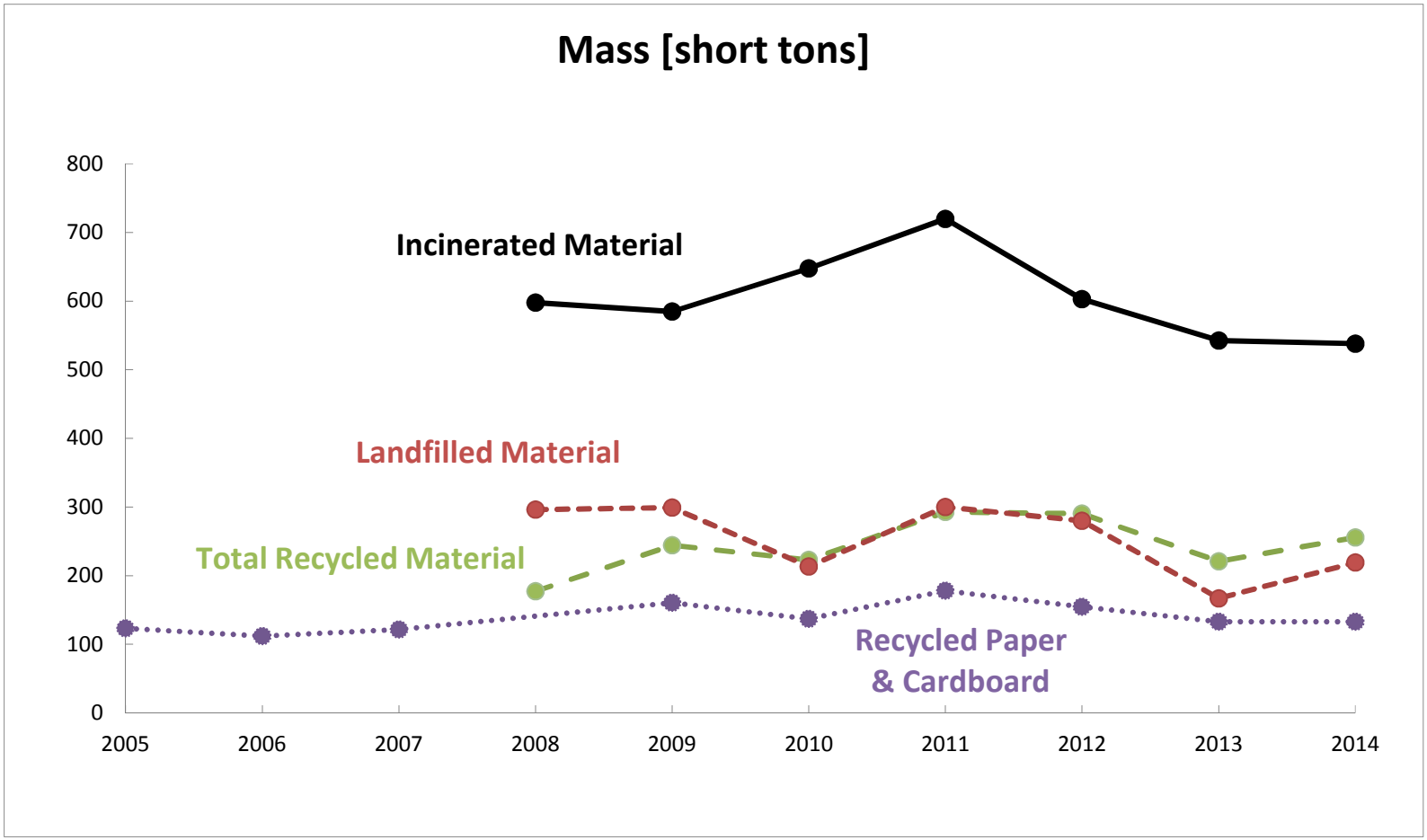
Solid Waste Reduction and Recycling 3

Calvin College continues its efforts to recycle as much material as possible. Currently we recycle office paper, paperboard, corrugated cardboard, books, glass, metal and plastic food and beverage containers, electronic devices, lamps and ballasts, batteries, polystyrene, scrap metal, concrete, used oil, and antifreeze. Composted waste diverted from the trash stream has remained high. 2014 marks the second year of a composting initiative. Additionally, landfilled material have increased slightly due in part to more renovation efforts during the past year.

Notes about the data : Data are collected in terms of both volume (e.g., 5-gallon pails of batteries) and mass (e.g., tons of cardboard). For this scorecard, all volume data was converted to mass using measured density values. Accurate values for 2008 could not be recorded due to a change in reporting periods. The following graphs contains data reported in both academic and calendar years. Data for academic years are represented by the fall semester year i.e. 2009-2010 data is plotted in 2009.



