Annual Report 2013

Facilities Management Department
A Division of Business and Finance

Western Michigan University
# TABLE OF CONTENTS

**OUR VISION** ..................................................................................................................................................3

**A MESSAGE FROM THE AVP FOR FACILITIES MANAGEMENT** .................................4

**ADMINISTRATION DIVISION**

- BUSINESS OPERATIONS UNIT...........................................................................................................6
- INFORMATION TECHNOLOGY UNIT .........................................................................................8
- LABOR RELATIONS UNIT...........................................................................................................11

**PLANNING DIVISION** ..........................................................................................................................13

**PROJECTS AND CONSTRUCTION DIVISION** ................................................................................15

**ENGINEERING DIVISION** ................................................................................................................17

**OPERATIONS DIVISION**

- BUILDING CUSTODIAL AND SUPPORT SERVICES UNIT .................21
- LANDSCAPE SERVICES UNIT .................................................................................................23
- MAINTENANCE SERVICES UNIT .............................................................................................35
- ROBERT BEAM POWER PLANT UNIT ....................................................................................38
- TRANSPORTATION SERVICES UNIT .......................................................................................43
Our Vision

**Western Michigan University**

**Our vision is to be an exemplary higher education facilities management organization.**

We will be known for:

- Excellent service to the University community
- Excellence in stewardship of the campus environment
- Professional and effective communication
- High standards for professional and personal accountability
- Practicing sustainable development and management of campus resources

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**Administration**

It is our vision to lead and provide support services to FM Divisions and Units so they are successful.

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**Planning**

It is our vision to be forward thinking partners in the future development of the physical campus, exploring bold solutions and dynamic approaches to implement the university’s mission and goals while balancing the interests of the various members of the university community.

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**Projects**

It is our vision to design and deliver superior projects through creative problem solving, knowledge, expertise and effective project management.

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**Engineering**

It is our vision to build facility excellence through innovation, state of the art technical support, expertise, and collaboration.

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**Operations**

It is our vision to exceed our customer’s expectations through responsive, caring, and fiscally responsible service.
This past year has proven to be one of change and focus on the University Strategic Plan. Our campus footprint continues to change with capital projects, and our human resources have changed with new employees and a new campaign on customer service. The "WEcare" program is designed around the concept that, as Western Employees, we care about our service to our customers, and we care about measuring our performance for continuous improvement. Our Facilities Management (FM) team was also focused this past year on one of the major University goals that measures our sustainability performance -- The Sustainability Tracking, Assessment & Rating System™ (STARS).

All of the FM Divisions and Units are proud of their accomplishments this past year. This annual report provides highlights of their achievements. Perhaps more importantly is how each FM area supported one another to improve service or efficiency as a broader team.

The Planning Division was active with East Campus, Fountain Plaza, Residence Hall, Medical School, and Ice Arena projects as well as the Extended University Program study and the annual Five-Year Capital Outlay Plan.

The Projects and Construction Division demolished Sangren Hall, the Barber Shop and Noble Lodge. They completed Western View II apartments, the Western View Clubhouse and the Archives building. Other significant projects included the Fountain Plaza and the College of Arts and Science Advising Office renovation.

The Engineering Division has been very active with energy conservation, implementing storm water grant projects, road and utility improvement projects, and numerous process improvements in the Utility and Maintenance areas.

The Operating Units had many accomplishments. The Power Plant earned the CACUBO Best Business Practice Award and made significant gains in energy production efficiencies. Labor Relations completed a three-year contract with the MSEA bargaining unit. Maintenance Services and Building Custodial and Support Services (BCSS) merged the lamp replacement program into an enhanced Preventative Maintenance Shop. FM IT completed a major software change by moving our CMMS software from a desktop enterprise system to a web-based system. Landscape made improvements in athletic grounds, mulch and flower beds, and earned the Tree Campus USA award. BCSS instituted many improvements with employee training, customer relations, and internal communications. Transportation upgraded its vehicle diagnostic technology, process improvement with campus emergency generators and collaborated with the Clean Energy Coalition with the Michigan Fuel Forward Program. Maintenance processed 30,038 work requests, 28,526 service calls, and 18,572 preventative maintenance work orders.

Facilities Management is also proud of our employees who were recognized for special accomplishments, continuing education, and certifications. We had two management staff earn their MPA, and an apprentice earned the national Glenn Bivin's Excellence in Apprenticeship Award. We had directors attend APPA leadership training and many employees achieved certification in their respective disciplines. We are also proud to have one of our employees elected to the Professional Support Staff Organization. While FM has stewardship responsibilities for our campus physical assets, we also take great pride in our human assets.
Administration Division

Business Operations

The following is an overview of Facilities Management projects and each Division and Unit’s budget and employee count.

### FM PROJECTS JANUARY 2013-DECEMBER 2013

<table>
<thead>
<tr>
<th>Total Number of Active Projects</th>
<th>519</th>
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<tbody>
<tr>
<td>Total of Project Budgets</td>
<td>$281,037,645.94</td>
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<tr>
<td>Total Billed</td>
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### BUDGETS & EMPLOYEE INFORMATION

<table>
<thead>
<tr>
<th>Division</th>
<th>Budget FY 2013</th>
<th>Benefit Eligible Employees</th>
<th>Non-benefit Eligible Employees</th>
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<tbody>
<tr>
<td><strong>Planning</strong></td>
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<tr>
<td>Maintenance</td>
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<td>Custodial</td>
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<td>Transportation</td>
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<td>Power Plant</td>
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<td>Landscape</td>
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<td><strong>Operations</strong></td>
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<td><strong>Administration</strong></td>
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<td>Network Services</td>
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<td>$894,094</td>
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</table>
Information Technology Unit

