

10-4-2019

Study Group on Climate Change Recommendations Progress Report

Dano Weisbord
Smith College

Follow this and additional works at: https://scholarworks.smith.edu/yocc_materials

 Part of the [Environmental Indicators and Impact Assessment Commons](#), and the [Sustainability Commons](#)

Recommended Citation

Weisbord, Dano, "Study Group on Climate Change Recommendations Progress Report" (2019). Article, Smith College, Northampton, MA.
https://scholarworks.smith.edu/yocc_materials/1

This Article has been accepted for inclusion in Year on Climate Change: Other Materials by an authorized administrator of Smith ScholarWorks. For more information, please contact scholarworks@smith.edu



Study Group on Climate Change Progress Report

DANO WEISBORD, EXECUTIVE DIRECTOR OF SUSTAINABILITY AND CAMPUS PLANNING



Study Group on Climate Change

Fall 2015 – Spring 2017

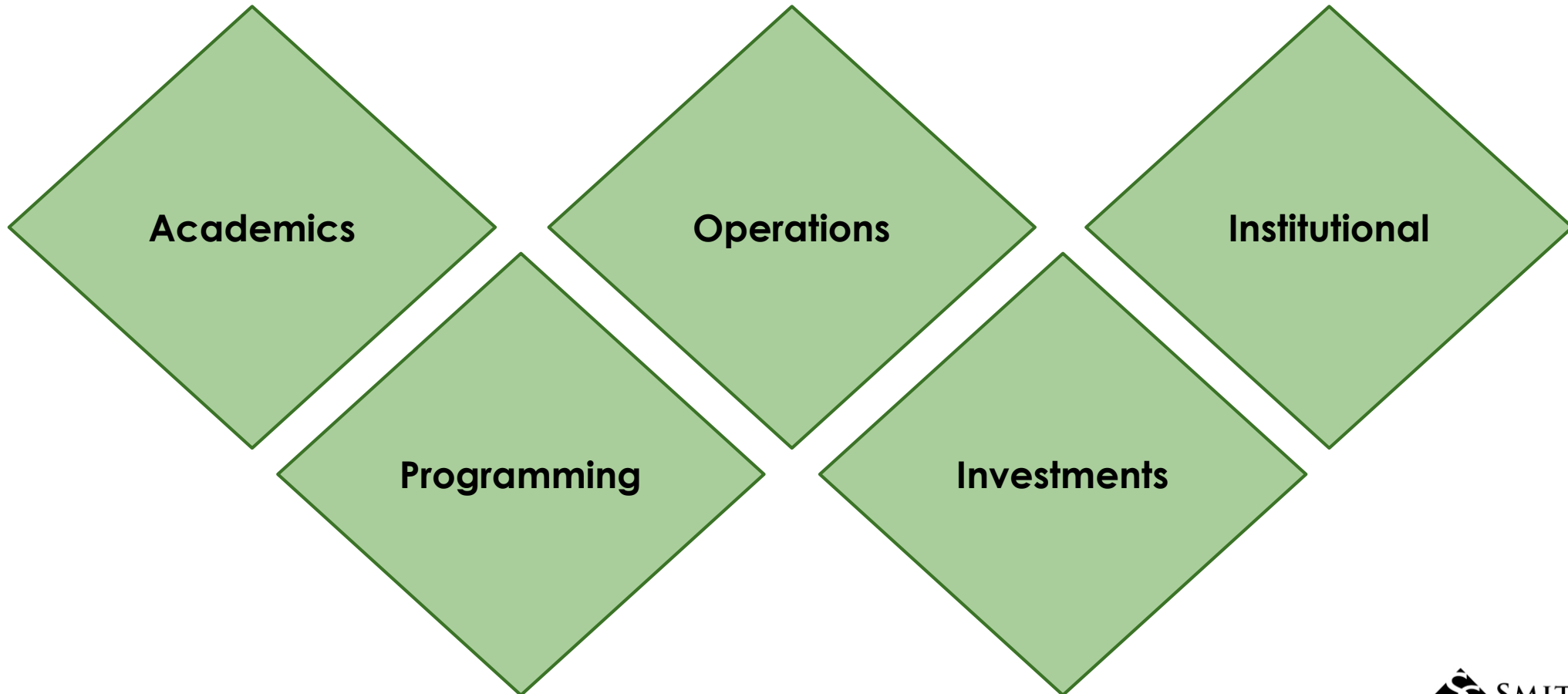
- ▶ *Charge:* To recommend to the administration and the Board of Trustees how Smith can mitigate climate change on its campus and contribute to broader climate change solutions in the world
- ▶ *Composition:* 16-member committee of trustees, faculty, students & staff
- ▶ *Process:* input from hundreds of students, faculty, staff and trustees, consulting with experts and conducting research
- ▶ *Deliverable:* TOWARD A SUSTAINABLE FUTURE, March 2017