3 Solid Waste Reduction and Recycling

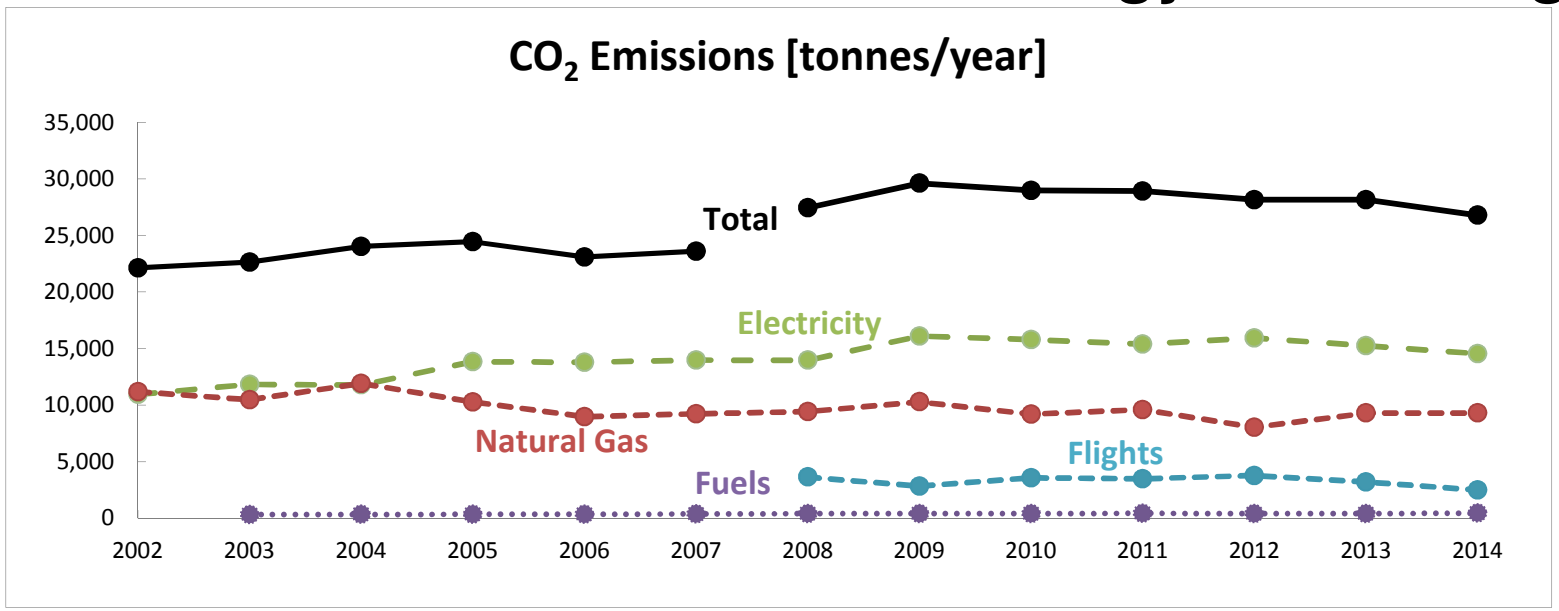


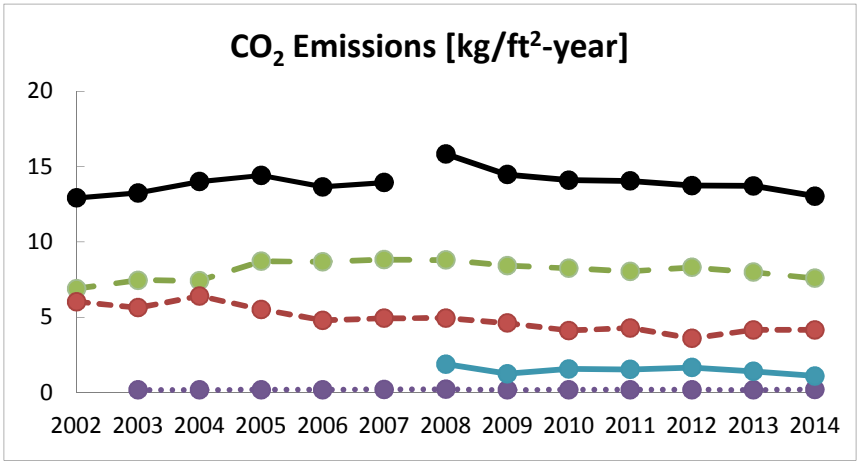
Energy Purchasing 4

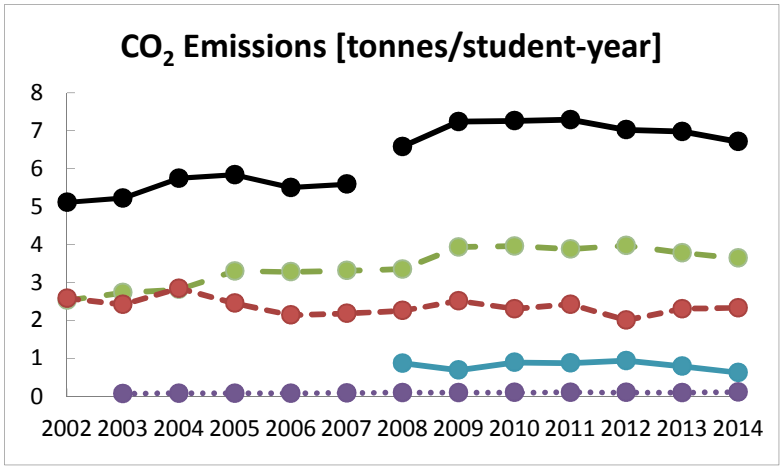
Greenhouse gas emissions (CO_2 included) are an important way to assess environmental impact. The earth is affected by total atmospheric CO_2 concentration. However, carbon emissions "intensity" (emissions per student or per square foot of building space) can provide useful information for comparison with similar institutions. We seek to reduce our total greenhouse gas emissions from all activities on campus.

