Faculty Senate

December 13, 2017

Faculty Senate Code

To promote the communication of opposing views and to serve as a free-speech-with-respect model for the rest of the campus, all discussion in the Faculty Senate must be conducted in a civil fashion that is free of any intimidation or personal attacks.

- *the University Faculty Committee*

Announcements

Charlie Van Loan
Dean of Faculty

Possible Representation Issues for Some Academic Title-Holders

Group	Number	Assembly
University Faculty*	1560	Senate
Other Professorial Title**	90	Employee Assembly
Instructional Staff	350	Employee Assembly
Researcher Staff	330	Employee Assembly
Librarians/Archivists	120	Employee Assembly
Extension	240	Employee Assembly
Post Docs	550	Employee Assembly

The Employee Assembly (EA) has about 8000 constituents.

* Tenured and Tenure Track Faculty

** Professor of the Practice, Clinical Professor, Research Professor, etc.

See this source of the data for more details

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The EA works on important things, but typically does not concern itself with teaching and research issues.

Take a look.

These colleagues work closely with tenure-track faculty delivering great research and teaching. Are they adequately represented?

Let’s Find Out By Asking

We propose giving the non-tenure track academic title-holders the opportunity to post their views on line.

Simple question: Are you happy with the current governance setup?

Here is the post-a-comment page for post-docs and here is the one for lecturers, researchers, etc.

We will revisit the issue in February, perhaps forming an ad hoc committee that would be guided by the responses.

FYI

There was a 2004 Report to the Senate on the status of Nontenure track faculty. Excerpt:

> The Committee recommends that concerned members of the NTT faculty consider the options for a separate assembly or work with the Faculty Senate to gain representation within the Faculty Senate.

Consensual Relationships Policy Committee

The website is open for comments on any of ten related study questions through mid-February.

Expect a draft proposal & discussion at the March Senate meeting.

There will be a public comment period on the draft.

Expect Senate vote (as with the other assemblies) in April.

Monday Messages from DoF Office

We plan to continue these in the Spring Semester. OK?

Report from the Financial Policies Committee

Professor Rayna Kalas
Chair

Financial Policies Committee

- Rayna Kalas (chair, A & S)
- Doug Antczak (VET)
- Victoria Beard(AAP)
- Larry Blume (A & S)
- David Easley (CIS)
- Ron Ehrenberg (ILR)
- Ravi Kanbur (CALS, Econ)
- José Martínez (ENG)
- Chris Schaffer (Assoc. Dean of Faculty)
- Luis Schang (VET)
- Adam Smith (A & S)
- Charles Walcott (CALS)
- Charles Van Loan (Dean of Faculty)

Recent FPC agenda items

- Implications of “unfreezing” the tuition distribution metric in FY19
- Potential subvention of “Gateway” courses
- Engaged Cornell
- Number of non-tenure track faculty with professorial titles
- Recommendations of the Admissions and Financial Aid Working Group
- Johnson College of Business and moving Dyson from CALS to Johnson
- Allocation of new student enrollments across the colleges

FPC spring agenda

- Understanding allocated costs and subventions over time (from before the budget model to the present)
- Professional masters programs and graduate tuition