Statement on Climate Change

Climate change is an urgent, complex problem. Human activities are pushing the climate beyond the range of conditions experienced over the last few million years and toward abrupt, unpredictable, highly damaging and potentially irreversible impacts. Effective responses will require **ambitious, multifaceted plans of action.**

- Endorsed by the Board of Trustees, March 2017

SGCC Recommendations



1. Academic



Breanna Parker '18
ES&P. Penora, Iowa

Prof. Alex Barron, ES&P

New academic offerings

Infuse concepts across the curriculum

Enhance experiential and applied learning

1. Hired 3 new faculty with climate or sustainability focus across 3 divisions AY '18-'19
2. Launched a faculty scholarship program
3. Provided 11 curricular enhancement grants AY '18 - '19

2. Programming



Emmy Longnecker '20
Chemistry. S. Portland,
Maine

Extra-curricular
learning

Sustainable living

1. Launched Year on Climate Change
2. 14 tons of move-out waste repurposed on campus and in community. Student designed and run program. Possible upgrade to residential programming

3. Operations



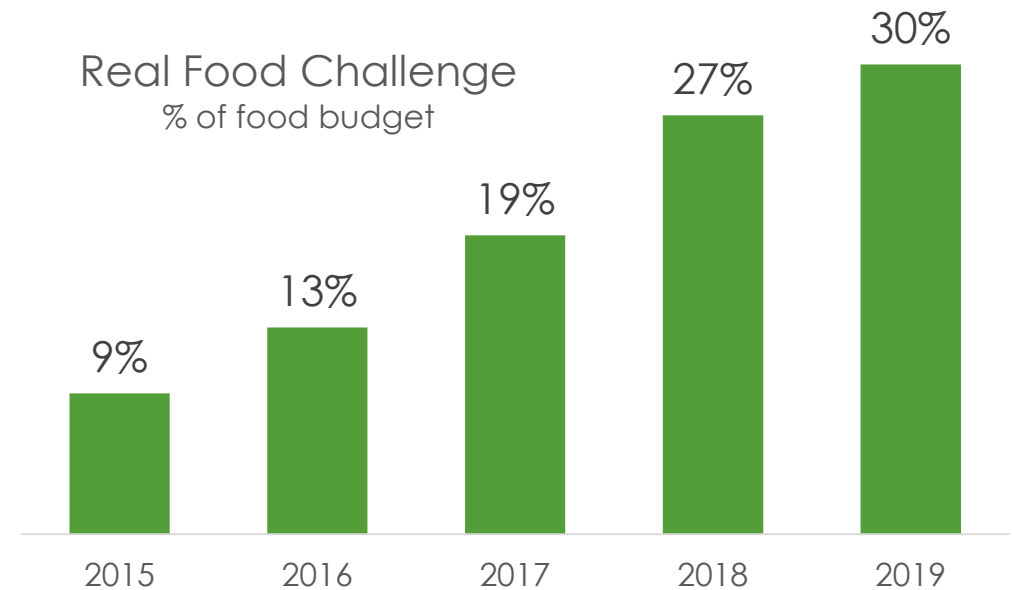
Net-zero greenhouse gas emissions by 2030

Research and scholarship informs the optimal path

Lily Li, '19
Engineering, China.