Calvin continues to monitor and seek to decrease CO_2 emissions. Emissions gradually increased from 2002 (when data collection began) to 2009, when they slowly began decreasing. Emissions from flights and electricity decreased from their respective 2013 values while fuel usage increased slightly. Natural gas consumption (and therefore emissions) has leveled off, indicating a similar winter season to 2013.

4 Energy Purchasing





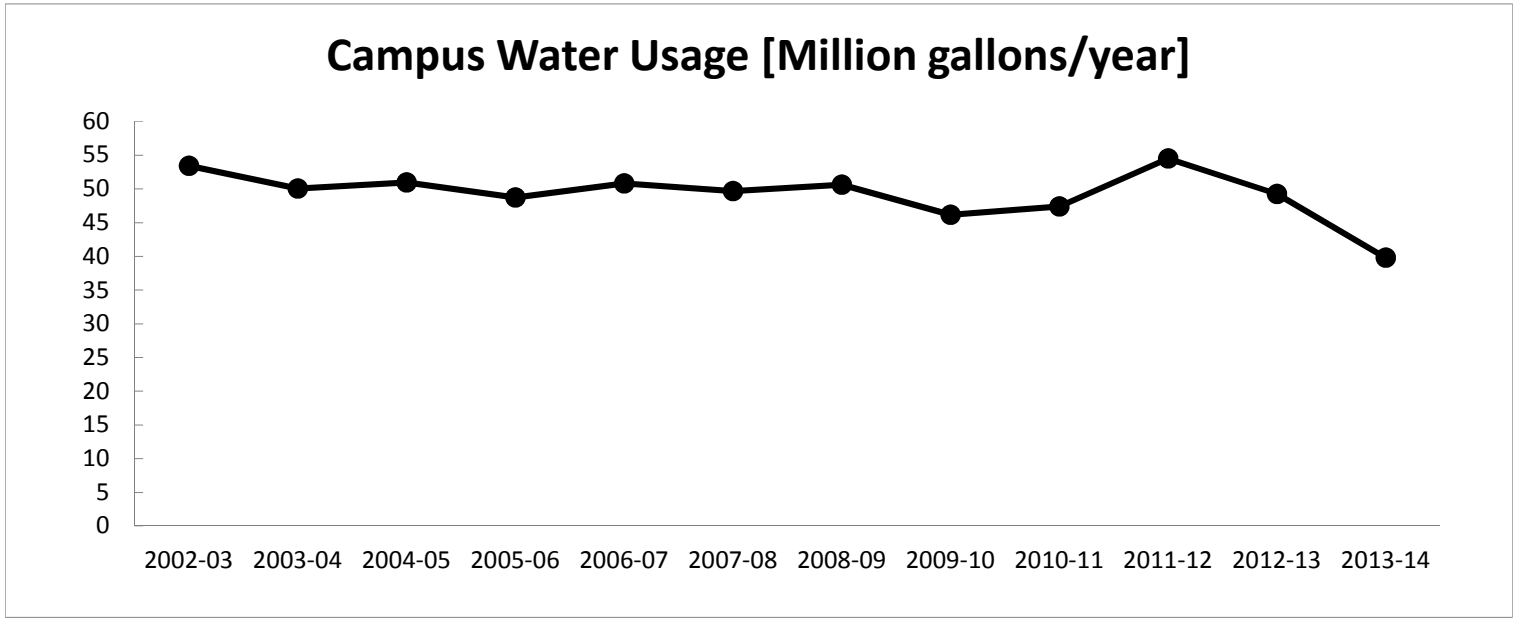


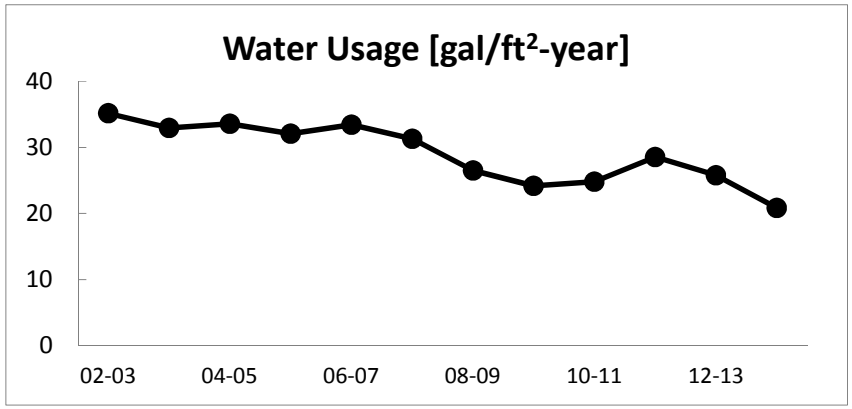
Water and Wastewater 5

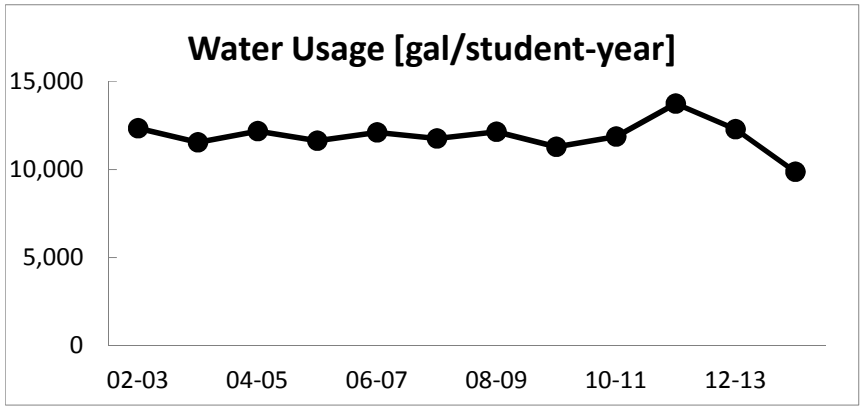
Water consumption is another way to assess environmental impact. We seek to reduce the overall water consumption on campus. Water usage at Calvin was trending downward since 2002; however, a significant increase in water usage of 7 million gallons (from 47 to 54 million gallons) occurred in 2011-2012, resulting in the highest water usage since 2003. The higher water usage in 2011-2012 is partially attributed to a water main break in January 2012, resulting in higher water usage than average for that month. The 2013-2014 water usage