



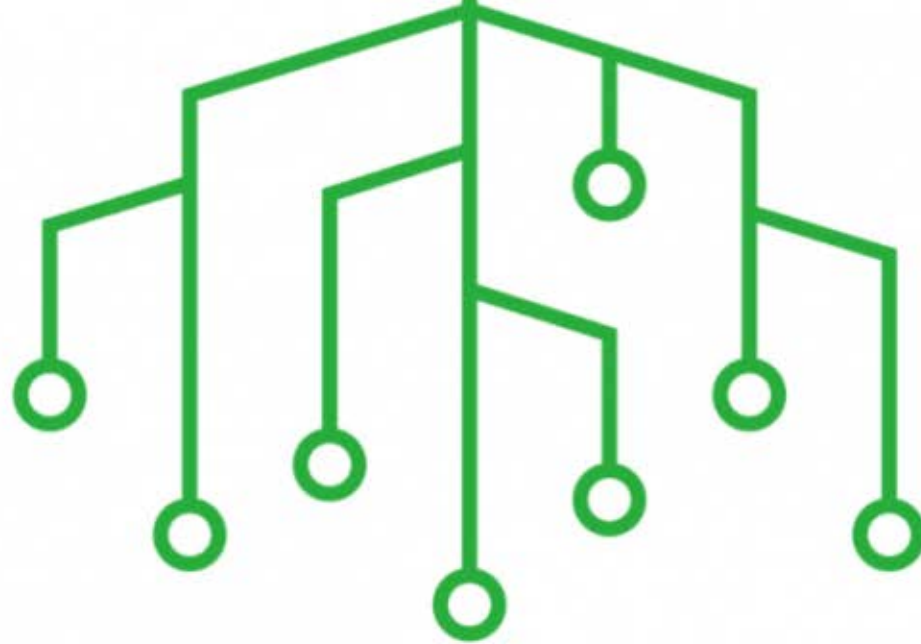
Sustainability at Fermilab

Eric Mieland

2020 Users Meeting

8/11/20

Sustainability Defined



“The capacity to endure”

(Doing things in a way that allows you to keep doing them)

Fermilab's Sustainability History (recent)

Oct
2009

President Bush issues EO 13514, *Fed. Leadership in Environmental, Energy and Economic Performance*, to develop long- range targets and goals.

Jul 2010

DOE Office of Science (W. Brinkman) memo directs the National Laboratory complex to develop planning documents to implement EO.

Aug
2010

Sustainability Work Group established by COO (B. Chrisman) to respond to DOE's call for Site Sustainability Plans. 1st SSP submitted Dec 2010.

Mar
2011

Sustainability WG becomes Sustainability Committee and chaired by COO. First meeting March 2011.

Sept
2013

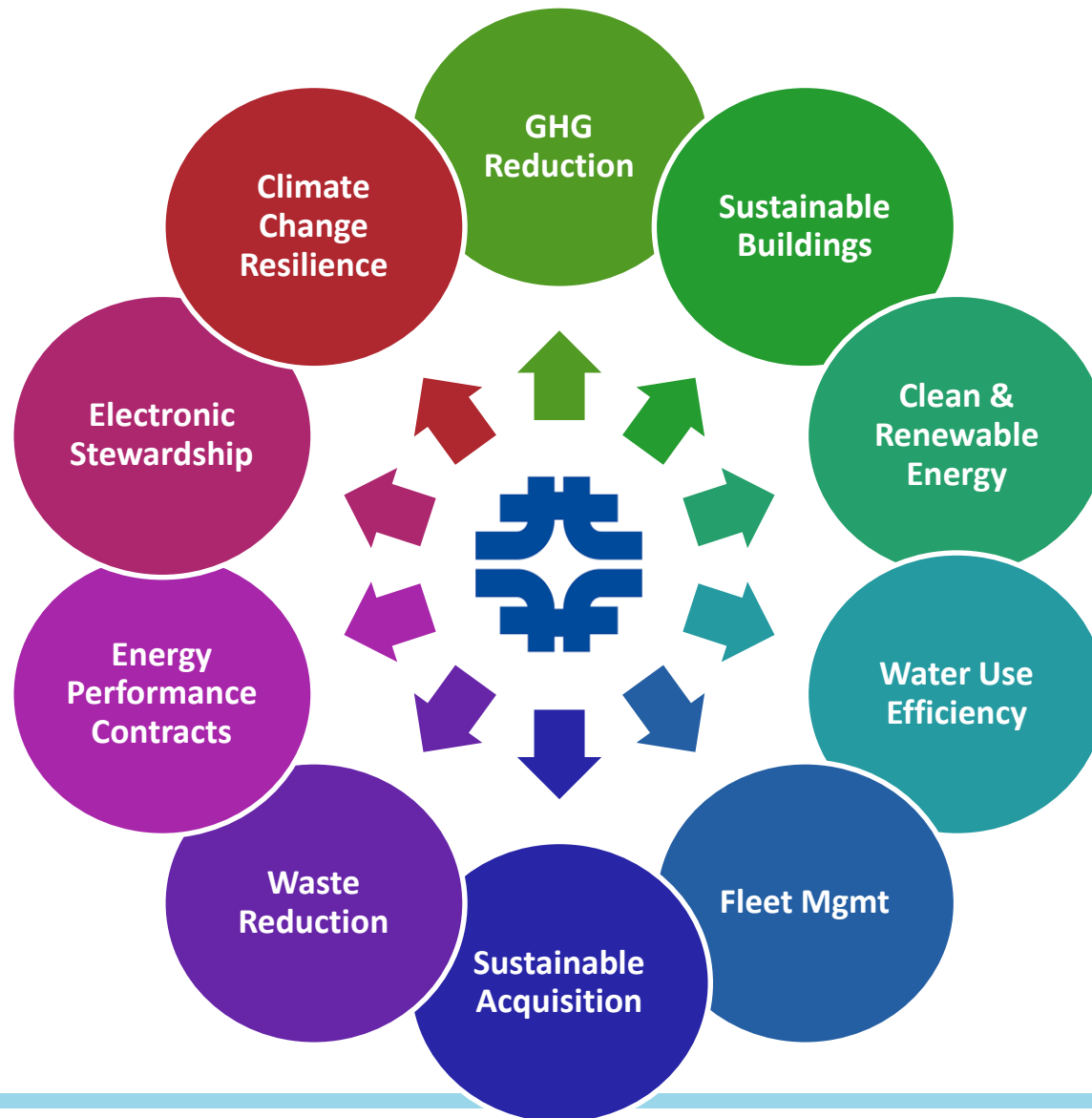
Committee chartered.