Accomplishments

- VMWare virtual machine infrastructure
- Purchased multiple physical servers to be members of the VM cluster
- Purchased VMWare licensing, installed and configured on new hardware
- Deployed dozens of VMs (virtual machines) on the new cluster
- NetApp storage (primary disk store for Facilities Management)
- Finalized installation and configuration of storage
- Created various shares to be able to move data into
- Began daily pre-copy of Novell data onto NetApp
- VMWare virtual machines storage is located on NetApp store
- Famis upgrade
- Supported Grants and Contracts for space use survey
- After survey was complete, began Famis upgrade
- Built servers for Famis Xi production and testing environment
- Accruent upgraded data and software to the newest version of Famis
- Prepare AutoDesk 2013 suite for installation.
- Upgraded desktop anti-virus software Symantec Endpoint Protection (SEP).
- Two software updates to WMU Maps.
- Finalized migrating reports from old system to web-based
- Assisted with various large software projects within Facilities Management:
  - MapGuide Integrator, GIS web based map tool install.
  - WinPM, electrical metering software upgrade.
  - SkySpark, building commissioning software install.
  - Further GIS/SQL server integration
  - Western View construction camera
  - Division wide phone upgrade.
  - Member of Electronic Change Control Committee (ECCC)
  - Member of E-mail & Collaboration Analysis Project (ECAP) functional team
  - WebTMA upgrade
  - Formed a small focus group to look at and evaluate upgrading to WebTMA
  - Reviewed and decided to begin migration
  - Began work on migration plan
• Began execution of migration plan
• Various webpage updates
• 2013 Parking map update
• Continued Windows 7 rollout.
• Begin cutting over smaller groups to WADE active directory login instead of Novell
• Collect and generate reports from Classroom and Space Audits
Labor Relations Unit

Accomplishments

• Participated in interview panels for multiple positions: Business Office, Power Plant, Maintenance, and Landscape. A critical component was to ensure that employment laws and diversity standards were respected.

• Worked with AVP Warren Hills in developing managerial/supervisory sessions for all FM supervisors and managers; designed contract administration training with Director of Labor Relations Abdul-Mutakallim. This training was designed for skill practicing of administering the collective bargaining agreement and to fully discuss and apply the disciplinary process.

• Implemented the work of the FM policy committee that took the multiple policies where redundant and confusing, which started as over 25 policies, and reduced to nine. Trained supervisor and managers in the policies (part of the supervisory series).

• Surveyed the FM employees who attended the first WEcare program; the response rate was exceptionally high and there were areas for improvement that were implemented based on the employee feedback.

• Continued the WEcare program with the presentation of Phil Hedgpeth, who presented to the FM employee population; while not all were able to attend, the attendance was substantial and positively received.

• Participated in the MSEA negotiations and reached an early settlement; the sessions were positive, efficient and was overwhelming passed by the Union.

• Made major inroads in the staff development plan for the Power Plant.

• Assisted in transitioning to an expanded relief shift at the Power Plant, which is a huge step for recruitment and retention.

• Began a weekly directors meeting with specific goals and a true sharing of the workload.

• Worked with the Director of Labor Relations to implement a number of critical issues: sick leave letters. AWOL instances and new procedures for the annual leave bank system.

• Advised BCSS with a total reorganization of crews and work processes; the BCSS management did a stellar job of creating was a model example of working through the issues with the Union prior to implementation.
• Worked with Projects and Construction to more efficiently deal with subcontracting issues.
• Continued leadership role on the executive boards of the Kalamazoo Area Labor Management and Michigan Labor Management Association.
• Developed an ongoing relationship with the Office of Institutional Equity by working through a number of difficult issues.
• Worked closely with Management and Union to engage the assistance of Helpnet; with a good number of positive outcomes.
• Participated in ongoing professional development: Miller Canfield annual employment seminar, Healthcare reform act, the Michigan Management Association annual conference, monthly KALM membership meetings.
• Worked closely with AFSCME leadership to resolve multiple grievances.
Planning Division

Accomplishments

- Western Michigan University’s School of Medicine project design.
- New Ice Arena study.
- Fountain Plaza phase one design.
- New Residence Halls program and schematic design.
- A solution/approach for East Campus.
- Extended University Programs in Grand Rapids facility and program study.
- Updated the Five Year Capital Outlay Plan.
Projects and Construction Division

Accomplishments

• Demolition of Sangren and Site development – completed on time and within budget – Complete 100 per cent
• Western View Two – apartments completed by August 15, below budget Complete 95 per cent
• Zhang Legacy Collection – completed by September 1 and within budget Complete 100 per cent
• Conduct design charettes for projects and forward to upper administration Complete 100 percent
• Improve communications with clients and small projects division – calls have been reduced 50 percent. Goal is accomplished by 50 per cent.
• Measure and report outcomes in the WEcare initiative – the form has been developed and ready to send to clients. Goal is accomplished 25 percent
• Complete data collection for STARS initiative – complete for demolished buildings and construction and ongoing with new work. Goal is 95 percent complete.
Engineering Division