Budget Model 101

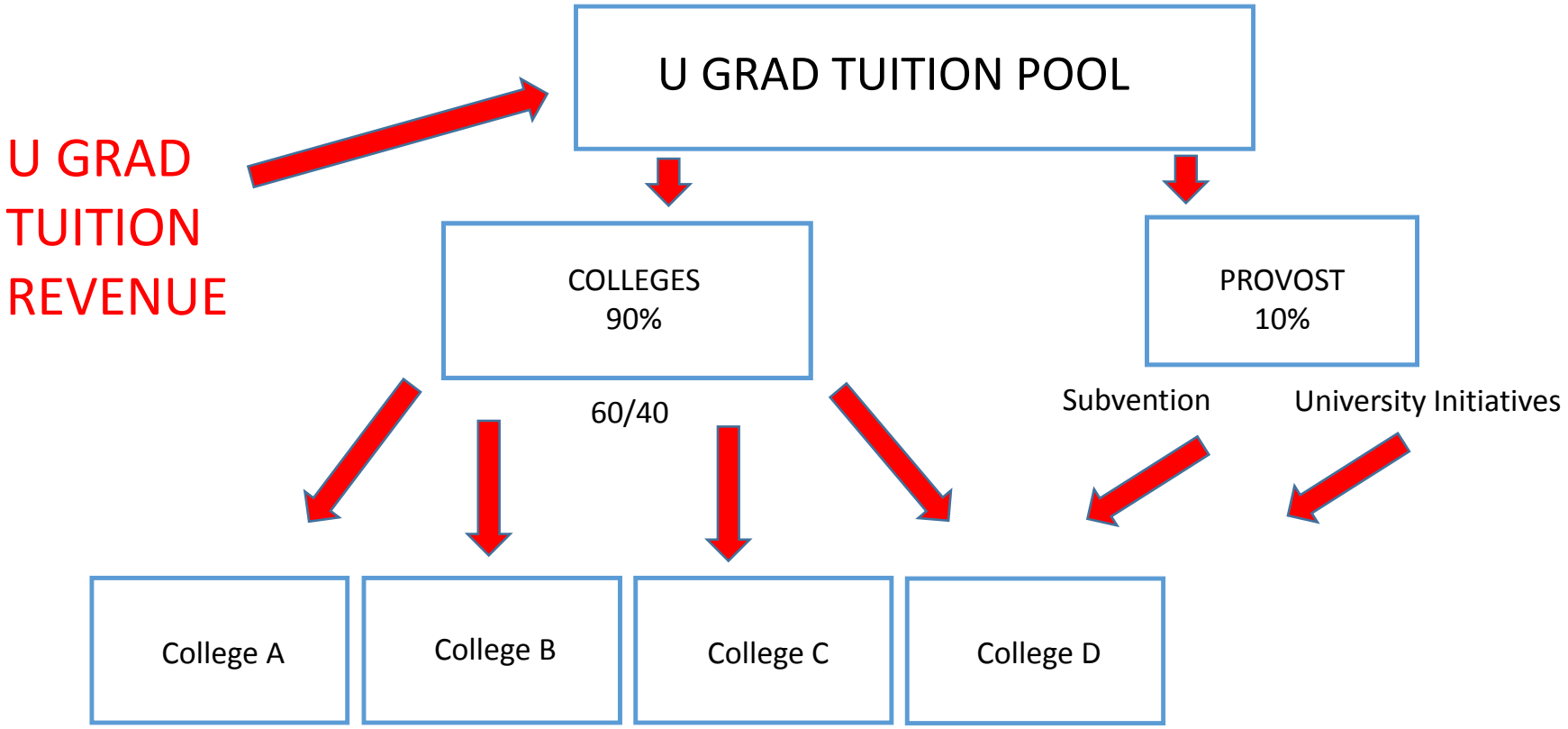
- In the old model, tuition and financial aid costs for AAP, CAS, and ENG went to the center and funds were distributed ad hoc; tuition and financial aid for the Hotel and Contract Colleges went to the colleges

- Idea for the new model was to rationalize the distribution of resources, to establish a single distribution model for all colleges and to ask colleges and units to work within a budget

- In the new model, tuition dollars would be initially pooled and then distributed in a consistent way to the various colleges (with FA costs distributed to colleges in proportion to tuition); colleges would be also be responsible for allocated costs

- But how to distribute tuition?

- Some should go to college of enrollment, some should go to college of instruction



Source: Paul Streeter

Undergraduate Tuition Distribution

FY14 Initial Model Rollout

- 25% Enrollment ; 75% Teaching

FY15 and FY16

- 40% Enrollment ; 60% Teaching

  Note: Subvention adjusted to offset impact.

FY17 and FY18

- 40% Enrollment ; 60% Teaching
- Teaching %'s by College Frozen at FY16 Level

Source: Paul Streeter

"Unfrozen" Teaching Distribution Metrics

	Actual ("Unfrozen") Teaching Distribution Metrics (6 semester average - course enrollments & credit hours)				
	FY14	FY15	FY16	FY17	FY18
Agriculture & Life Sciences	19.97%	20.79%	21.08%	21.06%	20.48%
Architecture, Art & Planning	2.80%	2.80%	2.71%	2.67%	2.58%
Arts & Sciences	41.47%	39.90%	38.70%	37.32%	37.46%
Computing & Information Science	3.93%	4.50%	5.21%	5.66%	6.28%
Engineering	11.03%	11.41%	11.74%	12.31%	11.98%
Hotel Administration	7.11%	7.24%	7.43%	7.61%	7.73%
Human Ecology	6.78%	6.64%	6.40%	6.51%	6.47%
Industrial & Labor Relations	4.13%	4.28%	4.63%	5.03%	5.16%
Johnson	0.60%	0.57%	0.53%	0.53%	0.58%
Law	0.22%	0.22%	0.25%	0.32%	0.37%
Veterinary Medicine	0.72%	0.68%	0.65%	0.64%	0.63%
Cornell in Washington	0.16%	0.17%	0.16%	0.18%	0.15%
No Primary Instructor	1.07%	0.80%	0.51%	0.17%	0.13%
TOTAL COLLEGES	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Paul Streeter