Pre-doctoral Fellow of
Architectural
Engineering, Penn State

1. Solar purchase from Maine will reduce emissions by 10% by '21
2. Identified bio-fuel sources - supply, impact and policy issues
3. Completed carbon neutrality master plan - more in Part II
4. "Real Food" to 30% - top 3
5. Faculty and students materially involved in planning



4. Investments

Investing Sustainably:
Students Launch New
Fund



Address climate
change in
endowment
investments

1. \$100K student managed fossil-free portfolio
2. In process of moving impact investing from \$9.5M to \$30M
3. No direct coal
4. Improving transparency. Remains a source of risk

5. Institutional Change



Model ideal institutional behavior

1. Merged CEEDS and campus sustainability
2. Adopted a carbon proxy price of \$70/ ton based on faculty scholarship
3. Landscape Master Plan underway
4. Students advanced adaptation and mitigation planning in local communities
5. Committee on Sustainability is monitoring and reporting to President McCartney
6. Board retreat panel on climate change

We're Being Recognized



Prof. Alex Barron with Secretary John Kerry at the Global Climate Action Summit, 2018

- ▶ Our students won or were finalists for AASHE undergraduate research award 2017, 2018, and 2019
- ▶ Second Nature “Mark of Distinction” for solar aggregation 2018
- ▶ Prof Camille Washington-Ottombre and Siiri Bigalke ‘17 finalist for AASHE sustainability research award 2018
- ▶ Prof Denise McKahn
 - ▶ Institute for the Liberal Arts Fellow, University of Keele, UK
 - ▶ Clean Energy Education and Empowerment Woman in Clean Energy finalist 2019