Accomplishments

- Implementation of CT Vista water treatment software
- Led conversion of lighting in Office of Sustainability, CEAS Parking Deck
- Led conversion of Halide to T5 in Paper Coating Pilot Plant
- Substantially completed GF conversion of T12 to T8
- Repaired steam leak in vault sc-70
- Contracted for engineering and construction on 3 parking ramps, Michigan Avenue, and parking lot 22
- Installed stamped concrete crosswalks on Michigan Avenue
- Installed new lighting on Valley drive
- Initiated construction on 5 BMP storm water grant project
- Decommissioned utilities to McCracken Hall and select buildings on east campus
- Managed fast track replacement of chiller and roof top unit at Seelye Center and Seibert Administration building respectively. Design and co construction completed within three months.
- Actively participated in design, construction and start-up activities associated with Zhang Legacy facility, new Residence Halls and the Valley Dining facility. Duties include: meeting with design professionals; review of design documents and shop drawings; site visits and meetings; start up and commissioning activities.
- Provided technical support for Southwest Regional Center boiler replacement and drawing review.
- Managing design for Bernhard Center air handling unit replacement for this winter.
- Completed the 10-month near end warranty walk-through for Sangren Hall.
- Continually tracking all warranty work orders for Sangren Hall for completion and closed.
- Western View Apartments Phase 1 commissioning and training of FM staff.
- Developed functional testing forms for Seelye Athletic Center air-cooled chiller project.
- Accepted the duties as document room supervisor on an interim basis.
- Developed checklist for maintenance services/operations first response.
- Continually tracking all warranty work orders for Western View Apartments Phase 1 for completion and closed.
- Zhang Legacy Collection Center commissioning and training of FM staff.
• Integral part of WMU BIM execution plan, and implementation on future projects going forward.
• Utilizing the BIM 360 Glue application for iPad on Zhang Legacy Collection Center for maintenance services/operations.
• SRC high bay fixture replacement
• Switchgear maintenance
• Bernhard Center - Substation replacement
• Renovation of the Valley 3 D/S cooks freezer and cooler and moved the condensing units to be air cooled and up on the roof of the kitchen, rather than expensive water cooled equipment. Also purchased and installed new "Alto Sham" ovens to replace the older steam operated Combi-Ovens at Bernhard Center and COE kitchens.
• Installed a "gas pump" for natural gas serving the Kohrman Jewelry Lab torches to replace a gas pump that ran 24/7/365.
• Replaced refrigeration compressors and cleaned up refrigeration systems from a number of burn outs, replaced electrical contactors to proper size and phase/voltage monitors to prevent future burn outs and system contamination in the Lawson rink dehumidifiers. Helping to reduce operating costs of the facility.
• Finished window a/c upgrade on a/c's at Ellsworth Hall. Whole building now complete.
• Organized and managed cooling tower refurbishment at SRC and Friedmann Hall to support summer cooling season.
• Completed absorber chiller tubing replacement at Kohrman Hall and Friedmann Hall.
• Continued chiller plant performance metering upgrades’ three plants completed.
• Managing chiller maintenance contract; consulting on tower chemical treatment.
• Elmwood apartments had three projects
  o Continue replacement of through the wall a/c's for the apartments got about 1/3 completed.
  o Began replacement of gas stoves in kitchens of apartments, got approximately 1/3 complete
  o Continue replacement of domestic hot water heaters from steam fueled heaters to natural gas hot water heaters. Completed 5 of the 16 buildings. Primarily due to steam condensate lines underground leaking and costly replacement every few years.
• Assisted Senior Engineer with first comprehensive condition assessment of Campus Roads and Parking Lots.
• Campus Ground Water: Oversaw the installation of nine ground water monitoring stations used to monitor and model ground water depth across campus.
• Trained Supervisor staff on use of GPS data collector for Natural Areas Data Collection.
• DPS – Parking Map, Coordination and data support to develop annual parking map.
• Updated Template Maps to provide better cartographic display and turn around common requests quicker.
• Add a Niagara AX BAS server and JACE as part of a long term upgrade. Both are on-line and two people have been to certification school.
• Setup chiller utility summary screens for the BAS graphics.
• Update DG15-9 control guidelines.
• Replace heat exchanger control valves in Britton and Hadley.
• Install controls on Makeup units in Ackley and Hadley.
• Install controls for Bernhard Test Kitchen.
• Address IT alarm issues at CEAS.
• Create solar array dashboard for Sangren Hall.
• Support several projects: Sangren Hall, chiller upgrade at Seelye, Honeywell energy audit, Zhang Legacy Collections Center, Replacement of Seibert RECU-1, installation of cooler/freezer monitoring at Burnhams, installation of Davis Dining makeup unit, Lawson, remodeling of Bookstore, design of new residence halls.
• Work with Siemens to update metering software and system.
• Ongoing system maintenance and improvement of electrical metering system.
• Support several fire system upgrades: Fetzer, Dalton Center, Residence Hall.
• Kanley Chapel clock system repairs.
• Completion of campus switchgear maintenance.
• Completion and support of Bernhard transformer replacement.
• Electrical support for Sangren PV array.
• Installation of new electric metering for Office of Sustainability.

**Professional Development**

• Manager of Energy Administration earned LEED AP credential
• Completed Fred Pryor onsite Managing Multiple Priorities, Projects and Deadlines training (.6 CEUs)
• Completed What’s Behind the W? training series
• Participated in Career and Student Employment’s 2013 Summit (“Supervising Students”)
• Elected President of the Professional Support Staff Organization
• Participated in CFTA Conference San Antonio
Operations Division

Building Custodial and Support Services Unit

Accomplishments

- Management team (director, managers, supervisors) received training in basic human resource management including discipline, grievance procedures, diversity awareness, and bargaining contract administration.
- FM employee handbook was completed through cooperation of maintenance services and landscape services. Policies were consolidated to one document, referred to main WMU HR employee manual or specific to department.
- Communication was improved among shifts by holding combined supervisory meetings, combined departmental meetings and increasing feedback from first to third shifts. Communication was directed to focus on departmental vision.
- Customer relations were improved by:
  - Providing building coordinator survey- results were compared to prior year and show
  - Cleaning frequencies and expectations have been published on BCSS website.
  - Customers (building coordinators, key building occupants) have been met with on a regular basis increasing the feedback communication.
- New employee training program has been completed with orientation checklist, a new HR campus orientation day, and a dedicated training supervisor.
- BCSS website has been maintained and updated throughout the past year.
- American School and University Magazine’s “Green Cleaning” award has been applied for.
- Specialty team cleaning (a.k.a. Process Cleaning) has been implemented into Rood and Everett.
Landscape Services Unit

Accomplishments

Replaced/Repaired and Patched Steps in Several Locations

- Haenicke Hall connecting to Wood Hall; tripping hazard removed/patched
- Removed/patched tripping hazards along West Michigan Avenue
- SRC; tripping hazards removed/patched
- Miller loading dock; patched steps
- Brick on Miller Auditorium verandah steps
- French Hall; patched, re-coated slurry seal at entrance steps
- Valley III, north entrance; re-poured walk and added handicap curb cut
- Valley Drive; removed light pole bases and re-poured walk in several locations
- Rebuilt gravel pathway by adding drainage geo-text system

Hardware, Fencing & Furniture

- Repaired chain link and decorative fences at numerous locations:
  - Several small sections along the MDOT non-motorized path
  - Davis Street practice fields
  - Valley III; west side along property line
  - Asylum Lake perimeter fence
  - KCMS perimeter fence
  - Valley I Lot 54; removed gate, added permanent fence as well as privacy slats
  - Gilmore House
- Various work orders for minor hand rail repairs throughout the year
Landscape Enhancements

- Re-landscaped Areas:
  - Sindecuse front entrance, hillside, and around to the doctors’ lot/entrance
  - Valley III Eldridge-Fox front entrance area
  - Fetzer back patio area, including a new water feature

- Landscape Renovations at several locations:
  - Rood Hall sunken garden
  - Lee Honors north side perimeter area
  - Howard Street/Oakland Drive WMU entrance sign
  - CEAS Adams outdoor sign board; returned area to a prairie meadow
  - Main entrance to BTR Park
  - Kanley Track area; added rock borders which eliminated maintenance issues
  - Davis Street hillside bordering sidewalk and practice field; native plantings installed which require minimal maintenance
  - NW corner Knauss Hall; new memorial tree
  - Bernhard Center entrance sign; added colorful perennials and grasses
  - Several areas around Read Fieldhouse; expanded perennial and grass beds
  - Lot 54, added plants to screen and help buffer noise for our good neighbors
  - Sangren water feature
  - Gilmore House, north side
    - Trees, perennials, rock, landscape lighting
    - Granite patio ‘leveling’