Responses to unfreezing the metric

- administrative move to five-year averages of enrollments/credit hours for the distribution of the “college of instruction” tuition

- Subventions, sometimes targeted (i.e. proposed “gateway course” funding plan)

Budget Model Teaching Data

October 2017 (final metrics for F19 may be different)

credit hours and enrollments single-year and 5-year average

	CY2013	CY2014	CY2015	CY2016	CY2017	Five year total average
Ag & Life Sciences	16.1%	15.8%	15.3%	14.4%	14.2%	**15.2%**
Dyson	5.5%	5.2%	5.2%	5.4%	5.3%	**5.3%**
AA&P	2.8%	2.5%	2.7%	2.5%	2.6%	**2.6%**
Arts & Sciences	37.7%	37.5%	36.8%	38.1%	37.1%	**37.4%**
CIS	5.1%	5.8%	6.5%	7.0%	8.0%	**6.5%**
Engineering	12.3%	12.3%	11.9%	11.3%	12.2%	**12.0%**
Hotel	7.5%	7.7%	7.7%	7.9%	7.2%	**7.6%**
Human Ecology	6.7%	6.2%	6.6%	6.6%	6.1%	**6.4%**
I&LR	4.6%	5.1%	5.4%	5.0%	5.0%	**5.0%**
Business	0.4%	0.6%	0.6%	0.5%	0.5%	**0.5%**
Law	0.2%	0.3%	0.4%	0.4%	0.5%	**0.4%**
Veterinary	0.6%	0.6%	0.7%	0.6%	0.6%	**0.6%**

Observations on the most recent data

Caveat: These are not the final numbers for FY19

- Starting 2013 rather than 2012, and not taking 3-year averages, the trend for A & S enrollments looks pretty stable

- Enrollment trend for CALS a little more worrying

- And CIS enrollments increasing perhaps even more than anticipated

Some final thoughts on the unusual and interesting case of CIS.

North Campus Residential Expansion

Timeline

January 2016 — Start of Housing Master Plan
Stakeholder Interviews
Focus Groups

Student Surveys

Open Forums
SA, Faculty Senate, University Assembly
SA City and Local Affairs Committee Town Hall
December 2016 — Tompkins County Housing Summit