Feb
2017

Sustainability Committee becomes Sustainability Management Team, New Charter Adopted

What Sustainability Means at Fermilab

Our Goals



Sustainability Management Team

Purpose

The purpose of the Sustainability Management Team is to oversee progress toward meeting Fermilab's sustainability goals, to advocate the principles and practice of sustainability, and to advise the laboratory on the most effective ways to meet laboratory commitments under DOE Order 436.1. Fermilab recognizes that sustainability goals cultivate good business practices and will aggressively pursue opportunities to improve the sustainability of laboratory operations beyond simple compliance.



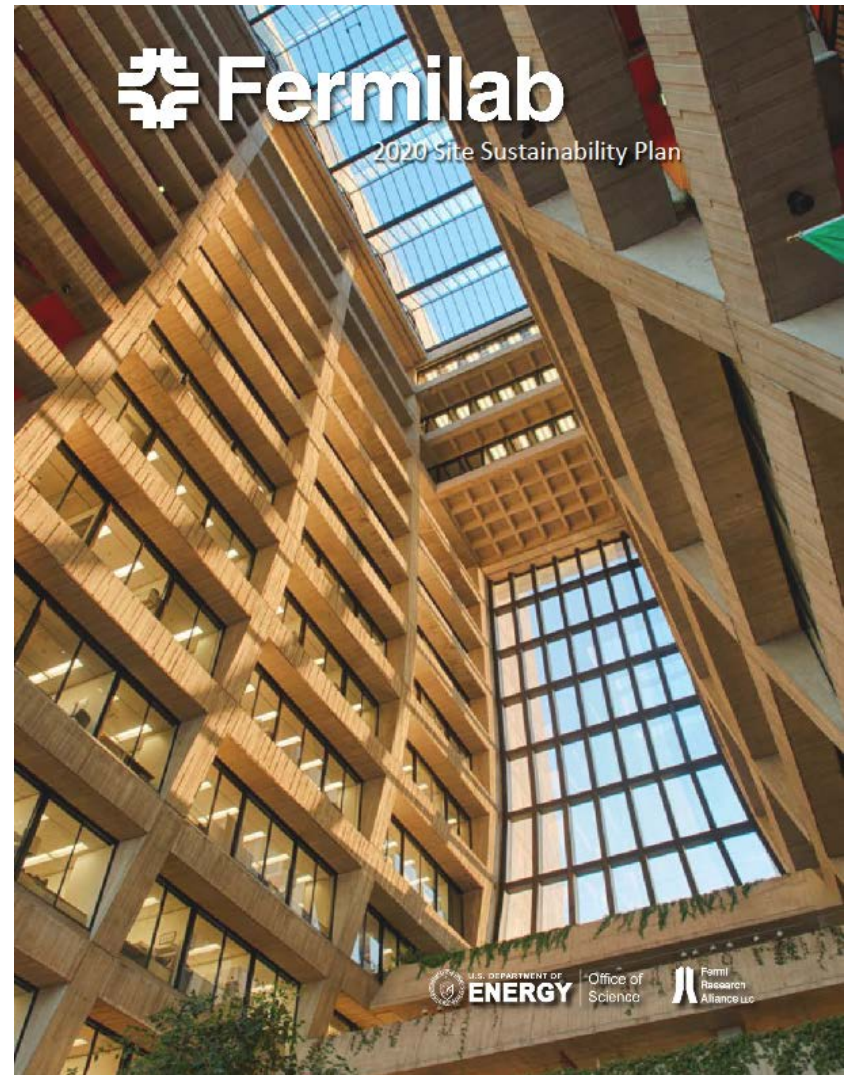
Sustainability Management Team

Andy Martens	Energy Manager, Greenhouse Gas Reduction
Andrew Federowicz	Sustainable Buildings
Greg Gilbert	Clean & Renewable Energy
Martin Bentivengo	Water Use Efficiency
Brian Niesman	Fleet Management
Gordon Bagby	Sustainable Acquisition
Michael Pfaff	Pollution Prevention/ Waste Reduction
Kimberly Myles	Electronic Stewardship
Eric Mieland	Climate Resilience
Wally Levernier	Ecological Land Management Liaison
Ilene Winston	WDRS Liaison
Leah Hesla	Communications Liaison
Oliver Kiemschies	Science Liaison – Tech Div
Bill Pellico	Science Liaison – Accelerator Div
Cindy Joe	Science Liaison – Neutrino Div

Site Sustainability Plan



<https://sustainability.fnal.gov/>



Site Sustainability Plan

- Annual rollup of sustainability goal progress and future plans
- Required per DOE Order
- Delivered to DOE-Sustainability Performance Division each December
- Fermilab meeting or exceeding goals in many areas
 - Water Use
 - Electronics Stewardship
 - Recycling & Waste Diversion



Requirements

Governing Regulations

DOE Order 436.1

Departmental Sustainability [2011]

Executive Order 13834

Efficient Federal Operations [2018]

Drivers

Prime Contract (DOE O 436.1)