- Direct involvement with several major landscape improvements related to building projects including:
  - Sangren, north side; new landscape installation
  - Legacy Collection; new landscape installation
  - WVA-II; new landscape installation
  - Miller Fountain Plaza; additions to existing landscape
  - Varsity Soccer Complex renovations; additional drainage, parking, and new varieties of playing field grass
  - New residence halls; design phase
  - East Campus; design phase
  - Native landscapes being installed at storm water retention projects:
    - Lawson
    - Schneider
    - Power Plant

- Continuation of our dumpster painting program, another 40 units were painted and redistributed throughout campus

- Removed graffiti as it appeared; hot spots continue to be East Hall, Howard Street bridges, walks around GV Pond area, and the round-a-bout tunnel

- Sprayed Round-up to control weeds at campus shrub beds, tree wells, parking lots, curb lines, sidewalks, fence lines, etc.
• Mulched approximately 90 percent of campus shrub beds and tree wells using shredded bark
• Summer parking lot sweeping accomplished which will help keep contaminants and fines out of the storm water system; seven tons of fines were removed from lots before reaching the storm drains
• PLM applications for algae at GV and CEAS ponds

### Annual Flowers

- Installation of 8,000 square feet of annual flower beds:
  - The 3-D floral peacock at Miller Circle Drive
  - Miller Circle Drive
  - Chemistry Building/Waldo Library
  - Haenicke Hall
  - Schneider Hall/Fetzer Center
  - Gilmore Theatre
  - Lee Honors
  - Bernhard Center
  - Kohrman Hall
  - Welborn Hall
  - Trimpe Building
  - Moore Hall
  - CHHS
  - 1201 and 1219 Short Road
  - Valley Residence Halls
  - Draper-Siedschlag
  - French Hall
  - Zimmerman
  - Davis
  - Burnhams
  - Elmwood Apartments
- Installed five flower trees at the Chemistry Building
- 190 plus planters circulate around campus
- 38,000 square feet of existing perennial and grass gardens

### Campus Trees

- Fifth consecutive year to obtain the distinction of Tree Campus USA awarded through the Arbor Day Foundation
- The University Tree Walk was expanded and updated
- Implemented tree assessment protocol to value trees impacted by construction
- Tree History – 1991 to 2013:
  - Trees Planted = 1,742 total
Purchased/planted and/or transplanted from WMU Parkview Nursery
- WVA-II - 66
- Legacy Collection Building – 45
- Sangren north side – 69
- Miller Fountain Plaza – 9
- Sindecuse – 11
- Storm Water Projects; Lawson – 61
- Memorials – 2
- Soccer Complex – 20
- Valley III entrance – 1
- Gilmore House – 7
- Rood Hall sunken garden – 3
- Fetzer – 3
- 297 total trees planted in 2013
  - Trees Transplanted = 304 total
    - Taken from various building construction projects and moved/transplanted to different sites throughout campus
    - Largest group of trees (72) were transplanted due to Chemistry project
  - Tree Take-Downs = 601 total
    - Storm damaged, health and safety hazards
    - Trees in building construction zones too large to safely and/or successfully transplant
    - Largest group of tree removals at one time (65), due to 1992 October snow and ice storm
    - A total of 37 trees were removed in 2013

Natural Areas

MAIN CAMPUS
- 607 hours of tours and adult educational programs
- 647 hours of student volunteer and education hours
- Enhanced native buffer zone on south side of GV Pond by removing invasive species and planting native shrub habitat for wildlife
- 2,000 woodlot trees identified, measured (DBH) and mapped using GPS
- Creation of natural areas’ layer on GIS integrator map

PARKVIEW CAMPUS
- 80 customer hours of tours and native seed collection
- GPS mapping of native plants, invasive species and trees at CEAS
- Development of management plan for existing landscape
- Educational tour of storm water features and native plants
- In the process of developing a native plant tour route from CEAS to Asylum Lake property
- Initializing development of the Atkins Pond landscape plan so this will become a destination point
KLEINSTUCK PRESERVE
48 acre nature preserve owned and managed by WMU
- 560 adult volunteer hours
- 1,200 student volunteer hours
Research
- Kalamazoo Nature Center avian monitoring
- Hanes Fund Grant, ecological inventory
- Soil sampling analysis, MSU grad student
- Monthly photo monitoring at seven sites
- Smithsonian Institution tree monitoring study w/Kazoo School students
Education
- St. Augustine Cathedral School; adoption of an area
- Kazoo School-caring for native planting plots
- Montessori School-caring for native planting plots
- Kalamazoo Math and Science Center (KAMSC)
- Parkwood Upjohn School
- Stewards of Kleinstuck Programs: Hot Cocoa Stroll, Frog Walk, Owl Prowl, Wildflower Walk, History Tour
Ecological Improvements
- Stewards of Kleinstuck held 16 workdays and six days of service removing invasive species, planting native plants, trail improvements, and removing trash
- Identified and cleared brush from overgrown sedge meadow
- Restoration work in over seven acres of Preserve
- Planted 1,000 native plants grown in WMU’s Finch Plant Science Greenhouse, including Paw Paw trees
- Planted 50 native shrubs
- Sowed 20 pounds of native seeds
Infrastructure Improvements
- Working w/City of Kalamazoo to facilitate sanitary sewer maintenance
- Contract w/Keiser and Associates to develop storm water management plan for Chevy Chase entrance
- Discussions w/contractors, and eventually City of Kalamazoo, to improve access at the Stearn Street entrance

ASYLUM LAKE PRESERVE
274 acre nature preserve owned and managed by WMU
- 300 adult volunteer/education hours
- 600 student volunteer/education hours
Research
- Dr. Gill, WMU Biology Department: Effect of anthropogenic noise on the behavior of frogs
- MSU Great Lakes Bioenergy Research Center: Effects of biofuels (switchgrass) on native populations of birds, insects, and the surrounding prairie habitat
FACILITIES MANAGEMENT DEPARTMENT

• Dr. Koretsky, WMU Geosciences Department: Influence of road salt deicers on lake water chemistry and mixing