Exploration of implementation feasibility

Summer 2017 — Board of Trustees Approval

Residential Student Congress

What

- 2,000 beds
- New dining
- Outdoor recreation

Why

Residential Trajectory

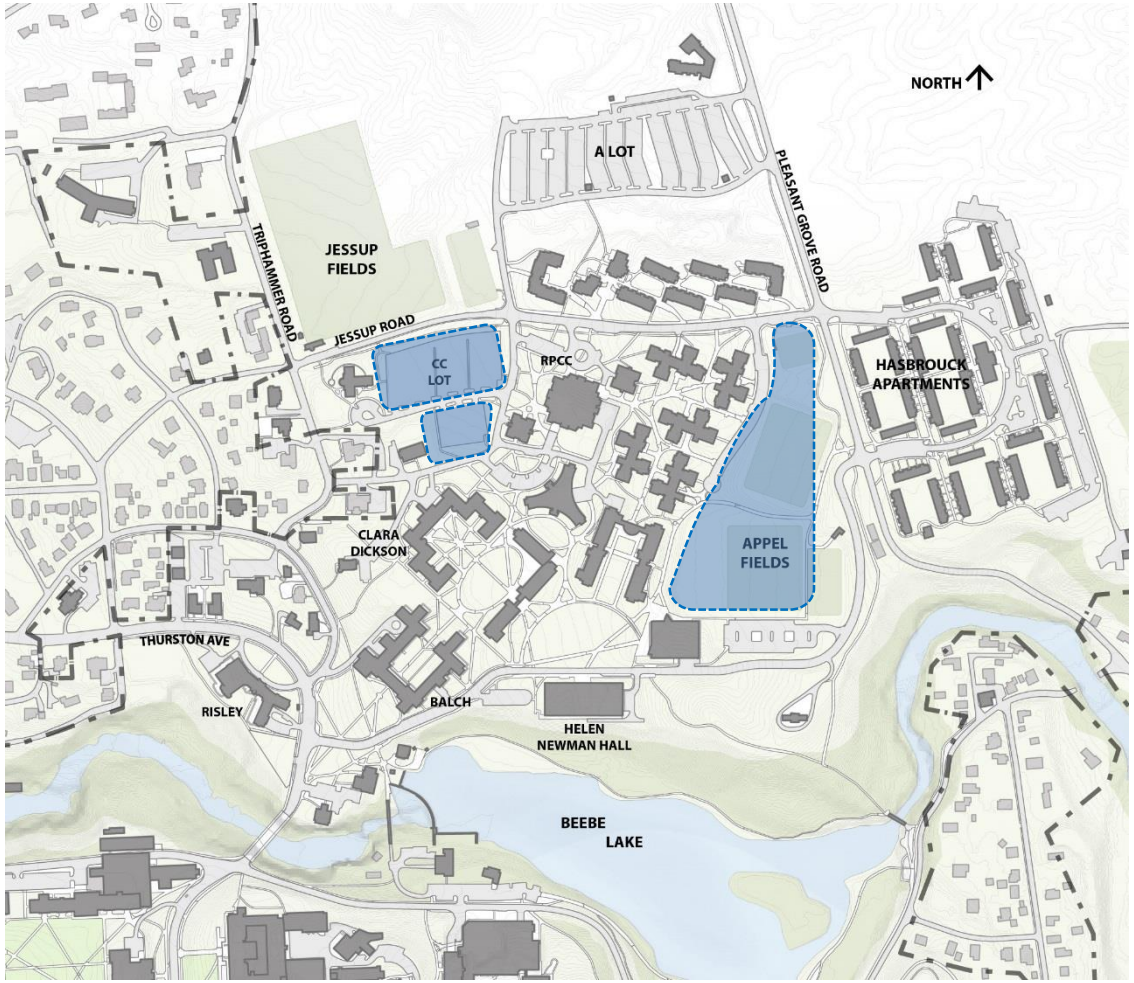
Residential Guiding Principles

- Developmentally appropriate housing
- Prioritize first-year, sophomore, and transfer students for guarantee
- Common FY experience with expanding options
- Juniors and seniors accommodated as available
- Two-year on campus residency once sufficient capacity

