

Advancing our Culture of High Performance at Michigan State University

New Administrator Orientation
August 2017

Bolder by Design Imperatives

- 1 Enhance the student experience
- 2 Enrich community, economic, and family life
- 3 Expand international reach
- 4 Increase research opportunities
- 5 Strengthen stewardship
- 6 Advance our culture of high performance**

*“To ensure we are among the best, **we must reach higher**—taking every aspect of our game to a new level of performance in order to achieve the best for society and those we serve.”*

—Bolder by Design

Not Broken, but Boring - Why?

- Complacency – We've been around a long time
- We're not a brash young technology start-up
- We've always done business this way
- Disconnection with the institution's lofty vision
- Comfort with the familiar and fear of the unknown
- Status quo is not always fatal, at least in the near term
- It's possible

William Taylor, Simply Brilliant , 2016

But....

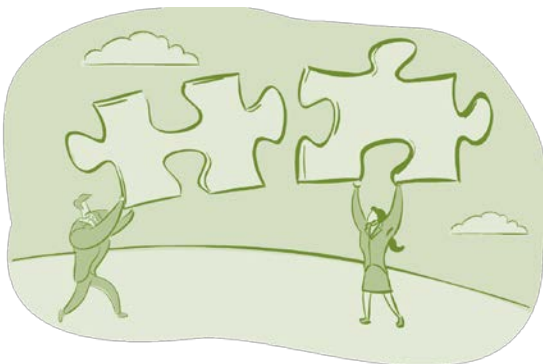
- Average is over*
- Do I want to work in an organization that embraces “average”
- Magnet for the mediocre and the death spiral?

* Thomas Friedman, NY Times, Jan. 2012

High Performing Organizations are able to cope with and exploit constantly changing circumstances

Alignment

HPOs align with the changes occurring outside of their organization, between their own strengths and the areas where their impacts can be felt most.



Adaptability

HPOs can adapt to changes outside the organization, including demographic changes, technological advancements, and changes in funding trends.

Not only are HPOs able to adapt, but they are **driving change through innovation and by developing alternative approaches that maximize their impact.**

They use real-time data to make changes on the front line as well as build a body of evidence-based practices that inform.

Agility

HPOs are agile. They can respond to these changes **swiftly, effectively and in real time.** They are nimble while remaining focused on their intended impact



Our Challenge

Creating an organization that anticipates and responds to grand cultural change

Creating an ecosystem that is

- Safe to espouse and articulate new ideas
- Nimble
- Failures are not always viewed as failures
- Co-ownership of ideas
- Benchmarked
- Continuum of good ideas
- Bias for action

Treating people as one would like to be treated

T.B. Simon Plant: A cogeneration facility making campus steam and electricity



The Challenge: MSU's Energy Imperatives



Facility for Rare Isotope Beams (FRIB)

Requires a reliable 18-20 MW power source on a limited timeline

Reliability and Cost

Low-cost, highly reliable energy strategy that is based on full costing of the infrastructure and long term cost of the operating budget. Preserve debt capacity

Energy Transition Plan (ETP)

Goals for renewable energy, health and the physical environment within constraints of maintaining reliability and capacity for growth

Tightening Regulations

Current EPA coal regulations require an investment in Sorbent Injection by 2017 to provide short-term flexibility. Additional regulations expected

Rising to the Occasion

- IPF established a small group to study alternatives
 - Input sought from everyone in the plant
 - Had conversations with a number of peers outside MSU
 - Sought advice from consultants
 - Systematic review of what is possible
 - Most importantly, no sacred cows

- New substation, duct bank, breaker station
 - \$26M savings relative to Consumer Energy offer
 - Off-peak grid purchase strategy
- End of coal firing, March 2016
 - > 500,000 tons of CO₂ emissions reduction per year
 - Higher efficiency boiler operation
 - Significant reduction of house load
- Gas-only operation
 - Redundant gas supply line for fuel reliability
 - Refurbished boiler 4
 - Gas purchase 5-year layering strategy

- 13.44 MW dc carport solar array
 - Projected \$10 M saving over 25 year lifetime
 - Largest installation in the world
- Geothermal field
- Anaerobic digester
- Energy conservation measures
 - DOE Better Building Program
 - Spartan Treasure Hunt
- **Overall Result:**
 - Greater power reliability
 - Less harmful emissions
 - Overall cost savings: **7%**



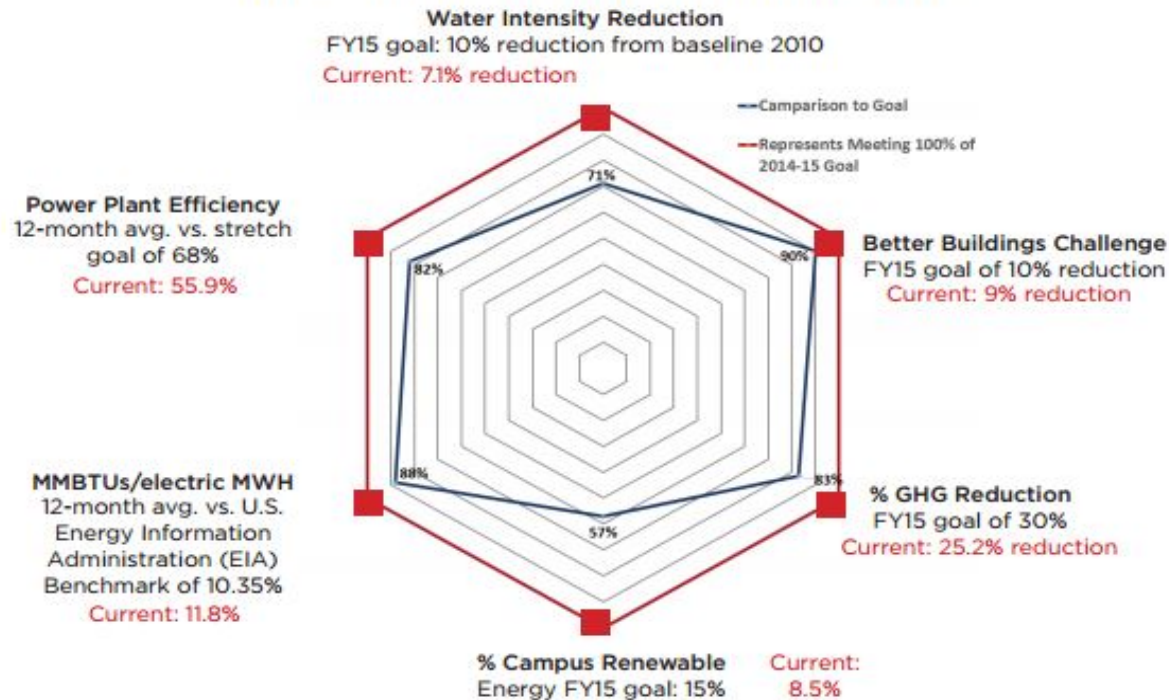
What remains to be done

- Add RICE Engines
- Medium Pressure Steam Boiler

Innovation

CAMPUS STEWARDSHIP

IPF Campus Stewardship Indicators



This graph illustrates the progress made by MSU in relation to the energy transition plan goals and cogeneration facility performance stretch goals. The blue line represents our actual progress as a campus in relation to the stated goal or benchmark.