decreased by 10 million gallons, due in part to mild summer weather, new dish machines, increased conservation awareness, and the CERF low-flow showerhead replacement project.

A note about the data : Data for water usage is difficult to obtain precisely, because of the many independent water bills that Physical Plant receives. For this report, water usage is reported from the "main meter" on campus and includes the main campus but excludes the Bunker Interpretive Center, DeVos Communications Center, Prince Conference Center, Seminary Buildings, the Physical Plant building, Knollcrest East, Burton Street houses, and Ravenswood.

5 Water and Wastewater







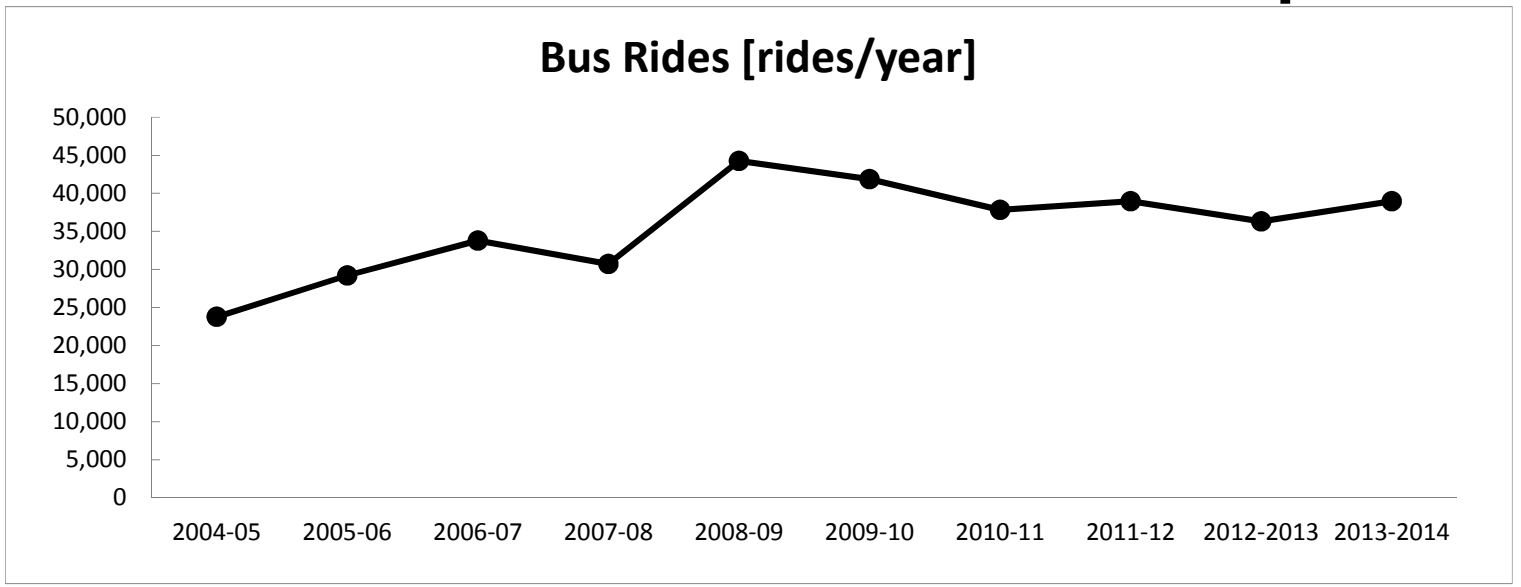
Transportation 7

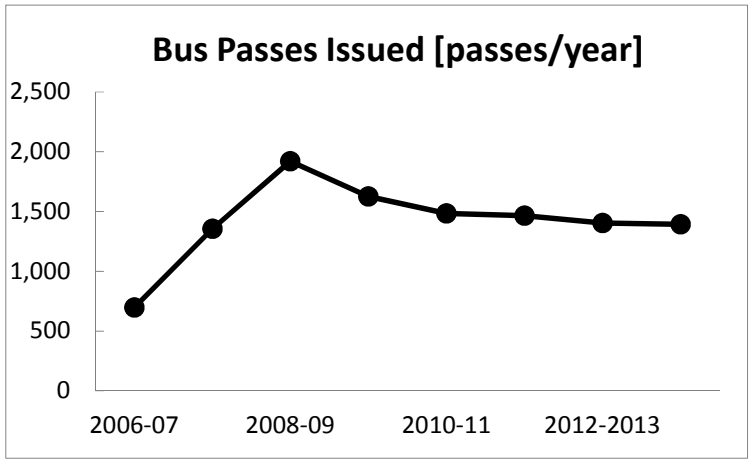
Walking, biking, and public transport are popular means of commuting to campus. Bus ridership saw its peak in 2008 corresponding to elevated gasoline prices. As the economy has recovered and gas price volatility has subsided since 2010, bus ridership and subsidized bus rides have leveled off or trended downward while parking passes have been trending upward.