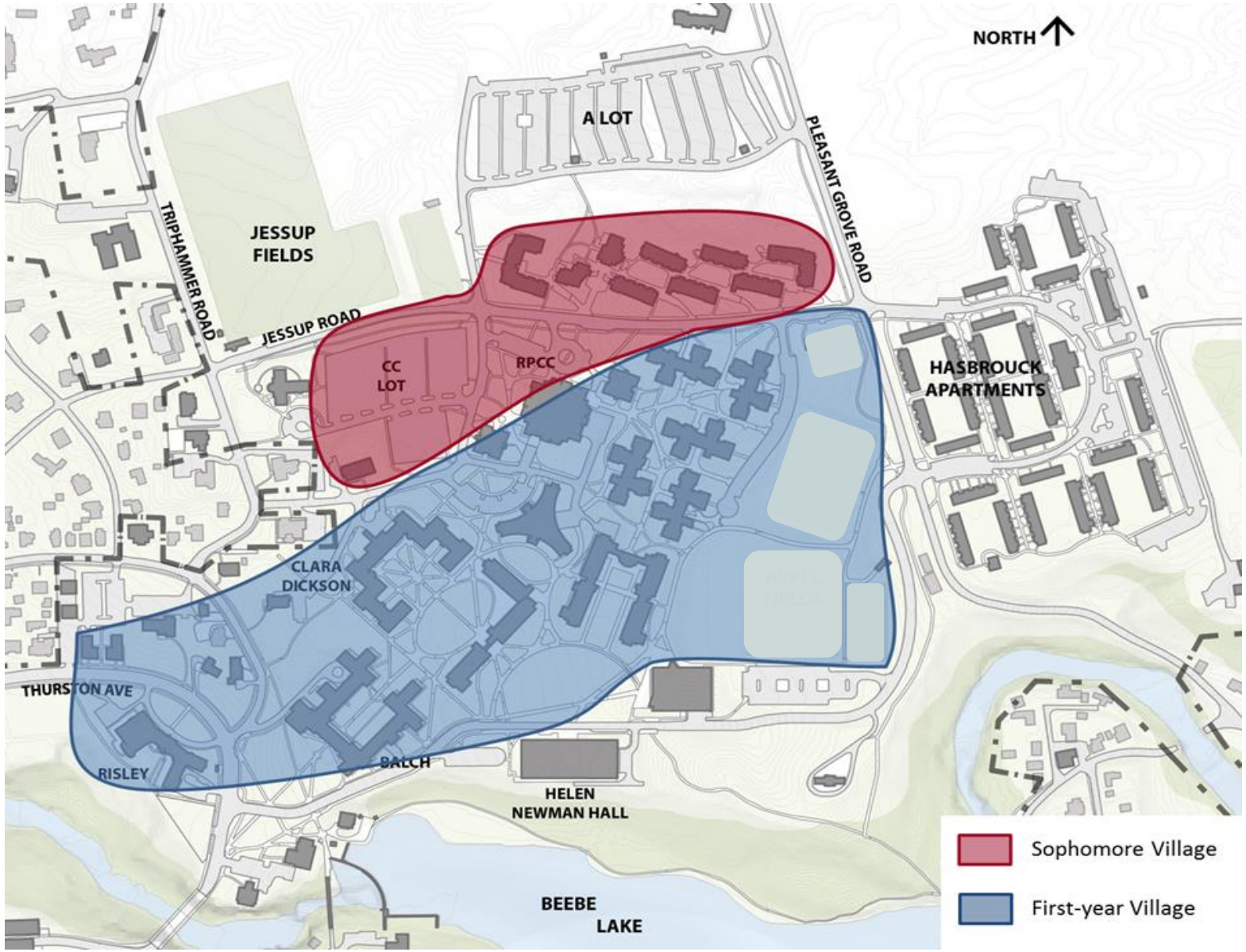
How

Site Selection

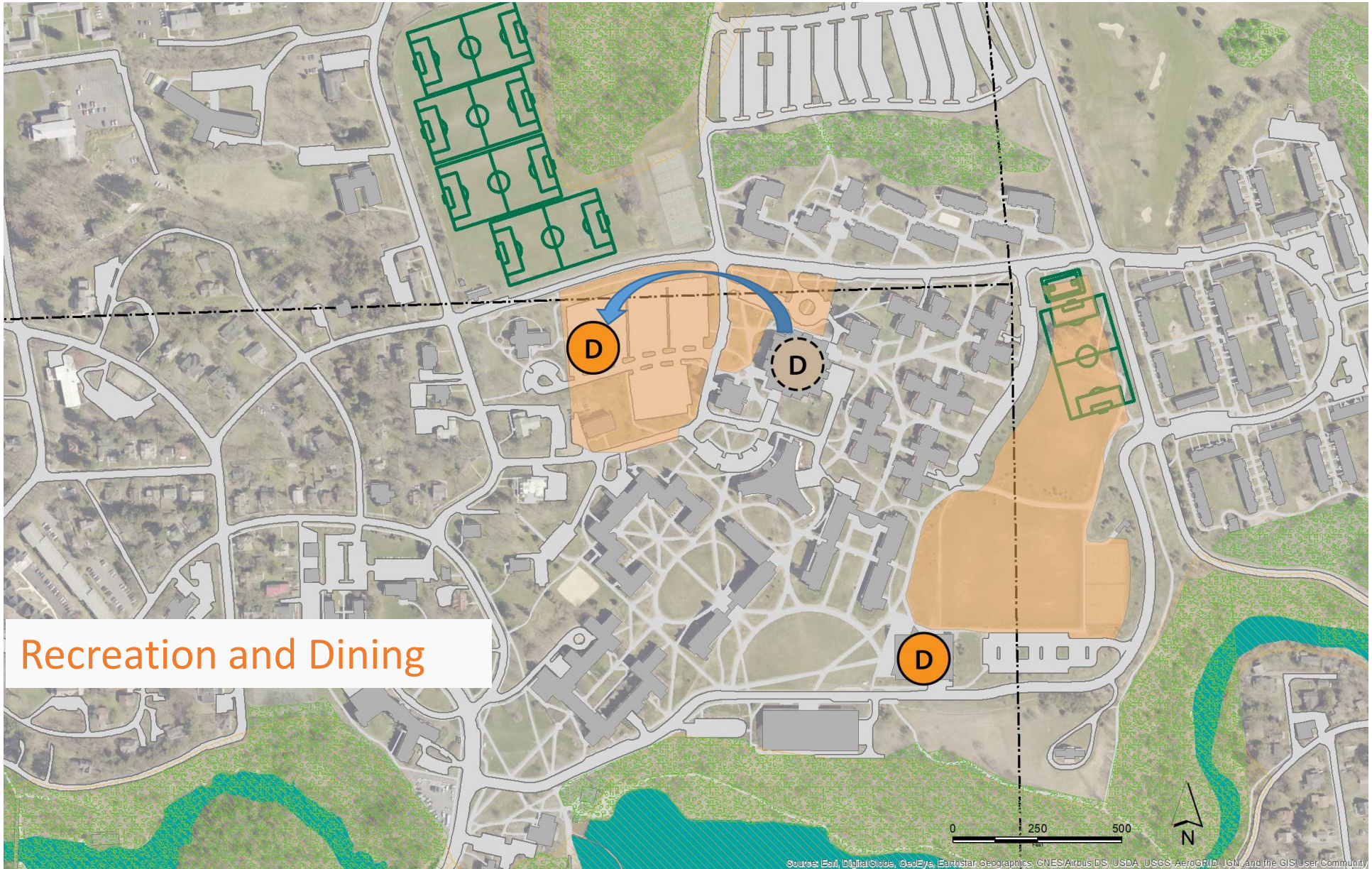
- Criteria:
  - Near existing housing and amenities such as dining and recreation
  - Little to no prep work for development required
  - Large enough to accommodate residence halls sized for 300-500 students
  - Sites that do not edge up against private residential neighborhoods or historic districts



