Campus Sustainability Assessment

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Squint harder to read this.
What have I done at the Office?
What have I done at the Office?

Besides make this power point...
Tasks, Projects, and Assignments

- Office for Sustainability’s History
- Focus: Metrics
- ???
- Other Experiences
The Office for Sustainability’s History

- Reviewed:
  - Climate Action Plan (CAP)
  - Green House Gas (GHG) Emissions Inventory
  - 2012 Highlights Report
  - STARS current & past editions
Climate Action Plan

- Steps to a Carbon Neutral University
  - Increase Efficiencies (Locally and Supply Chain)
  - Reduce, Reuse, Recycle
  - Invest in Alternative Fuel Sources (Solar, Wind, Biofuels)
  - Increase Electric Vehicle Infrastructure
  - Carbon Offset Measures

http://www.wmich.edu/sites/default/files/attachments/1028-cap.pdf
Green House Gas Emissions Inventory (2012)

- Clean Air – Cool Planet
  - Tracks gross CO2 emissions and breaks down emissions by activity
- Key Findings:
  - 107,454 metric tons of CO2 in 2012 (118,448 short tons)
    - ~ 7,896 Metro Transit Buses @ 15 short tons each
    - ~ 47,379 SUVs @ 2.5 short tons each
  - 5.4 metric tons of CO2 per full-time student
    - ~ Two SUV’s each
  - 14.9 metric tons of CO2 per 1000 sq. ft. floor space
    - 13 steps x 13 steps is approximately one bus @ average 2.6 ft/stride
  - Natural Gas Power Plant (66k), Commuting (15.5k), Air Travel (6.4k), Solid Waste (6k), etc...
  - [http://rs.acupcc.org/ghg/2716/](http://rs.acupcc.org/ghg/2716/)
Green House Gas Emissions Inventory (2012)
Projected GHG Emissions

- Reduce Commuting (Blue), Purchased Electricity (Pink), Stationary Combustion (Green)
- Increase Air Travel Offsets (Grey)
2012 Highlights Report

- Catalogs yearly progress for the Office for Sustainability and the University
- Showcases activities
  - SSG, Sustainability Across Research and Teaching Initiative (SARTI), CAP, EcoMug, Consumer Food Waste Management, Bernhard/Schneider Recycling Research Programs, EV Infrastructure, The Bike Stable, FYS Videos, Student Sustainability Survey, Oil to Mowers, Sustainability Assessments, PUSC, Gibbs House, Student Farm, Dashboard Behavior Change, Reduction/Reuse/Recycling Efforts, Campus Hydration Stations
- Plans for the future
  - Press on!
  - Invest in alternative fuel sources & decrease fossil fuel consumption
Bonus:
Bonus:

I’ve convinced Jeff it is possible to read lengthy documents on a smart phone
Metrics

- Measurement Systems
  - “Green Report Card”
- Identify opportunities for growth at WMU
  - Gains in sustainability and global recognition
- Collect, categorize, and manage data
  - Building and managing searchable databases
STARS

- Ongoing, throughout the year
- Opportunities for Advancement:
  - Curriculum - Undergraduate, Graduate, General Inclusion
  - Increase Faculty Involvement with Research
  - Increase Alternative Transportation Possibilities/Purchasing - EV, Hybrid, Non-Motorized
  - Decrease Percentage of Commuters (esp. single drivers)
  - Implement Bike Sharing, Showering Facilities
  - Carpool Matching Program
  - Telecommuting Opportunities are Non-Existent
  - Investor Responsibility Committee
- Lessons Learned:
  - Purchasing Policy – Computers, Cleaning Supplies, Paper
  - 37% of Students use Non-Motorized Transport
  - 30% of Student Commuters are Solo Drivers, 77% of Employees
CURVEBALLS!!!