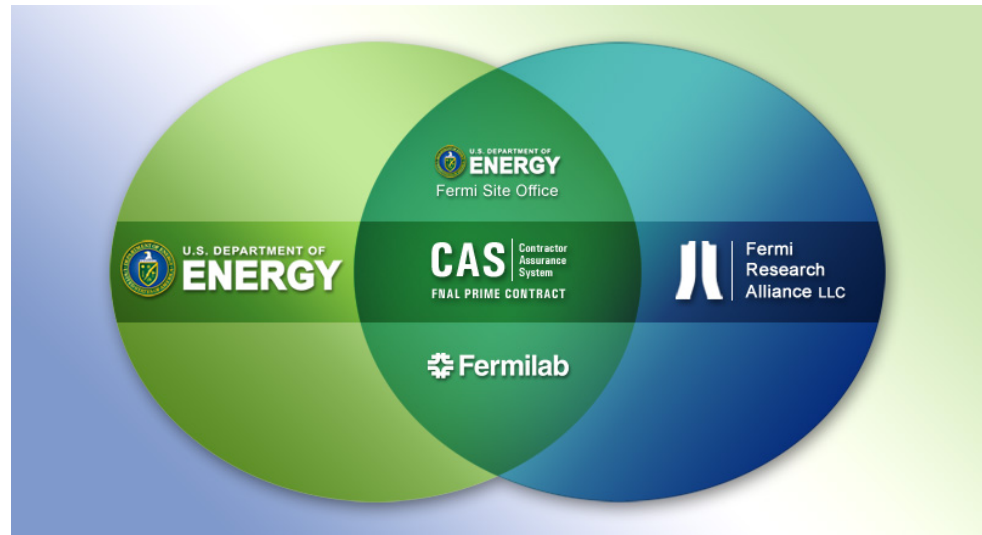
Good Business

Advance the Mission

Cost Savings

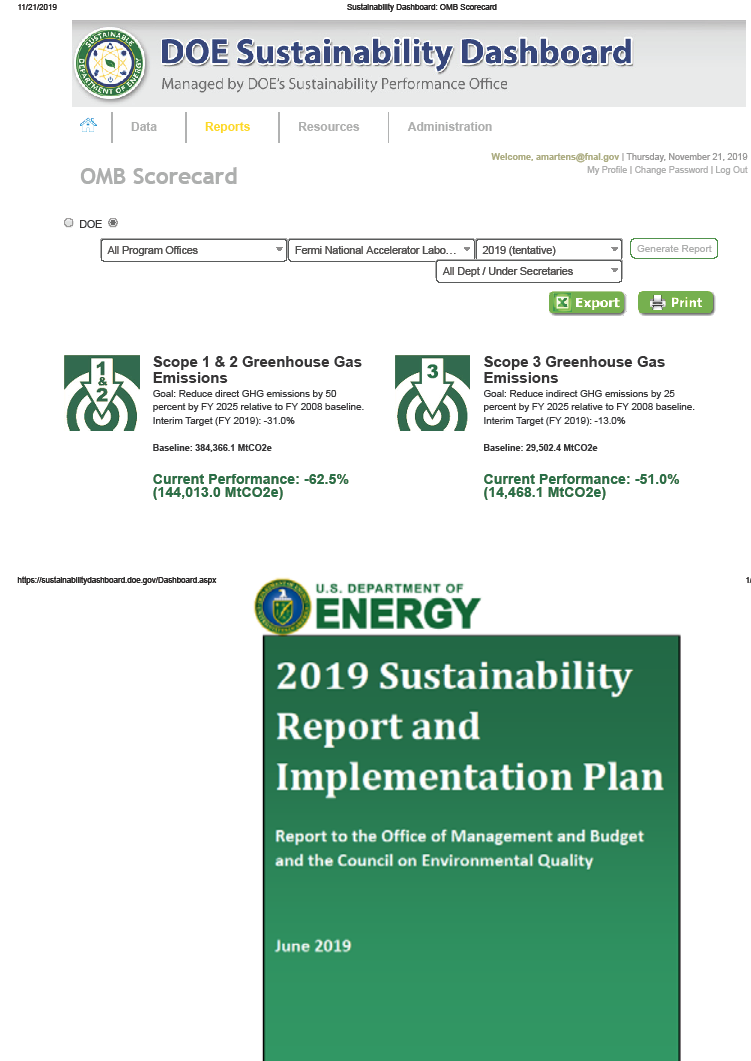
Reputation

Site Stewardship



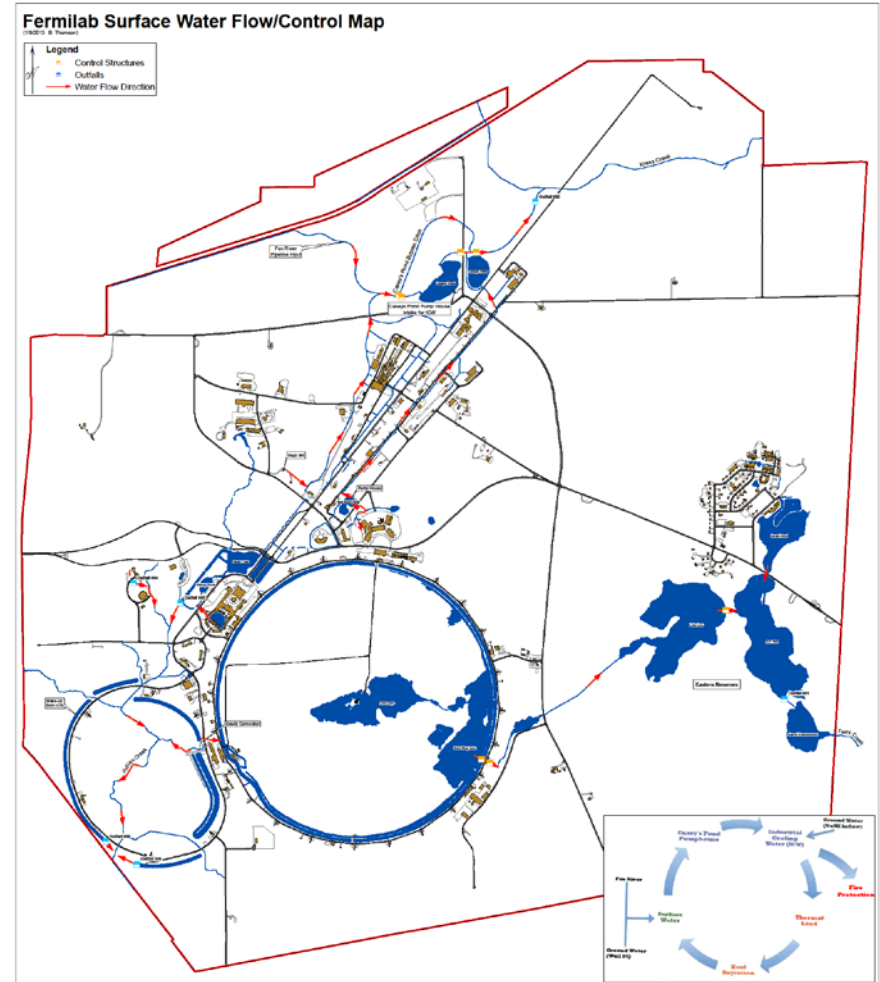
Site Sustainability Plan Rollup

- DOE Sustainability Dashboard
 - 8 Goal Areas 26 metrics
 - Annual OMB scorecard on DOE Sustainability
 - Collectively DOE is doing well
 - Many sites struggle with High Performance Sustainable Buildings
- Results aggregated with other DOE sites to produce DOE Sustainability Report and Implementation Plan



Sustainability Goals Met

- Water Use Efficiency
 - Industrial Cooling Water Reuse
- Vehicle Management: Fuel Consumption
- Pollution Prevention & Waste Reduction
 - Conventional & Construction Materials
- Electronic Stewardship
- Telecommuting (Scope 3)
 - Expanded Pilot Program