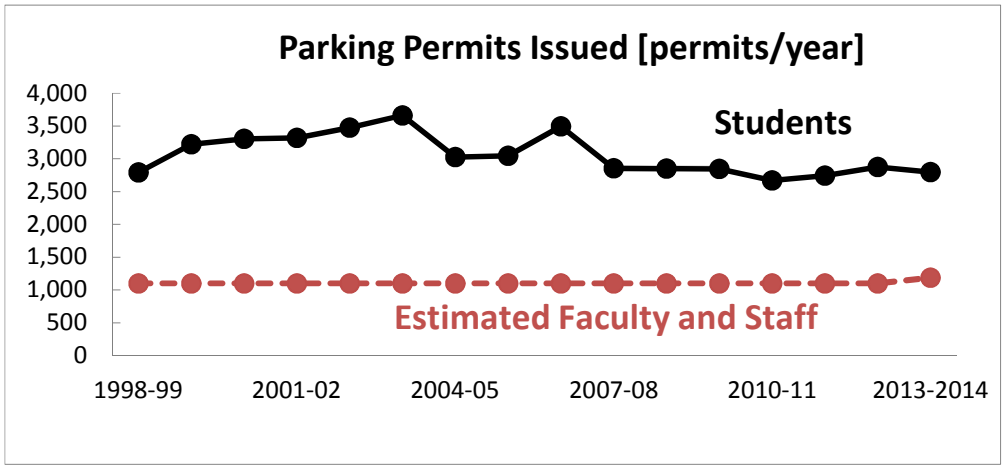
A note about the data: Rapid discount cards have been available since the 2006-07 academic year, and Rapid ridership information is available since 2004.

In previous versions of the scorecard, parking permits for students, faculty, and staff were aggregated into a single total. However, separating the categories provides better insight to commuting options across Calvin. Data will be collected separately in the future. Historically, the number of faculty and staff permits has not significantly fluctuated. Therefore, faculty and staff issued permits is estimated to be 1,100 for 1998-99 through 2012-13.