Education
• Kalamazoo Nature Center “No Child Left Inside” event
• WMU First Year Experience volunteer day
• WMU Environmental Field Geochemistry Course
• WMU Hydrogeology Field Course
• Spring and fall Asylum Lake Celebration Day sponsored by ALPA and WMU Natural Areas Program w/tours and presentations about the plants, animals, and history of the Preserve
• M-TECH class presentation on the natural/native communities of Michigan

Ecological Improvements
• Completion of first phase of spillway erosion control/plantings
• Continuing ecological restoration work by Wildtype, LTD removing invasive species from lakeshore sites
• Additions and maintenance to bluebird nest box trail
• Infrastructure Improvements
• Repair of property line fence on north border of Preserve

Storm Water
• Collaboration with FTC&H to develop a storm water master plan for WMU campus
• Completion of vegetation and infrastructure maintenance plan by Kieser and Associates for future and existing storm water features on campus
• Addition of four new storm water features at Lawson and one at Schneider Hall

Sustainability/LEED-EB Initiatives
• FM Landscape Services achieved certification in the Michigan Turfgrass Environmental Stewardship Program (MTESP)
• Addition of “French fry” mower using Dining Services used cooking oil
• Adhere to all mowing protocols
• Adhere to all fertilizing protocols
  o Non-phosphorus fertilizers used on all campus lawns
  o Compost tea is being used to lessen the impact of commercial fertilizers and build micro-biotic action in the soil
• We are moving towards a pesticide free campus. Two new tools have been introduced in the Green Industry that hold great potential for replacing “heavy duty” pesticides. We’ve just completed our fifth season of not using 24D or similar products.
• Use of IPM Practices for all pest control activities:
  o We apply the least toxic pesticide only after proper protocols are followed using all strategies of IM practices first and foremost. All pesticides are scrutinized by our Environmental Health and Safety department and the director’s approval is needed before we are allowed to use a product. Two major factors determine whether or not a
product can be used; human toxicity and environmental effects. When a chemical is approved, everyone involved receives safety training.

- Adhere to all storm water management protocols including storm water pollution prevention initiatives and maintenance plans.
- Computerization of irrigation systems to the BAS (building automated systems) which uses ET (evaporation rates to water) for “smart watering.”
- Recycle the following materials:
  - Yard waste
  - Wooden pallets
  - Concrete rubble and asphalt
- Our equipment is subject to a strict preventative maintenance (PM) program during the off-season winter months. All landscape services equipment, from Bobcat skid loaders to Workman carts; from riding mowers and push mowers to weed whips and blowers and everything in between are taken apart and repaired and/or in some cases rebuilt (i.e., engines) before the growing season begins.
- Our mechanic keeps a maintenance log on each piece of equipment he services; for PM’s, repairs, and routine maintenance (i.e., oil changes). We can determine the longevity of individual pieces of equipment by reviewing the mechanic’s log. This allows us to prioritize replacements based on costs and operating efficiencies.
- Snow removal tactics:
  - It is now standard practice for new and/or renovated buildings that snow melt systems be installed at all entrances, close proximity steps, and handicap ramps. This covers all the buildings listed: Brown Hall, Chemistry, RCVA, South Kohrman, CEAS, Sangren, and Legacy Collection
  - Landscape Services started researching and reviewing the new liquid anti-ice and deicing tools 11 years ago to see if they could be used in our snow and ice removal operations. Six years ago we were anti-icing our walks and also started pre-wetting some of our bulk road salt. Today, we pre-wet (pile treat) all of our bulk salt supply for roads, lots, and walks. We continue to use anti-icing tactics on sidewalks. We use beet juice at six gallons per ton for a pre-wet and use 80-20 mix; 80 percent natural brine and 20 percent beet juice for anti-icing applications.
  - WMU’s campus includes:
    - 24.6 lane miles of roads
    - 39 miles of sidewalks
    - 60 lane miles of parking lots
    - Total of 123.6 lane miles to de-ice for every snow/ice event. As a point of reference; 123.6 lane miles is like driving two times from Kalamazoo to South Haven and back.
The above reductions/savings are a direct result of pre-wetting our bulk salt with beet juice. Our overall reduction in salt usage is 28 percent since we began using beet juice in 2008-09; and from our peak salt-usage season of 2006-07 (no beet juice). To put this in perspective; for every snow event, which includes post-event re-treating of surfaces due to re-freezing of melted water and light dustings of snow, we use 14.9 ton of salt treated w/beet juice or 29,800 pounds. We use an average of 241.1 pounds. of treated salt per lane mile; whereas we would have used 20.4 tons of untreated salt for every inch of snow, or 40,800 pounds. For 123.6 lane miles of road that would be 330.09 pounds per lane mile of salt on average.

2012-13 Snow Statistics
35 Snow Events
2 Freezing Rain Events
1 Freezing Fog Event
1 Flash Fog Event
1 Flash Freeze Event
64” of Snow
- Use of Beet Juice as Snow Removal Tool
  - Environmentally friendly; 100 percent organic
    - Lower overall lane mile cost; amount of salt usage drops
    - Proven residual effect
    - Begins de-icing process immediately
    - Reduces bounce and scatter
    - Improves melting efficiency rinses solids concentration

*Salt used is comparable to the 2000-01 levels of salt usage (1,285 ton), before the College of Health & Human Services and the College of Engineering & Applied Sciences existed!
Helps prevent black ice
Prevents salt piles from clumping and freezing

Campus Community Expectations
- Roads, parking lots, walks and entrances open and clear of snow and ice by the start of each business day for vehicle and pedestrian traffic

Conditions that Affect Landscape Services Snow Removal Efforts
- A trace to 4” of now before 10 p.m. will be cleared by 8 a.m. the next morning
- A snowfall greater than 6” will take 24 hours to clear after the storm ends
- Early morning snowfall that continues throughout the day hampers our ability to keep surfaces clean and clear, but they will be passable until the end of storm, at which point total clean-up will be completed within 24 hours

Complaints from the campus community are immediately followed up by a supervisor who will contact the appropriate snow removal operator. The concern will be addressed in a timely fashion as work load and weather dictates

Athletics

- Projects
  - Laser graded Hyames and Ebert skins
  - Replaced turf at Waldo and Seelye

- Support for Athletic Events
  - 24 baseball games
  - 24 softball games
  - 8 soccer games
  - 5 football games
  - 9 tennis matches
  - 44 basketball games
  - 4 gymnastic meets
  - 2 indoor track meets
  - 12 volleyball matches