Sustainability Goals “Good Progress”

- Sustainable Buildings
 - Metering
 - Auditing
- Vehicle Management
 - GHG emissions
 - Vehicle Acquisitions
 - Charging Stations
- Renewable Energy (Renewable Energy Certificates)

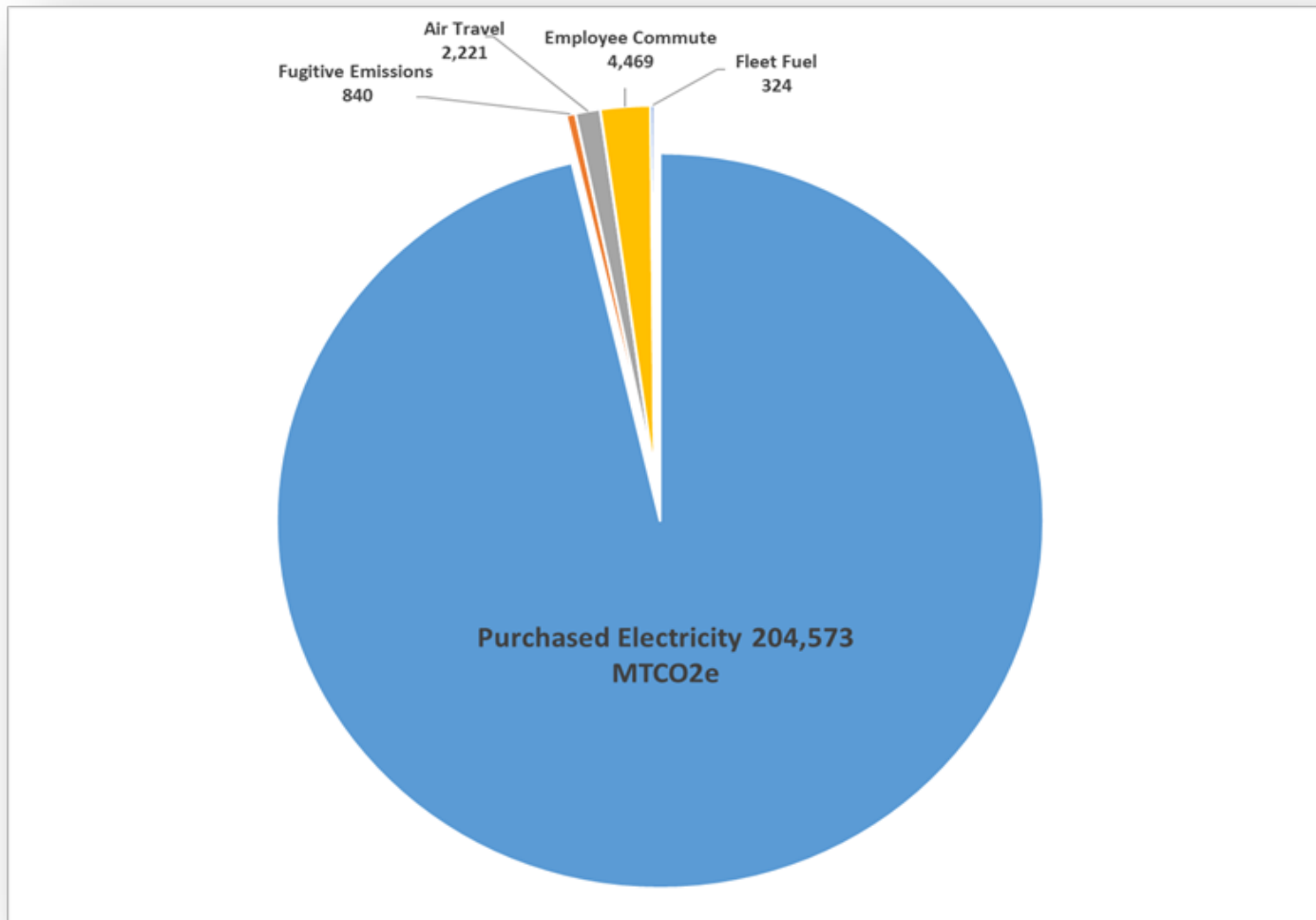


Sustainability Goals “Challenges”