Vision for North Campus



Campus Systems: Proposed Mitigation Strategies



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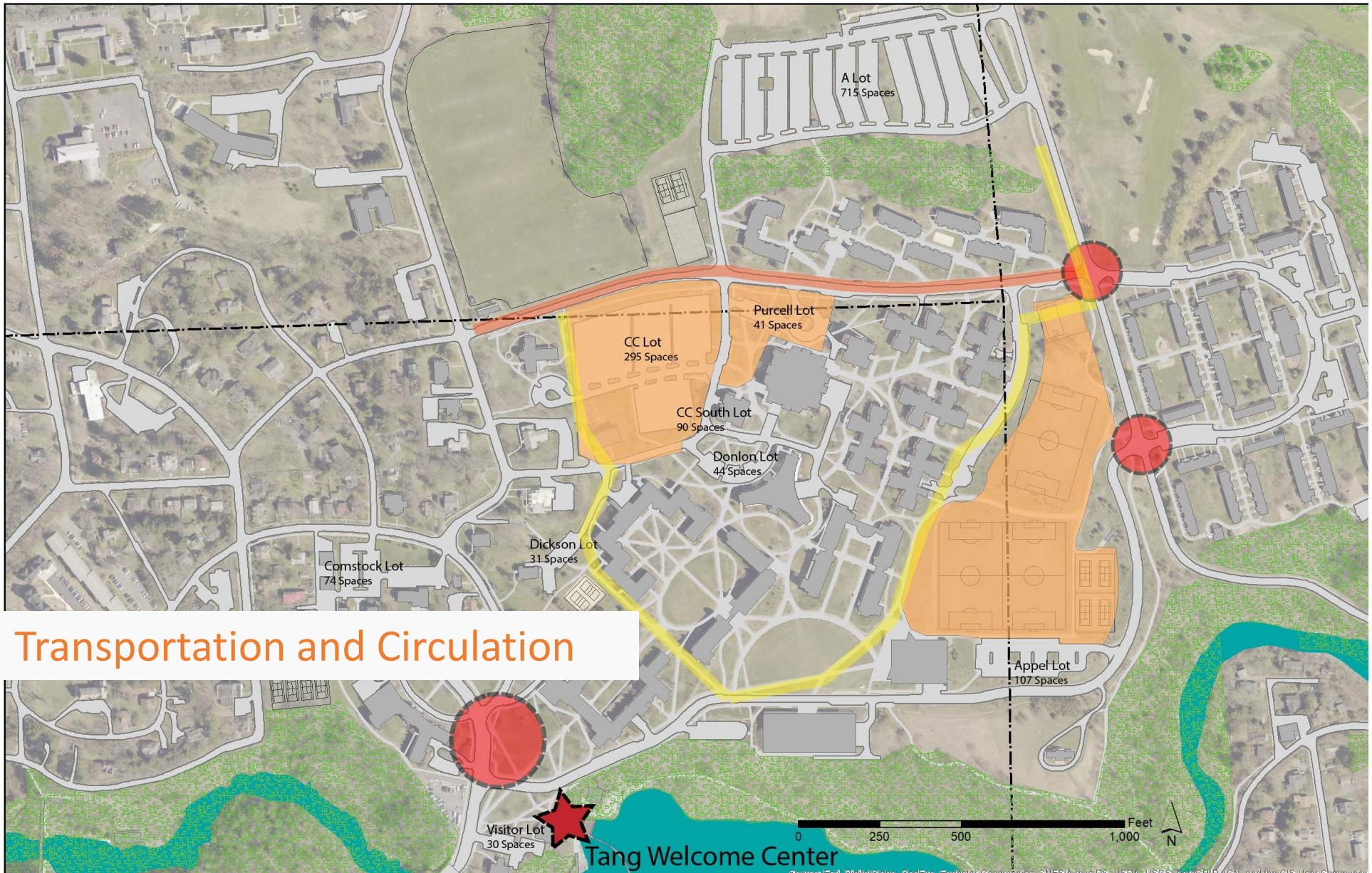