- Support for Athletic Camps
  - Football, basketball, baseball, softball, volleyball

- Support for SRC Events
  - IM softball games; IM football games; IM soccer games; tarps for events in SRC, Lacrosse Club team, and Rugby Club team

- Support for Special Events and Community Events
  - USTA Tennis Tournaments; ITA Tennis Tournament; MHSAA Tennis Tournament; Rocket football; Girls on the Run; community baseball games; Baseball Scout Day; senior softball games; St. A’s track day; Homecoming March Down; Special Olympics; Malaysian Games; high school basketball; NFL Pro Day; MAC Gymnastic Championships; 12 K-College baseball games; WMU Commencement; and Stadium Night

- Employee Training Opportunities
  - Forklift training
  - Hearing protection training
Equipment Improvements

- Replaced four trucks
- New Toro Greensmaster mower for the Soccer Complex
- New quickie tool for treating trees
- New woods core plug aerator
- New compost tea sprayer
- New salt dog; salt spreader for a pick-up truck
- Rebuilt Bobcat/Toolcat
- Various small equipment was replaced as needed; weed whips, blowers, etc.

Support for Special Events & Community Activities

- Sculpture Tour
- Bronco Bash
- Homecoming
- Soap Box Derby
- Campus Classic 5K Run
- Athletic Events
  - CommUniverCity Night
  - Home Football Games (5)
  - USTA @ Sorenson Courts and Welcome Party at Sangren
  - High school baseball rental
- BTR Bike Race
- Student Garden Organization
- Fall Welcome Activities
- Residence Hall Move-In/Move-Out
- Various Residence Hall Life activities
- Tree Walks and Garden Tours for staff and students
- WMU Commencements
- Kalamazoo Holiday Parade
- WMU United Way
- Kalamazoo In Bloom
- Asylum Lake Preserves
- Kalamazoo City Parks
  - Composting on WMU Orchard Property
  - Advising and consultation
  - Kalamazoo Pesticide/Herbicide Advisory Committee
- John F. Kennedy Center Five Senses Garden
- Special Olympics Polar Plunge
- Various Dedication events
- Spring and Fall Into the Streets
- Stewards of Kleinstuck
**Additional Support to Other Departments**

- Coordinate AFSCME uniform fitting/ordering process for FM Department
- Assist Logistical Services by delivering large, bulky items
- Assist Maintenance Services by transporting heavy items and staging equipment
- Pallet recovery/recycling; campus wide
- Assist ESEM w/disposal of research animals
- Assist Parking Services with various needs
- Assist Student Activities with various events
- Assist Athletics with various events and activities
- Assist University Relations with events and activities
- Change flags/banners at Tent Promenade for International Student Services
- Control the American flags at the Tent Promenade

**Departmental Recognitions**

- Coordinate AFSCME uniform fitting/ordering process for FM Department
- Assist Logistical Services by delivering large, bulky items
- Assist Maintenance Services by transporting heavy items and staging equipment
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- Assist University Relations with events and activities
- Change flags/banners at Tent Promenade for International Student Services
- Control the American flags at the Tent Promenade
Maintenance Services Unit

Accomplishments

Personnel

• Three retirements
• Eight new hires – trades
• Two new hires – management

Training/Testing

• Completed 20 training sessions for trades and management (Asbestos, Lift & Fall, Pool Operator, etc.)
• Campus emergency exercise

Collective Bargaining

• Contract Training (9/25, 9/27, 10/9, and 10/11/12)
• Worked with Sindecuse Sports Medicine to update job specific ability test for STH

Service Center

• Developed online tools to improve accessibility and ease of use for customers
• Website improvements (training videos, Bronco FixIt added to Student GoWMU. etc.)
• 30,038 work requests submitted
• Completed 28,526 Service Call type work orders
• Completed 18,572 PM, walk-thru and PM follow-up work orders

General

• Maintenance Services has assumed responsibility for coordinating football games with Athletic Department for FM
• CMMS Transition to WebTMA Transition
• Successful implementation of front loading AFSCME AL and grievance free payroll during transition
• New Sangren Hall - building and site added to portfolio, with all staff training, turnover of materials/documentation, and warranty period successfully completed.
• New Western View Apartments 2 - building and site added to portfolio, with all staff training, turnover of materials/documentation, and warranty period successfully completed.
• Valley III residence hall and dining service rehabilitated for 2013/2014 use.
• East campus demolition preparations and salvage performed
• Hoekje & Bigelow Hall demolition preparations and salvage
• Children’s Place kitchen completely refurbished, several areas painted, along with many other improvements to doors, mailbox, entryways, ceiling, stairs and more.
• Lee Honors College addition turned over to Maintenance Services/Operations.
• 2013 Summer projects included top-down painting of Zimmerman Hall, French Hall lobby and public spaces, and all residence rooms reviewed and serviced
• Summer turnover produced a record number of apartment turnovers that were effectively facilitated with a minimal amount of outsourcing expenses to DOSA
• Replaced 32 street lights, six walk lights, two parking lot lights: All poles are banner ready
• Merged Light Bulb Sustainability Program with Building Custodial into Preventative Maintenance Shop and Implemented Mass Re-lamping Program for general fund areas
• Conducted Annual Maintenance Services “Family” meeting and revised policy handbook
• Summer Outdoor Painting Program – focusing on high profile areas such as entry ways, loading docks, hardscape.
• Summer Space Audit 7th year for General Fund buildings
• Implemented charge back verification process within Maintenance Services for work orders
• Initiated weekly Operating Units directors meeting with Labor Relations Manager for uniformity
• Revised Event Request Form with Standard Cost Estimate for FM operations to utilize.
• Coordination meeting bi weekly with Rec Spo and FM

Professional Development

• Applied and was accepted to participate in the 2013 Everyone Counts Faculty Professional Learning Community.
• Graduated from WMU School of Public Affairs and Administration, Masters
• Renewed membership in the Association for Energy Engineers (AEE)
• Renewed membership for CBCP and EBCP through AEE
• Attended Response to Hate conference at Michigan State University
• Completed 1 year (32 weeks) of Leadership Training. Starting the 2nd and final year September 2013
• Participated for third straight year in the Everyone Counts Faculty Professional Learning Community
• Environmental technician, Scott Keeler, earned certification in Niagara AX
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Robert Beam Power Plant Unit

Accomplishments

Staff Training and Development and Labor Relations

It was another positive year for staff training and development along with the solidification of power plant staffing after a stressful summer of being understaffed from challenges involved in filling the trailing position created through the retirement of former Instrument and Controls (I & C) Crew Leader, Mr. David Prentice. The filling of this position was further complicated by the unexpected resignation of the initial hire part way through his probationary period. We were fortunately able to hire from the existing pool and Mr. David Clark began his career in the WMU Power Plant in January 2013 to finally bring the power plant up to its full complement of authorized positions at the time. A bright spot this past year was the continued impressive development of Mr. Arthur Priest as the new crew leader of the I & C shop, a role he assumed with the retirement of the aforementioned Mr. Prentice. Mr. Priest continues to impress with his growth and confidence in his new position and the many challenges it presents.