Commitment to Carbon Neutrality

The past is precedent

Jessica McKnight '19

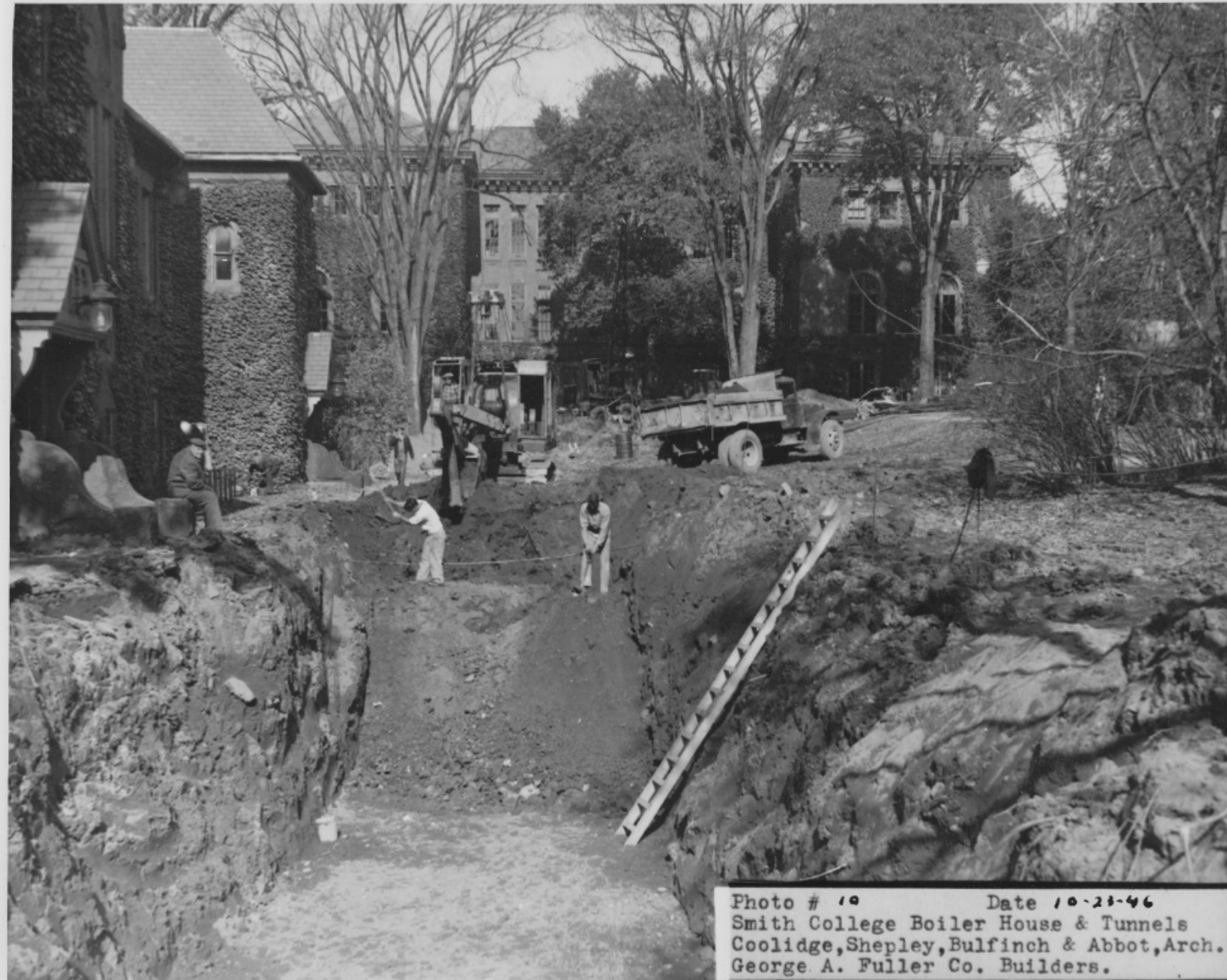


Photo # 10 Date 10-21-46
Smith College Boiler House & Tunnels
Coolidge, Shepley, Bulfinch & Abbot, Arch.
George A. Fuller Co. Builders.

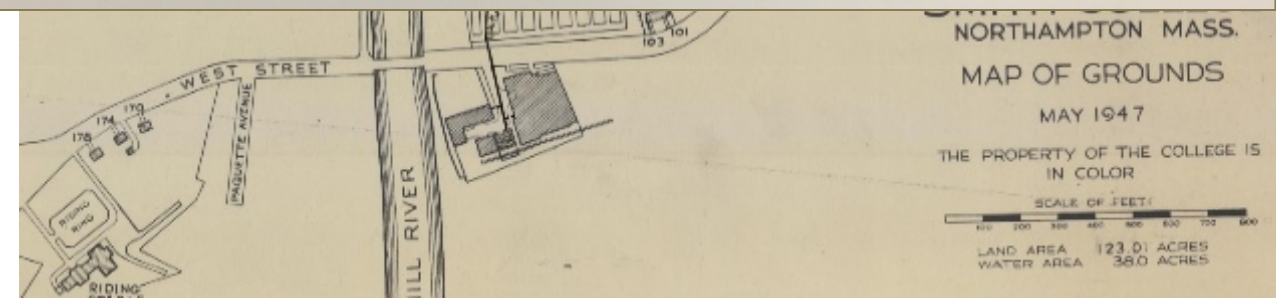
1946 Heating Plant

- 2M sq. ft.
- \$4.3M 1947
- \$50.2M 2019

First: Elimination of trucking of fuel and ashes through campus property.

Second: Elimination of smoke from separate plants and reduction of dirt in buildings from this source.