Transportation and Circulation

Proposed Site Development Guidelines

Built Environment

- Develop a cohesive North Campus with a distinct sense of place
- Relate building forms, massing, and materials to neighboring structures
- Establish a building height limit of 4-5 stories and employ design techniques to mitigate the appearance of height
- Activate the ground floor plane
- Incorporate sustainable design strategies

Proposed Site Development Guidelines

Open Space and Circulation

- Design a hierarchy of open spaces reflecting the important role of open space on the Cornell campus
- Provide complete circulation systems, with a focus on the pedestrian experience
- Design for optimal operations support and functionality
- Strategically disperse small-lot parking
- Minimize traffic impact on campus and neighboring communities

Proposed Site Development Guidelines

Site 1

- Respect 55’ height limit near Cornell Heights Historic District
- Mitigate truck traffic on perimeter roads that service new dining facility

Site 2

- Site buildings to frame long views to the west, across campus to West Hill
- Sensitively locate lighting to minimize disruption of Fuertes Observatory
- Mitigate loss of outdoor recreation
- Address anticipated stormwater concerns, especially near Appel Commons

Outcomes

Deferred Maintenance

Capacity Growth for Current Students

Capacity Growth for Future Students

Climate Action & Sustainability Progress

2016–2017 Updates

Senior Leaders Climate Action Group
President's Sustainable Campus Committee
December, 2017

CORNELL SUSTAINABILITY HIGHLIGHTS

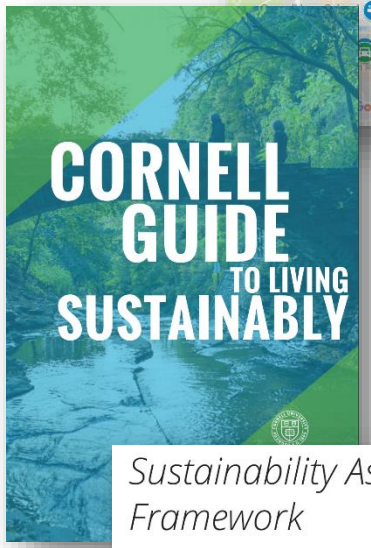
SUSTAINABILITY RESOURCES

Sustainability Campus & Community Map – New!

Closest water bottle filling station? Bike Red Bike drop off? Sustainability partners on campus? Where can you find it?
sustainabilitymap.cornell.edu

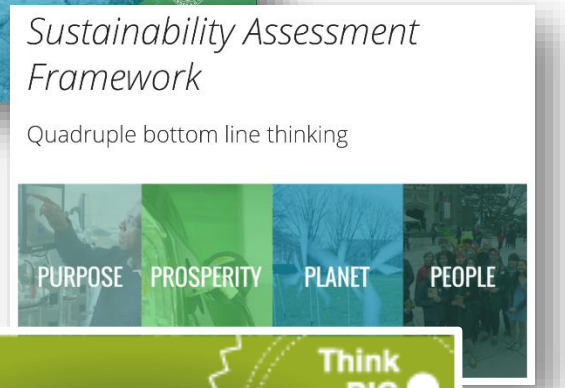
Cornell Guide to Sustainable Living – New!

An update of the Student Green Guide which includes more resources for health and wellbeing, social justice, and climate action. Online now!



Sustainability Assessment Framework Tools

Training, spreadsheets, and integration tools to help managers and staff at all levels understand how to prioritize decisions based on a quadruple bottom line.
Tool available online



Green Lab + Shut the Sash

Reducing laboratory carbon emissions is a low-hanging fruit target area for Cornell. Please encourage your lab to adopt the Green Lab Certification.
greenlab.cornell.edu

SENIOR LEADERS CLIMATE ACTION GROUP (SLCAG)