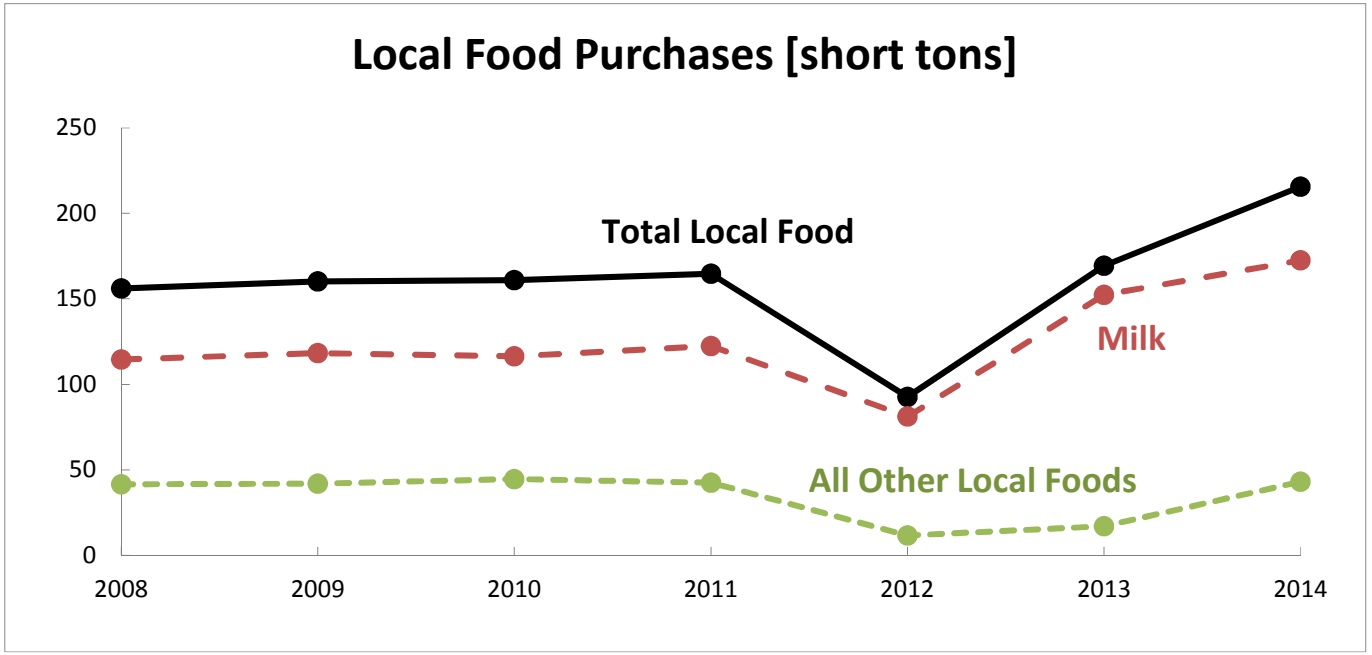
7 Transportation







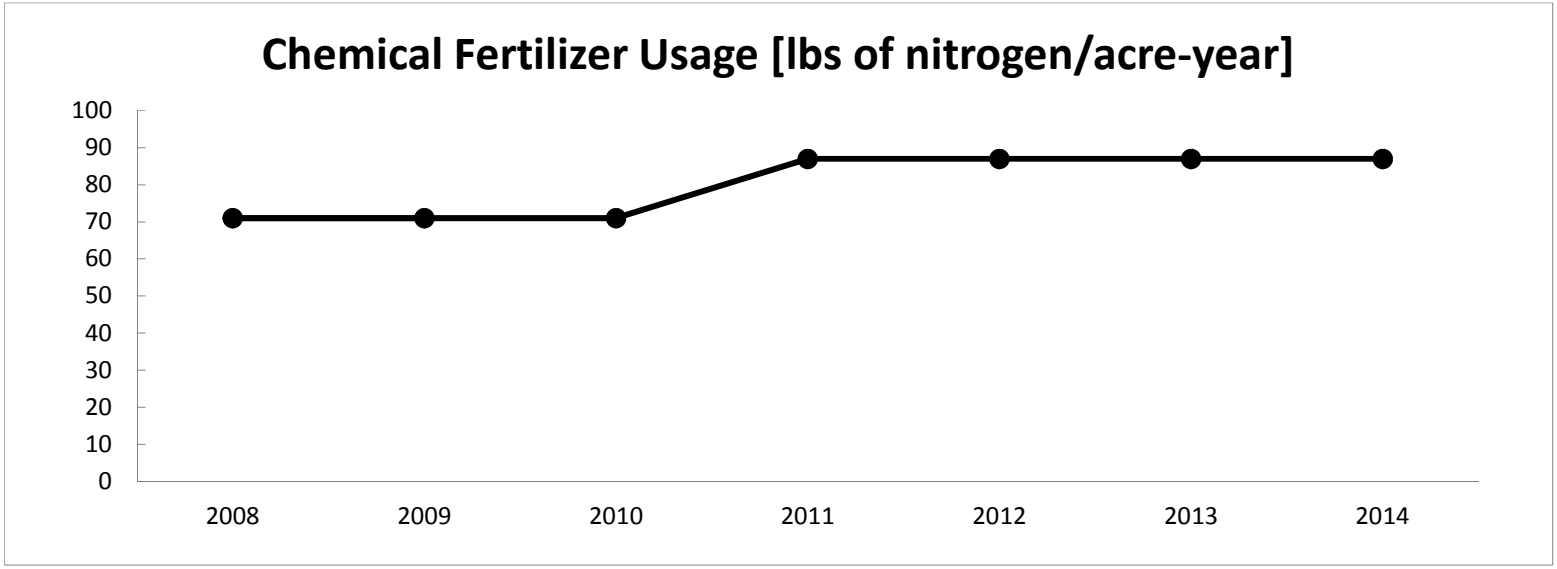
Food and Food Services 8



Calvin dining services (CDS) strives to help students, faculty and staff understand, practice, and promote sound environmental policies concerning the reduction of food waste and the promotion of recycling. Some initiatives include: buying regional produce in season, supporting local organic farms, and minimizing the use of disposable dinnerware. The increase in overall milk product consumption can be attributed to better tracking from Prarie Farms Dairy on milk purchases and the significant increase in meals served compared to 2012.

A note about the data : The vast majority (72% by mass) of local food purchased by Calvin Dining Services is milk. 2008 was the first year that data was collected for this purpose.