- University of Indonesia Green Metric
- Sustainability Walking Tour
- Organizational Hierarchies
University of Indonesia (UI) Green Metric

Opportunities for Advancement:

Lessons Learned:
- 38.24% of Campus is some form of planted vegetation (includes lawns, gardens, green roofs, internal planting)
- 34.55% of Campus is a non-water-retentive surface
- 9.9057% of University budget is for sustainability efforts
- 0.02% of total organic waste is composted
Sustainability Walking Tour Research

- Compile Info on Key Campus Features
- Notable Features / Key Insights / My Favorites
  - 93% of material from Old Sangren Hall was diverted from the landfill! (29,000+ tons), 32% was recycled
  - Sangren Hall’s roof top solar array is approximately five times the size of Miller’s, at 232 kW
  - Wood Hall’s 22 kW solar test bed
  - The Miller Solar Array is 50 kW and has micro-inverters that make it awesome... and efficient
  - Zhang Archives’ geothermal heating/cooling
Organizational Hierarchies

- Break down and categorize activities done by WMU and OfS
  - Governance, Administrative, Structure
    - President’s Committee, Climate Action Plan
  - Internal Operations
    - Purchasing/Sourcing, Curriculum, Policy
  - Community Outreach
    - Collaborations, Metrics, Bike Stable
  - Research
    - SSGs, Green Tech Research Program
Other Fun Things/Learning Experiences

- Bronco Bash & Green Team
- National Campus Sustainability Day (NCSD)
- Gibbs House (would take a slide show of its own...)
- Aquaponics, Student Garden
- Bees! via Students for a Sustainable Earth

Not a honey bee.... 😞
The Best Part:
The Best Part:
I got a chance to meet all of you amazing people.
Thank you.
I’m not going to bore you with an Emmy acceptance speech, but I could if you wanted.
My first assignment at the Office for Sustainability was researching the past history of the office and WMU, and the present plans for moving forward. This research would lay the groundwork for many of my next steps, and prepared me for my upcoming tasks by giving me the necessary prerequisite knowledge on the many facets of our university’s sustainability efforts. To begin this work, I reviewed the Climate Action Plan, the Green House Gas Emissions Inventory from 2012, the Highlights Report of 2012, and the Sustainability Tracking, Assessment, and Rating System (STARS) from AASHE.

The Climate Action Plan (CAP) outlines the necessary steps to a carbon neutral university. It does so by analyzing our current green house gas (GHG) emissions from a multitude of sources. The CAP identified that stationary combustion generated onsite or purchased from the local power company, commuting emissions, and air travel are our biggest emissions sources. The main steps outlined in the CAP to move forward are to improve efficiency across campus, improve the percentage of material that is either reduced, reused, or recycled, and to increase the amount of energy obtained from renewable energy sources, such as solar, wind, and biofuels.

The GHG Emissions Inventory of 2012 was another crucial piece of information to review, and much of the information obtained via this report was disseminated via other pieces of work by the office and WMU. The report was done via Clean Air – Cool Planet, and tracks the CO2 emissions from each source based on user input.

The Highlights Report from 2012 outlines a huge number of activities conducted by both WMU and the OfS. It catalogs yearly progress of previous ventures, outlines goals for the future, and presents the wealth of good that results from our efforts with sustainability.

The STARS metric is one of the main reasons I was hired on, and an ongoing
continuum. The STARS metric is an extensive campus sustainability assessment, which involves collecting data and passing it on to the STARS review & ranking board. STARS is beneficial to any large institution to self-assess their sustainability, compare it to others in the global community, and to gain a more global recognition. In order to complete STARS, Jeff Spoelstra and I have been parsing through past information and collecting new information as needed. The past information that was reviewed consists mainly of the recent history of the Office for Sustainability, along with activities and programs at WMU, mentioned in the first paragraph. As we collect this data, we also organize it for future use via searchable databases in Excel, or Word, and will upgrade to another system if we can find a more appropriate solution.

The University of Indonesia (UI) Green Metric was a sort of surprise given to Jeff and I, but we handled this curveball as if it were a slow pitch across center plate. Once again, the purpose of metrics is self-assessment, comparison, and global recognition. Like we continue to do with STARS, we collected data from past sources or found it ourselves, and compiled all necessary information for submission. We collected and saved the necessary source material used in the survey, and compiled search terms for future use.

Another task I’ve spent time on is researching and writing for the Campus Sustainability Walking Tour, in which I web crawled, emailed, and physically searched for data to use to describe the list of features provided. This tour map provides interested parties with an easily accessible list for self-guided or guided tours, and is an excellent form of outreach. Currently, maps are available from the Office for Sustainability and will soon be available to anyone online.
Climate Action Plan:  
http://www.wmich.edu/sites/default/files/attachments/1028-cap.pdf

Green House Gas Emissions Inventory:  
-- http://rs.acupcc.org/ghg/2716/

2012 Highlights Report:  

STARS 2.0:  

University of Indonesia Green Metric:  
http://greenmetric.ui.ac.id