Already being thinly staffed and then being down a position during the summer, we were forced to cancel the classroom portion of our apprenticeship training at RMTC (Kellogg Regional Manufacturing and Technology Center) as well as our on-the-job (OJT) training here in the power plant. In addition our ability to approve annual leave was constrained as well. Together this negatively impacted overall operation and employee morale. A proposal was developed and ultimately accepted to address these concerns that resulted in a new position being added to the bargaining here in the plant to better provide for the continuity of training and operations. This new position was ultimately filled in the first quarter of FY 2014 in what is expected to be a major boost to overall morale and the operation.

We are glad to report on one new graduate of the Apprenticeship Program this past year in the person of Mr. Ron Uldriks. In addition, two individuals, Mr. Kevin Bridges and Mr. Scott Bryer, entered the apprenticeship program this past year joining Messrs. Bortolussi, Boyd and Durian already in the program. Mr. Steve Durian is on track to be our next journeymen graduate from the program this coming year. Mr. Arthur Priest also began pursuit of the advanced training program for instrumentation this past year. This is open to graduates of the training program who have achieved journey level status.
A singular highlight and tremendous achievement this past year was in our own Mr. Ronald Uldriks being awarded the "2012 Glenn Bivin's Excellence in Apprenticeship Award" presented by the Michigan Apprenticeship Steering Committee, Inc. (MASCI) to the top apprentice in the State of Michigan from over nine hundred apprentices statewide. This was a great achievement and recognition for the outstanding efforts of Mr. Uldriks as well as the power plant training program and all those who support it.

Another major highlight this past year was to have the power plant training program recognized by CACUBO (Central Association of College and University Business Officers) with a national award for "best business practice" for the skill level achievements and accomplishments of individuals in the program resulting in significant savings through self-performing a number of tasks formerly previously out.

Finally, in the area of Labor Relations we are glad to report that a new three year agreement was successfully negotiated with the local bargaining unit MSEA (Michigan State Employees Association) that also incorporated the university’s revised annual leave policy for the first time. The new position is expected to greatly facilitate the implementation of this new policy going forward.

Looking ahead to next year, the newly added position affords us the opportunity to modify the work shifts such as to finally provide relief to those employees on the "Swing Shift" who currently have to work all three shifts (day, afternoon and night) in the course of a week. This shift has often been characterized as "brutal". In addition, potential new recruits have cited it as a major disincentive to work here. Towards this end, after working jointly through issues with MSEA, we plan to begin implementation of a new 6 man "Relief Shift" in the first quarter of FY 2014 that will incorporate the two individuals from the Swing Shift, the one new position and the three existing employees presently on the Relief Shift. In addition, next year we are looking forward to beginning formal implementation of a new "Staff Development Plan" that combines the retirement of the assistant plant manager position with another bargaining unit position to create several new possible progression paths in the power plant and to provide much needed support to the Chief Operating Engineer. We will look forward to reporting on the results of both these major initiatives next year.

Projects

A continuing trajectory for the power plant is the incremental improvement in plant safety, reliability, redundancy and efficiency. Some highlights from this past year illustrating this include partnering with WMU Public Safety Security personnel on the installation of security cameras for the exterior of the central plant; completion of the maintenance and calibration of all high voltage switchgear and protective relays at both central plant and ERC performed every four years; installation of a new battery charger for the turbine protective relay controls along with the existing unit repaired for use as backup; installation of the first phase of IR (infra-red) inspection windows on plant high voltage switchgear; and finally, various upgrades and additions to the plant data monitoring and control system.
In addition to the central plant, the plant staff also maintains three boilers and three electric drive centrifugal chillers at ERC. Some of the accomplishments in ERC this past year included installation of a new vent valve in the steam supply header; relocation of the variable frequency drive units for the two cooling tower fans inside from their location outside in the yard area where their reliable operation was becoming increasingly problematic; replacement of older style analog protective relays at Bronco Substation with new microprocessor based units (no trips at Bronco this past year!); relocation of the safety relief valve on the deaerator tank to an accessible location directly on top of the tank where it can now be regularly serviced and tested; and finally, plant staff completed in-house a major upgrade to the sidestream filter pumping system that included fabrication of a new pump base, elimination of the belt drive and its replacement with a variable frequency drive.

Special mention needs to be made regarding safety here in the power plant. Despite all of the heavy duty and sometimes hazardous work performed by plant staff, there were again no lost hours on the job from injury or accident this past year as has been the case for approximately the past nine years now. Safety related projects this past year include the installation of a new walkway on the hot lime vessel enabling staff to access the lime injection valves directly without having to climb up and down a number of steps and ladders. Plant staff also completed the platform on Boiler 5 at ERC that also connects to Boiler 4 enabling access to critical relief valves and components without having to utilize ladders. We always look for opportunities to keep our staff off ladders when we can. Finally, plant staff has begun the installation of area gas pressure sensors in the plant that will alarm with the presence of gas as happened this past year when a high pressure gas fitting blew apart inside the plant.

Looking ahead to next year, we plan to continue building on our safety and reliability through upgrades to the turbine gas valves and controls; installation of steam traps on our boiler desuperheaters to facilitate the removal of condensate buildup during layup; further enhancements to our safety valve program; implementation of the new web based TMA (computerized maintenance management program); steam turbine efficiency improvements and upgrading of the feedwater control valves to units 7 and 8.