Smith College Archives. Board of Trustees Minutes, 1945

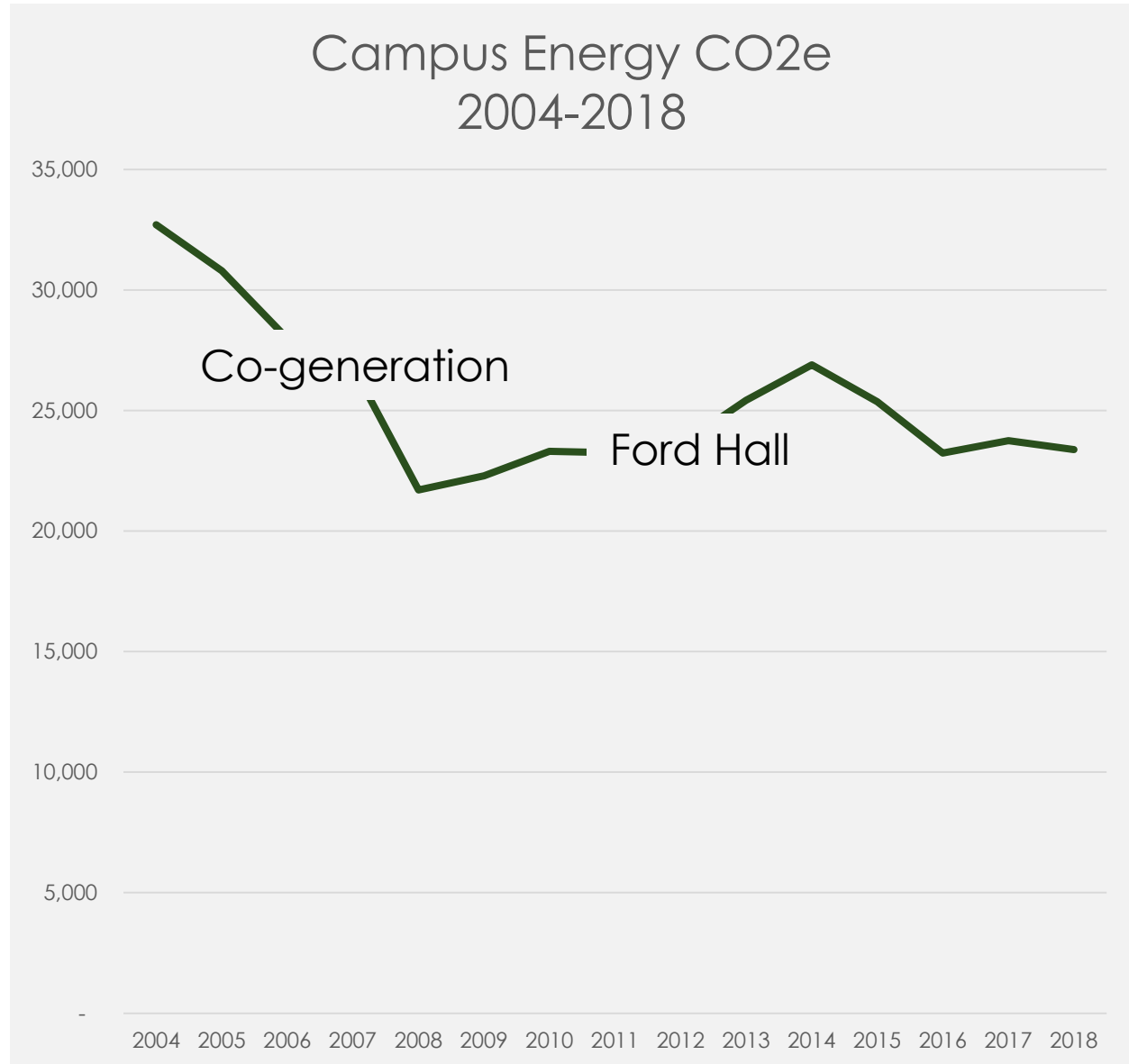


Recent Smith History – Climate Change

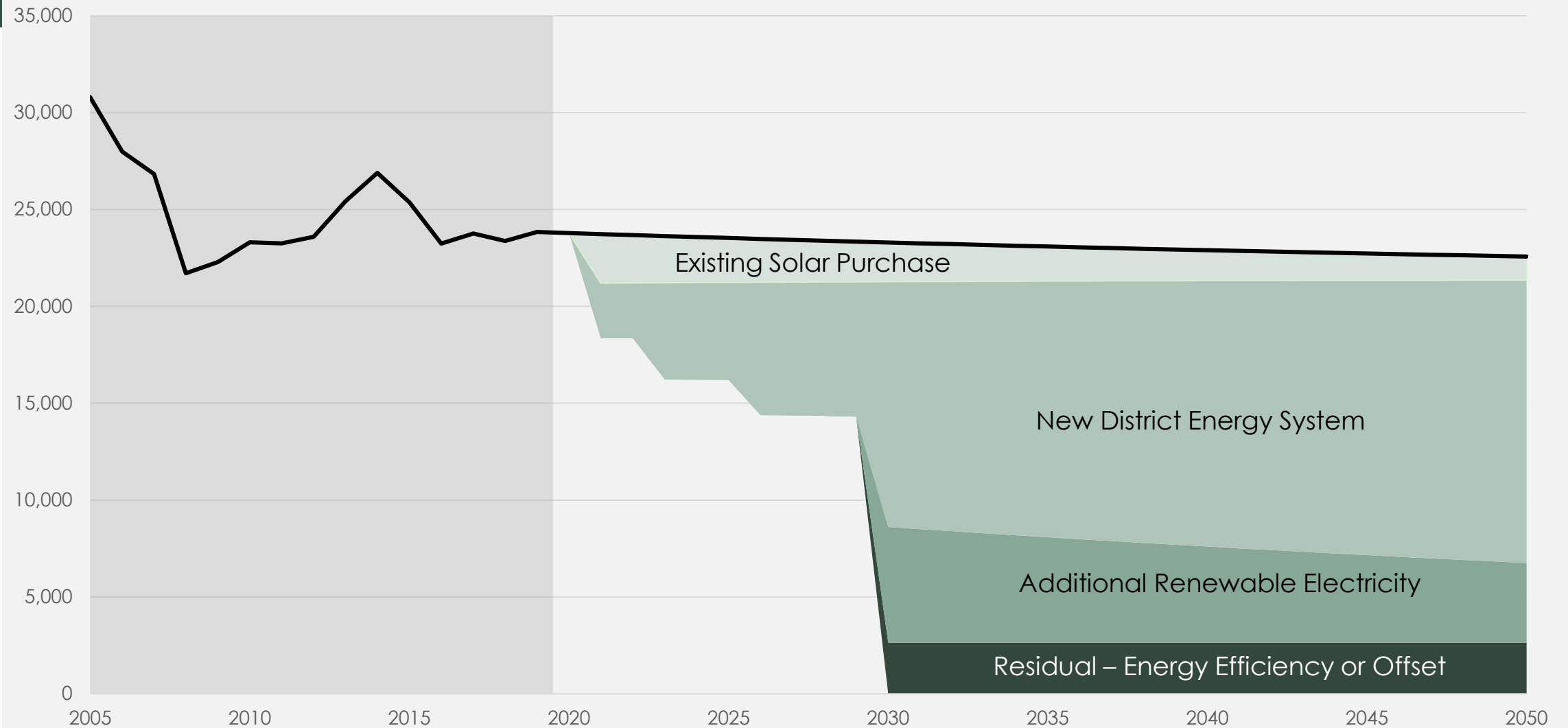


Carbon Emissions

29% reduction of carbon campus energy since 2004