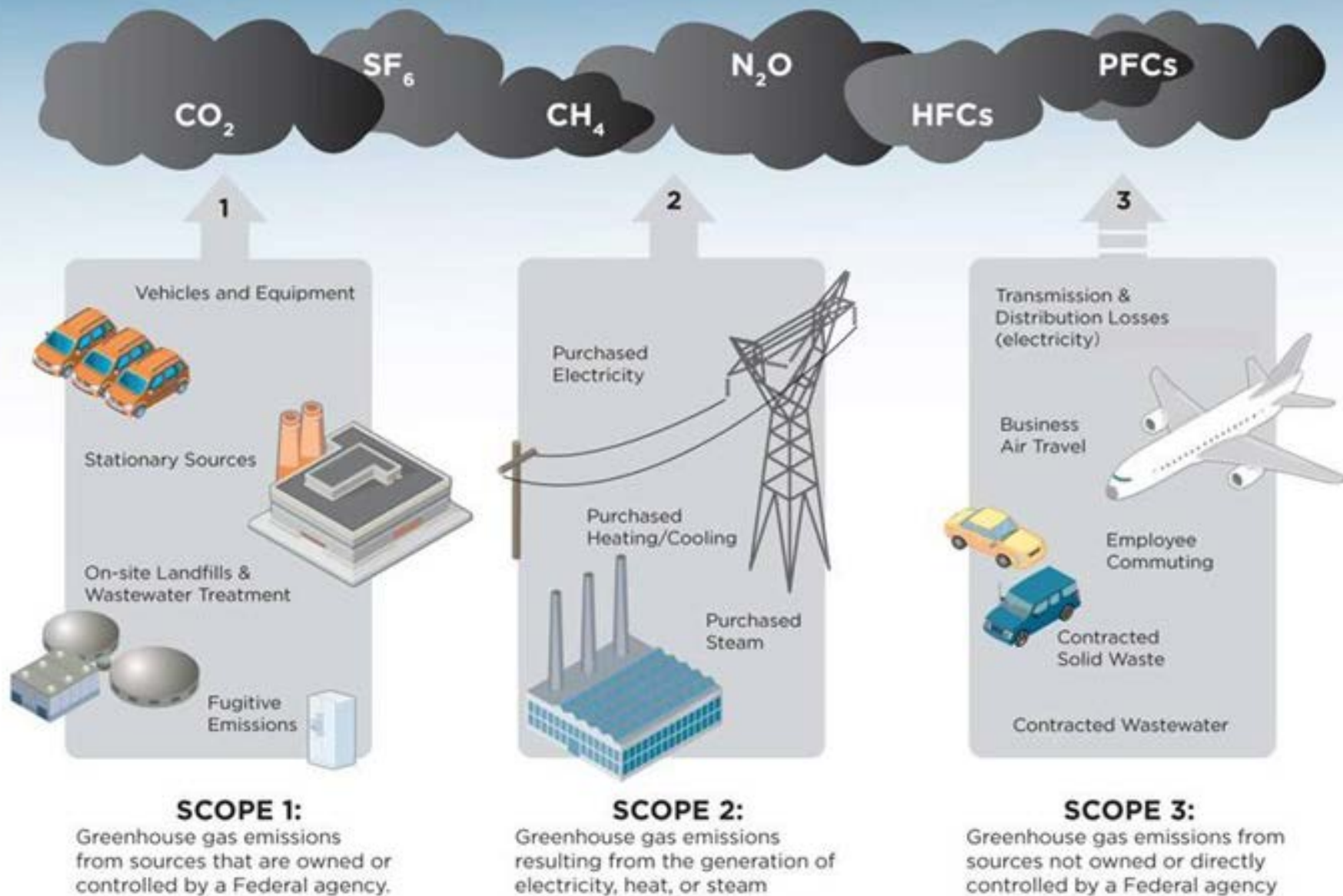
- Sustainable Buildings
 - Energy Intensity
 - High Performance Sustainable Buildings (Many sites have challenges)
- Potable Water
 - Aging infrastructure
 - Major Infrastructure improvement investment planned
- Climate Change Resilience