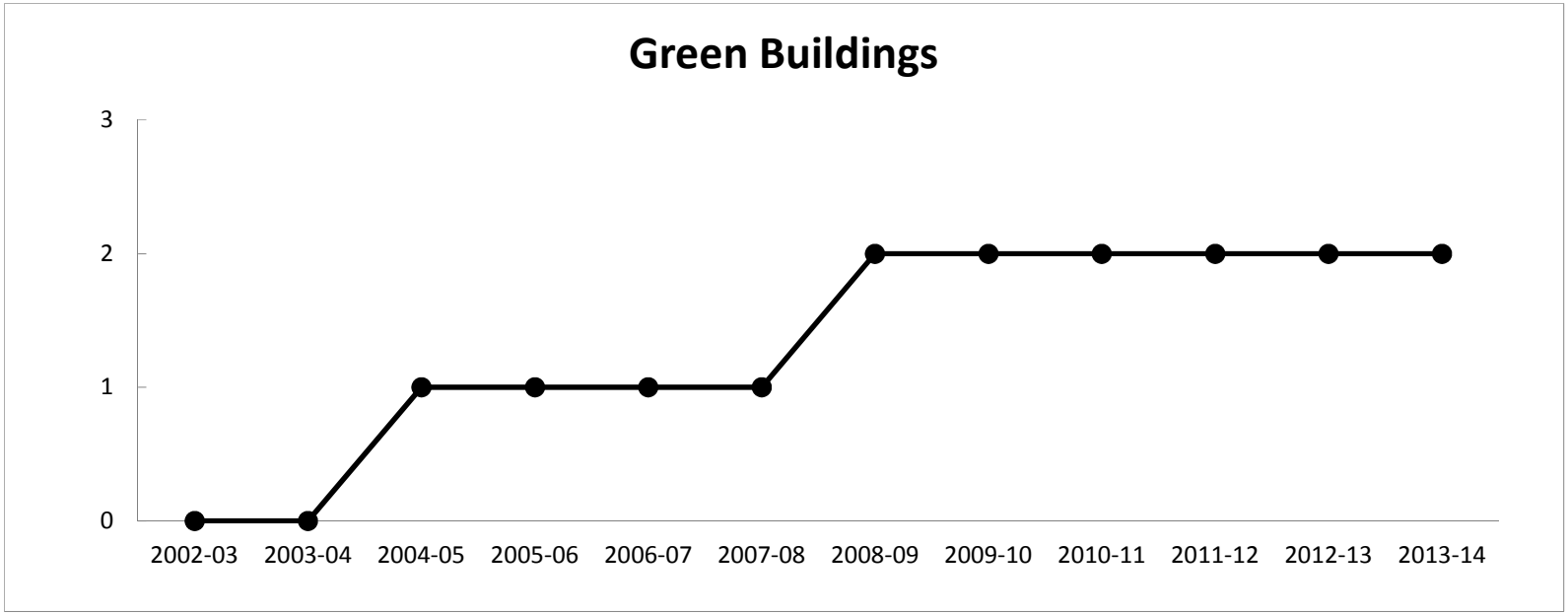
9 Campus Grounds and Land Use



General turf areas have been maintained with similar products over the last 10 years. Significant reductions in the lbs of nitrogen/acre-year took place from 1996 to 2000, when the fertilizer programs were significantly changed to reduce usage. The slight increase in application of fertilizer in 2011 is likely due to an increase of athletic field square footage, which require more care than other lawns. The fertilizer program has not been altered in the past four years, so data has remained constant.

A note about the data : lbs of nitrogen/acre-year is a common unit of measure in this field. Calvin uses 86 lbs nitrogen/acre-year, but a typical home lawn service applies up to 250 lbs nitrogen/acre-year.

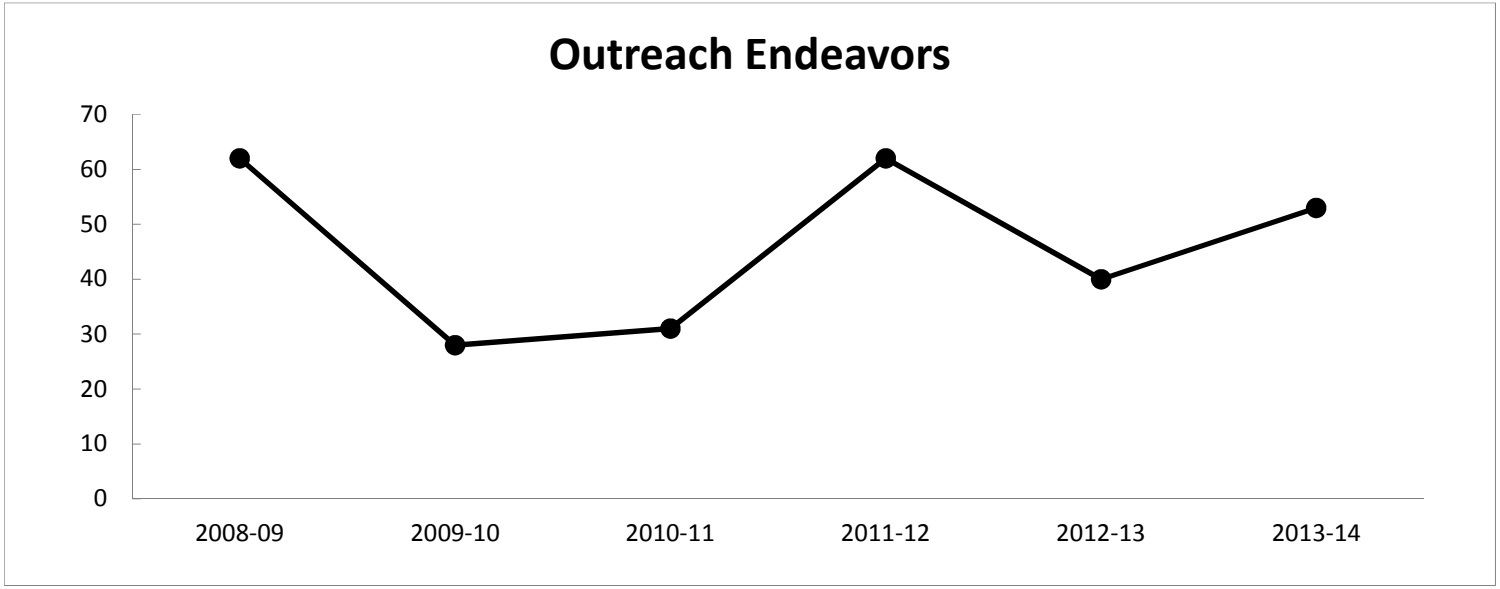
Building Construction: New and Renovation 10



Future construction is an opportunity to create more green buildings on campus. We encourage pursuit of LEED certification for future campus construction projects.