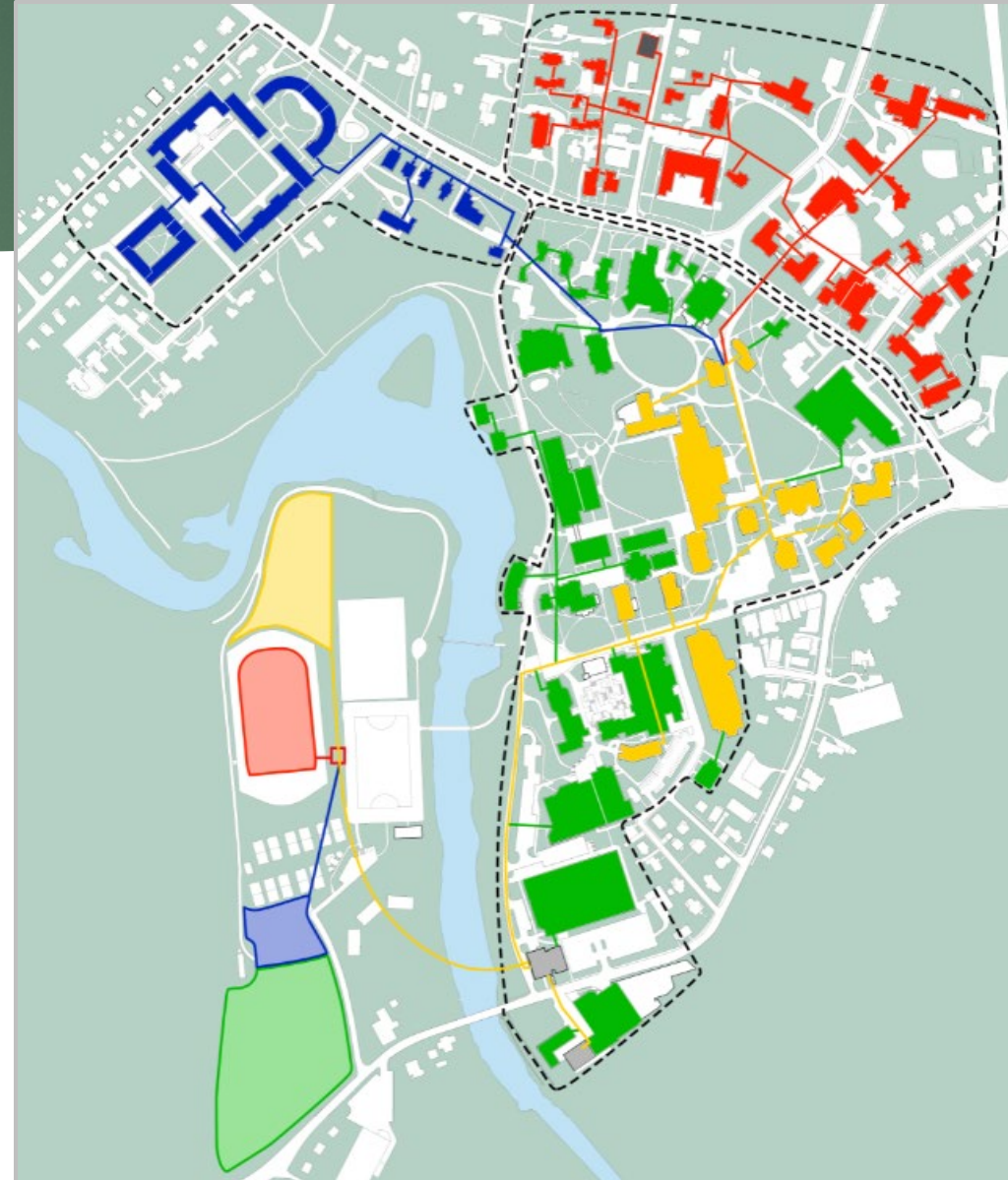


Carbon Neutral Plan



Proposed Energy System

- ▶ Source
 - ▶ Convert fossil-fuel boilers to ground source wells and heat pumps
- ▶ Distribution
 - ▶ Convert steam system to low-temperature hot water
- ▶ Buildings
 - ▶ Convert building systems to be compatible with low-temperature hot water system



Sector Scan – Leading, not bleeding

Completed

- ▶ Ball State University
- ▶ Miami University (Ohio)
- ▶ Missouri Science & Technology
- ▶ Carleton College
- ▶ Skidmore College (40%)