Production

It's almost hard to believe that the two 5 megawatt gas combustion turbines have been in operation for over 15 years now with the units first going on line in August 1997. Since that time the turbines have now produced over 900 million kilowatt-hours (kW-H's) of electricity and nearly 5 billion pounds of "free" steam (more on that later). As with any piece of rotating mechanical equipment turning at over 14,000 RPM with temperatures approaching 2000 degrees Fahrenheit, there are bound to be challenges and this year was no exception. To their credit plant staff stepped up on several occasions to replace a failed oil pump in one instance and improvise a bearing replacement in another to maintain operation of the turbines and avoid costly demand penalty charges. However, there was, unfortunately, a recurring intermittent tripping problem on turbine 8 that vexed all of us for several months until it was
finally identified as a faulty control signal. Even with these challenges, overall turbine production was still up over one percent from the previous FY to 69.6 million kW-H's continuing a four year run of consistent turbine operation with annual output ranging from 66 to 70 million kW-H's. To put this into further perspective, the total electrical consumption for the East & West Campuses of Western averaged 70 million kW-H's during this same period.

One of things we like to highlight is our heat recovery capabilities here in the plant. Of the total 620 million pounds of steam generated in the plant last year, over 365 million pounds, or nearly 60 percent, was generated through the recovery of heat from the gas combustion turbines. This "co-generation" process begins with approximately 60,000 cubic feet of natural gas entering the turbine combustion section where it turns a power shaft connected to a generator that produces 5000 kW-H's of electricity. The products of combustion of this process consist of nearly 30,000 cubic feet per minute of 1000 degree Fahrenheit turbine exhaust gas which then enters a heat recovery steam generator (HRSG) that in turn "co-generates" 25,000 pounds per hour of "free" steam at 200 pounds pressure. There is still a lot of energy in this high pressure steam that is further used to generate "free" electricity through a steam turbine driven generator. This "free" electricity amounted to 4.6 million kW-H's last year further enhancing the overall operating efficiency of the plant. Literally, on average, 60 percent of the steam utilized on campus is "free steam"!

Overall plant steam and electric production is basically weather driven with steam use peaking in the winter and electrical use peaking in the summer and early fall. The overall results from this past year bear this out. As indicated above, steam production last year was 620 million pounds. This was up some seven percent or 40 million pounds from the year before, however the year before was one of the warmest on record with heating degree days of 5,296 versus 6,312 this past year which was a huge 19 percent increase. Had it not been for the excellent efforts of Physical Plant in efficiently managing the end use of the energy we provide, it's fairly certain the overall generation would have been much higher.

Looking ahead to next year, the engine on turbine 7 will be going out for its 30,000 hour rebuild after which we expect to see two to three percent improvement in its production, similar to what we experienced with turbine 8 after its rebuild this past year. In addition the gearbox on turbine 8 is scheduled to be replaced this December over the winter break. We are also working with Rolls Royce Energy Systems (RRESI) on upgrades to the turbine gas valve assemblies as well as the computer based controls, both of which are approaching obsolescence. We also to look to continue realizing further efficiency gains in the production of energy through continued close cooperation and communication with the Physical Plant.
Transportation Services Unit

Accomplishments

Personnel

This past year there was a major change when our student worker Aaron Corona graduated from Western Michigan University with his Aviation Mechanic degree. While going to school Aaron worked in the garage part time assisting Mike Walenga and Bill Emmert our two licensed Master Mechanics with oil changes and the less technical repairs. Aaron was with us for four years and now works for the College of Aviation in Battle Creek as a full time Aviation Mechanic and we wish him the best of luck. We re-evaluated our work load and decided an additional full time mechanic was needed. Michael Ambs joined the Transportation Services team in mid-December. Mike is a Licensed Master Mechanic and has certifications from both the State of Michigan and the National Institute for Automotive Service Excellence (ASE). If you think he looks familiar it is because Mike worked as a mechanic for Western Michigan University 4 years ago. Mike has a vast amount of experience with all types of equipment and vehicles we have at Western Michigan University and we welcome him back.

Technical Equipment Upgrade

With the ever changing computer systems in the new cars and trucks it has been a challenge to keep up with the new technologies. One of our goals this year was to upgrade our diagnostic tools with a more comprehensive computerized diagnostic system that would allow us to communicate with the more sophisticated global vehicles being produced today. After a lot of searching and comparing we decided to purchase a computerized diagnostic system from Connected Automotive Systems (CAS). This computer system enables us to diagnose GM, Ford and Chrysler vehicles using Original Equipment Manufacture’s (OEM) software just like the car dealerships. We also purchased OEM software for the large trucks we have on campus. The system uses internet connectivity for updates and technical assistance and allows us to connect to the vehicles wirelessly. The system is modular and allows for future expansion including foreign vehicles.
**Generator Service Equipment Upgrade**

Another one of our goals this year was to simplify the process of generator services. Western Michigan University has been gradually adding stationary generators to campus buildings as emergency backup power and they now total 26 stationary generators and two large portable generators. The engines of these generators are serviced by Transportation Services on a semi-annual basis. This spring we purchased a lubrication skid, the skid is a portable unit which is installed in the bed of our service truck. The system runs off the air system of the truck and has a tank that holds 60 gallons of new oil and a tank that holds 60 gallons of used oil. There are two hoses 100 feet long, one for dispensing the new oil and the other for vacuuming out the old oil. This system should make servicing the generators much easier for the mechanics.

**Michigan Fuel Forward Program**

This year we worked with Laura Palombi and the Clean Energy Coalition in the Michigan Fuel Forward program. The objective of this program was to address state and local barriers preventing alternative fuel vehicle adaption and use. The goals were to engage, educate and empower the stakeholders to make policy changes at the state and local level, to establish standards and initiatives as well as training. We completed a data analysis of the Western Michigan University fleet and we now have baseline values for our fleet. Our goal is to evaluate options for alternative fuel vehicles, change behavior and practices, reduce fuel costs, petroleum use and greenhouse gas emissions.

**New Vehicle Purchases**

Every year we evaluate the university fleet and determine which vehicles are in need of replacement. This year we replaced two shuttle buses for the Center for Disability Services, we purchased a new John Deere Gator for Disability Services for Students, 3 new service trucks and one dump truck for Landscape Services.

**Training**

Throughout this last year our mechanics have attended a series of training seminars. These seminars are extremely important and are an attempt to keep the mechanics up to date on the new technologies and designs being created by the car manufactures.

**Web Site Updates**

We updated the Transportation Services web site this year with help from Physical Plant IT. Our on-line transportation request forms used to charter a bus or rent a large truck were evaluated, simplified and designed to be more user friendly. We also added an on-line request form for those driving university vehicles requiring repair or servicing.