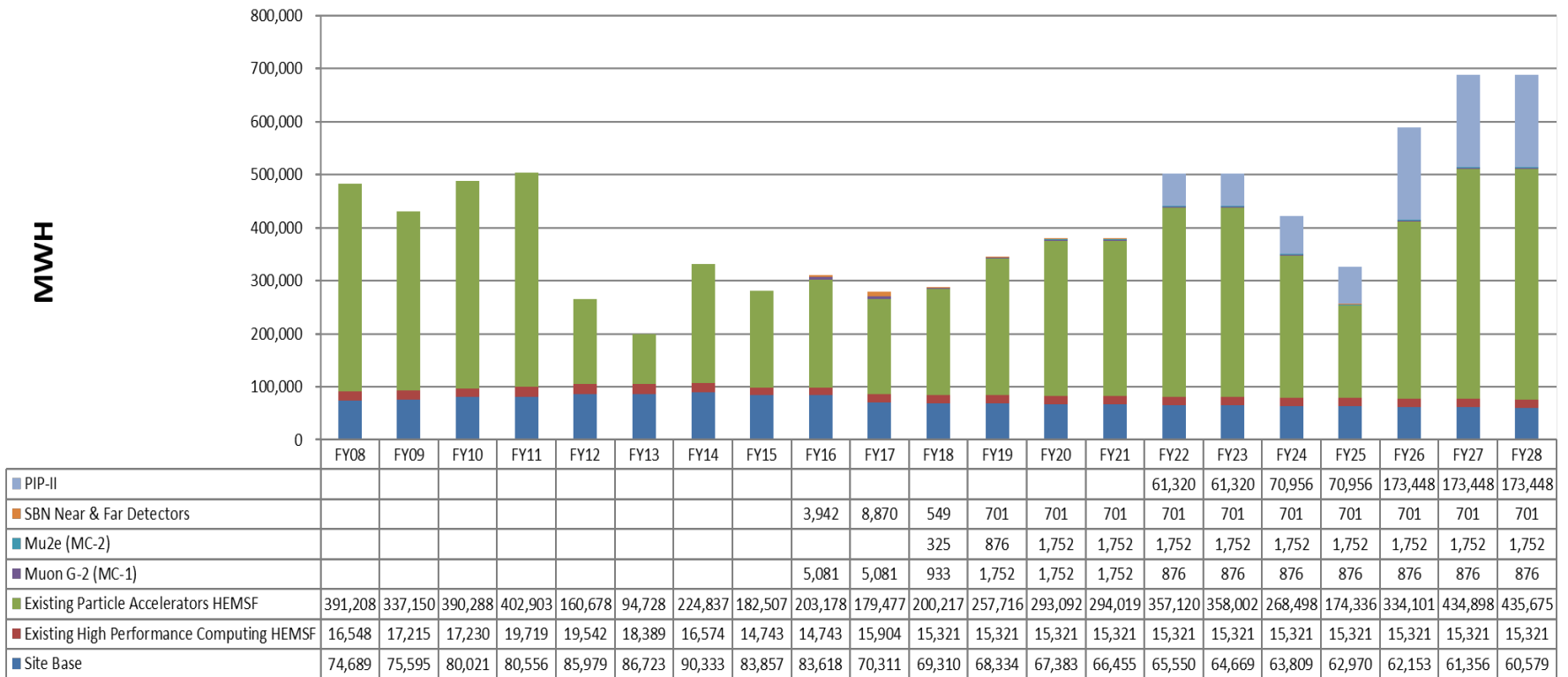
Carbon Footprint



Common Sources of Federal Greenhouse Gas Emissions



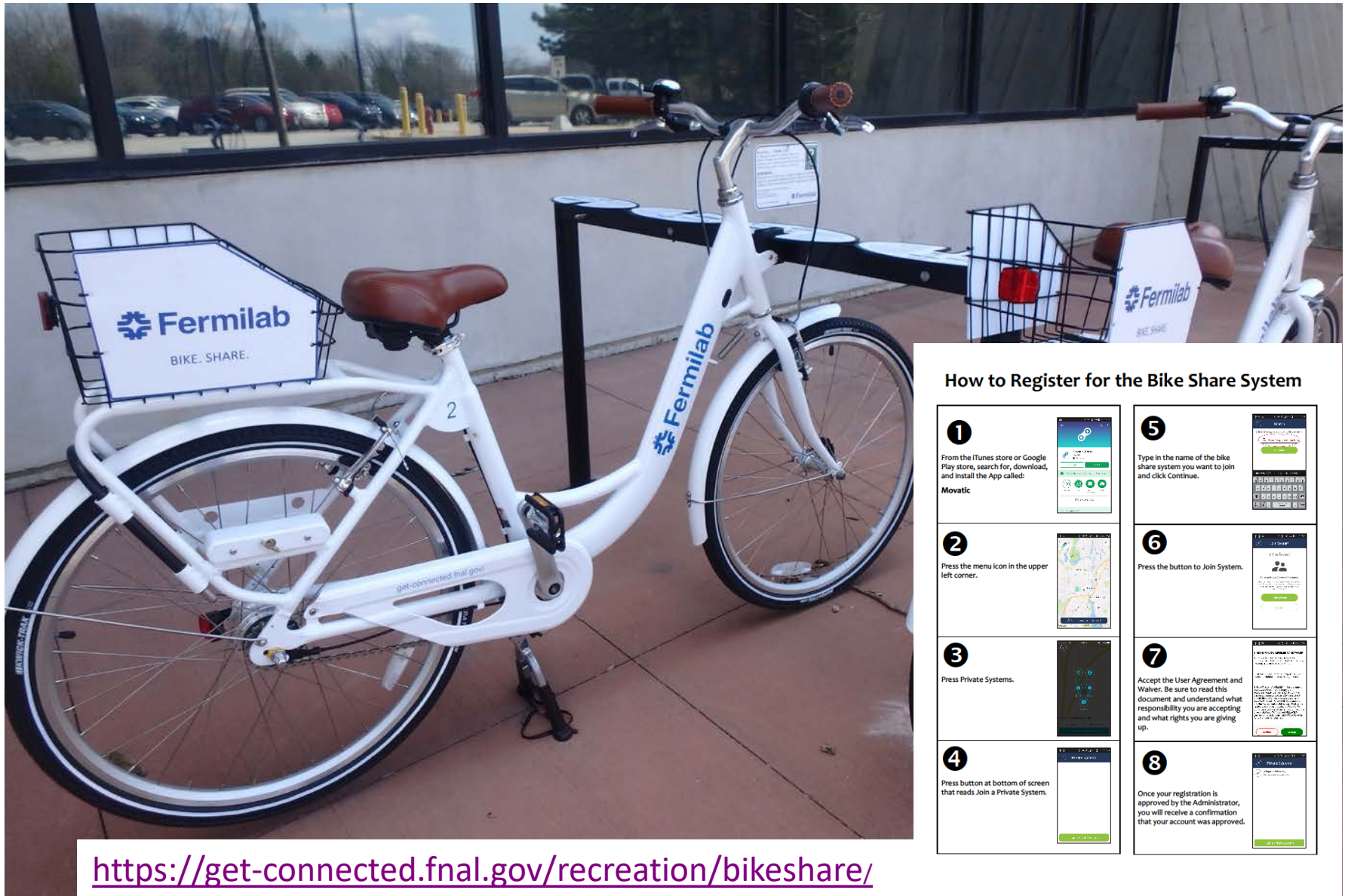
Electricity Use and Estimated Projections