Planning

- | | |
|-----------------------|-----------------|
| ▶ Amherst * ✦ | ▶ Wellesley * |
| ▶ Boston University * | ▶ Brown |
| ▶ Bowdoin * | ▶ Dartmouth |
| ▶ Harvard * | ▶ Mount Holyoke |
| ▶ Swarthmore * | ▶ Princeton |
| ▶ Tufts * | |
| ▶ UMass Amherst * | |

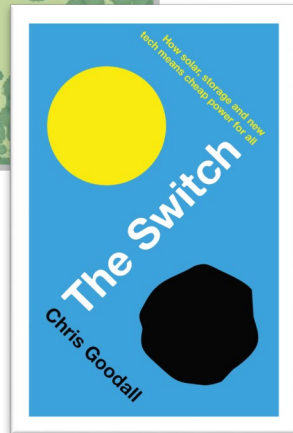
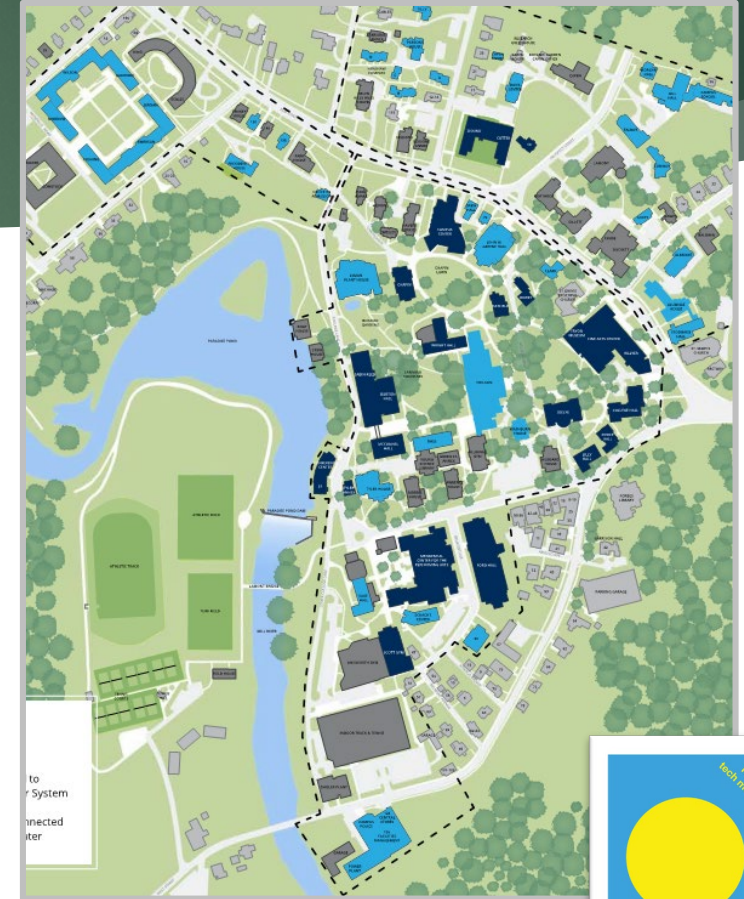


200 wells located on Carleton's "Bald Spot"

* Smith has advised – direct impact of SGCC work
✦ Approved by Board

Benefits

- ▶ Ambitious, multifaceted plan of action
 - ▶ Reduces carbon and operating costs significantly and permanently
 - ▶ Appeals to current and future students and faculty
 - ▶ Low temperature heat source is flexible
- ▶ Includes about **30% increase** in cooled space
 - ▶ Summer programming, climate adaptation
- ▶ Hedge against future carbon regulation
 - ▶ Proposed Massachusetts legislation cost ~ \$500K - \$2.5M / year
- ▶ The future is electric. Goodall suggests costs will decrease



Student and Faculty Engagement

- ▶ Lily Li '19 designed a zero carbon system for Field House
 - ▶ Honors Thesis and three course projects
 - ▶ AASHE undergraduate research award finalist
- ▶ A 1,000 ft. test well has been drilled
 - ▶ Placed 1 kilometer of fiber-optic cable to monitor temperature
- ▶ Gathered geo-physical data with GEO department