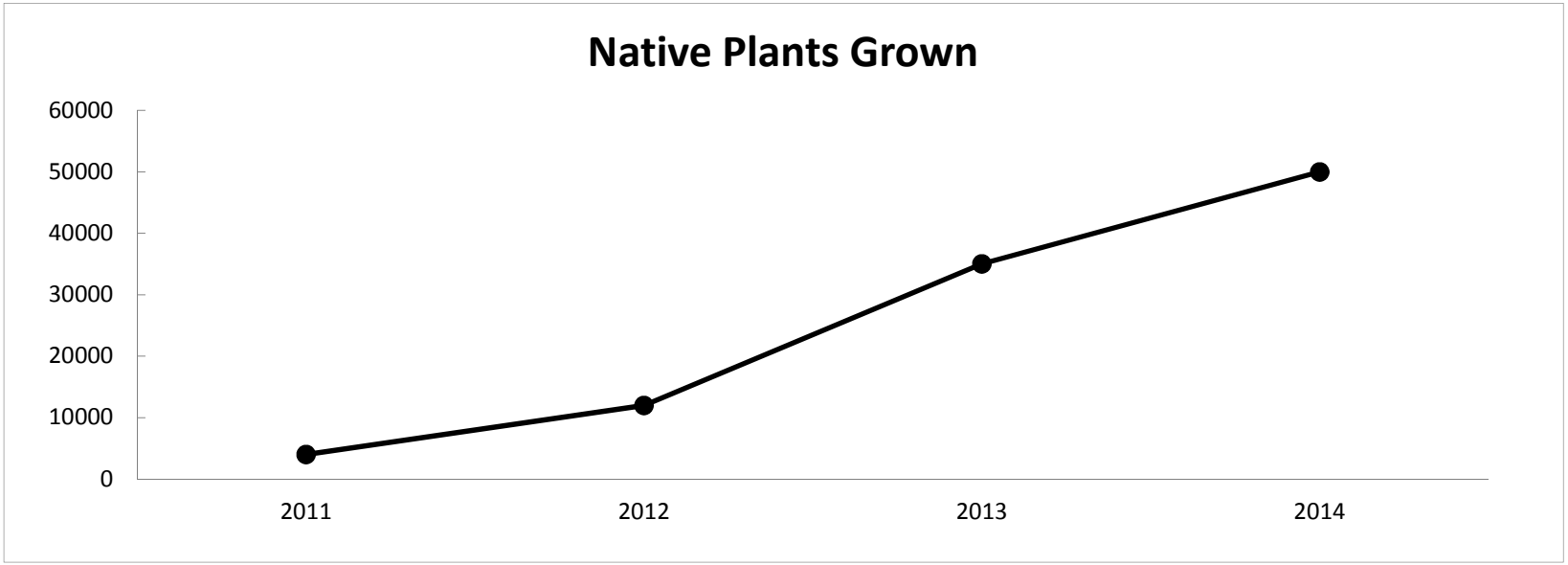
A note about the data : The 2005 Bunker Interpretive Center was Calvin's first (and to date only) LEED certified building. (See http://www.calvin.edu/academic/eco-preserve/bunker/ for more information.) The 2008 vanReken dormitory was built in the spirit of the Statement on Sustainability, but narrowly missed certification due to a change in LEED scoring midway through the project. Learn more about the sustainable features of the vanReken dorm at http://www.calvin.edu/admin/housing/residence-halls/vr-sustainability.html.

13 Outreach



The 2012-2013 academic year was the fifth set of data obtained on the outreach activities of faculty and staff via the Faculty Activities Report. This metric attempts to capture faculty initiatives to raise awareness of sustainable activities. Under-reporting on the Faculty Activities Report (FAR) is believed to be the cause of the decrease in total outreach activities. However, this year's outreach activites are trending upwards, indicating that more reporting is taking place.

13 Outreach



The 2013-2014 academic year was the first time data were obtained on the outreach activities regarding native plant growth and transplants. Native plants are adapted to Michigan soils and climate and are essential for habitat and food for birds and insects. Native Landscapes, a volunteer native plant nursery and landscaping initiative based out of the Biology Department at Calvin, provides plant materials for restoration projects in the Plaster Creek Watershed. This program planted 50,000 native plants in 2014, a substantial increase from their initial planting of 4,000 native plants in 2011.

Acknowledgements

Rebekah Arndt, Wagonlit Travel: Airline flight data
Bill Corner, Campus Safety: Transportation data
Lauren Grimley, CERF Intern: Data collection and report compilation
Gail Heffner, Director of Community Engagement: CEAP data, FAR analysis
Don Hershey, Food Services: Local food data
Matthew Heun, Engineering Department: CERF Manager
Henry Kingma, Physical Plant: Recycling and waste data
Matthew Moore, Food Services: Local food data
Nola Nielsen, Physical Plant: Fuel data
Jack Philips, Physical Plant: Water data
Cheryl Roels, Campus Safety: Transportation data
John Sherwood, CERF Intern: Data collection and report compilation
Dan Slager, Physical Plant: Energy, water, and building square footage data
Geoff VanBerkel, Physical Plant: Fertilizer data
Dave Warners, Biology Department: Native Plant Growth

—ESC, April 2015