Renewable Energy Certificates acquired annually to offset a portion of total electricity.









User Resources

- Getting Around Fermilab
 - Expanded Bike Share
 - On site shuttle – fixed route service
(<https://news.fnal.gov/2020/01/updated-taxi-service-schedule/>)
 - Public Transportation Shuttle to Geneva Train Station
 - Electrical Vehicle Charging stations – 2 locations
- Lab-wide recycling
 - Conventional materials
 - Nonconventional items
- Recreation
 - Bike/walking trails, new and existing
 - Ecological >1000 acres in various stages of restoration



<https://get-connected.fnal.gov/recreation/bikeshare/>

How to Register for the Bike Share System

<p>1</p> <p>From the iTunes store or Google Play store, search for, download, and install the App called: Movatic</p> 	<p>5</p> <p>Type in the name of the bike share system you want to join and click Continue.</p> 
<p>2</p> <p>Press the menu icon in the upper left corner.</p> 	<p>6</p> <p>Press the button to Join System.</p> 
<p>3</p> <p>Press Private Systems.</p> 	<p>7</p> <p>Accept the User Agreement and Waiver. Be sure to read this document and understand what responsibility you are accepting and what rights you are giving up.</p> 
<p>4</p> <p>Press button at bottom of screen that reads Join a Private System.</p> 	<p>8</p> <p>Once your registration is approved by the Administrator, you will receive a confirmation that your account was approved.</p> 



Geneva Train Station Commuter Connection

You can also catch the bus at these times and this location, with no booking necessary.

Weekday Mornings		
Metra UP-W Line Geneva Station	Fermilab Wilson Hall	Connecting Transit
6:50 am	—	Routes 801 & 802, St. Charles - Geneva On Demand, Metra UP-W Line to Chicago
7:38 am	7:52 am	Metra UP-W Line to/from Chicago
8:55 am	9:09 am	Routes 801 & 802, St. Charles - Geneva On Demand, Metra UP-W Line to Chicago
10:31 am	—	Routes 801, St. Charles - Geneva On Demand, Metra UP-W Line from Chicago
Weekday Afternoons		
Fermilab Wilson Hall	Metra UP-W Line Geneva Station	Connecting Transit
—	12:30 pm	Routes 801, St. Charles - Geneva On Demand, Metra UP-W Line from Chicago
—	2:41 pm	Routes 801 & 802, St. Charles - Geneva On Demand, Metra UP-W Line to Chicago
4:12 pm	4:32 pm	Metra UP-W Line to Chicago
5:11 pm	5:26 pm	Metra UP-W Line to/from Chicago
6:17 pm	6:32 pm	Routes 801, St. Charles - Geneva On Demand, Metra UP-W Line to/from Chicago

pace
ON DEMAND
Batavia

847-254-7471
PaceBus.com/OnDemand

pace
Connecting Communities

PaceBus.com/OnDemand

January 2019

Shuttle Stop
Wilson Hall
Front Entrance

Recycling

- Site Wide Mixed Stream Recycling
 - Paper/Cardboard
 - Glass bottles
 - Metal cans
 - Plastic containers(Managed by Janitorial/Clorica)
- Nonconventional items – Batteries disposable and rechargeable.

* Over 50% of all municipal solid waste is recycled.



In Summary

- Sustainability is a long-term commitment and investment in the future.
- Much progress has been made over the past decade by the laboratory community.
- Continue heading in the right direction; there's work yet to be done.
- Fermilab has the capacity to endure, Sustainably.



Fermilab Collaborations / Partnerships / Members