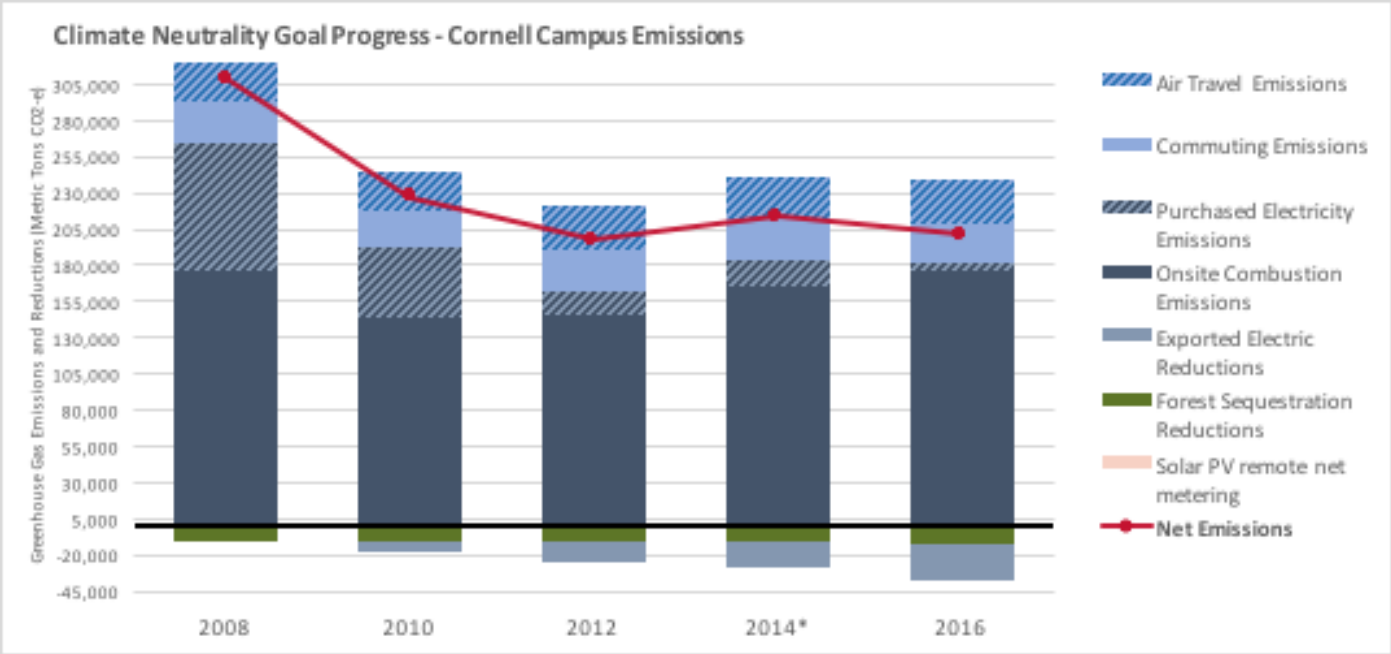
SLCAG is advancing **7 KEY PRIORITIES** in the Climate Action Plan

Priority Action	Priority Lead	Current Status
Campus Engagement	Mike Hoffmann, CALS Kim Anderson, CSO	Behavior Change Working Group launched & budget request for website
Energy Efficient Buildings	Paul Streeter, Budget & Planning	Standards and capital project process approved
Mission-Linked Carbon Offsets	Bob Howarth, E&EB	Proposal under development
Greenhouse Gas Inventory	Bert Bland, Energy & Sustainability	Proposal under discussion
Electricity	Sarah Zemanick, Energy & Sustainability	5 solar farms online = 7% of campus power *Community solar under development*
Heat	Lance Collins, Engineering	Fundraising for Earth Source Heat
Transportation	Oliver Gao, Engineering Bridgette Brady, Transportation	CTECH collaboration launched

OUR PROGRESS TO OUR CLIMATE GOAL

Carbon Neutrality by 2035

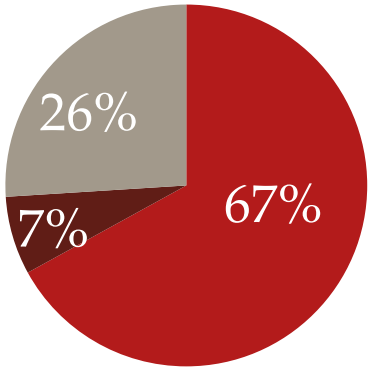
We are on track with a 33% reduction to date as compared to our 2008 baseline



GREENHOUSE GAS INVENTORY – METHANE LEAKAGE

Baseline Inventory

Ithaca Campus, 2014



241,445

Total Emissions (MT CO2e)

Campus Energy 179,303

- Produced Power: 161,806
- Purchased Electricity: 17,497

Transportation

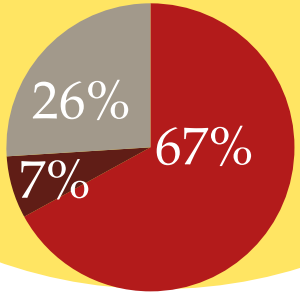
- Commuting & Air Travel: 62,142

Not shown:

Claimed Reductions: -27,795

Accounting for Natural Gas

Ithaca Campus, 2014



821,445

Total Emissions(MT CO2e)

Campus Energy 179,303

- Produced Power: 161,806
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- Methane Leakage: **580,000**

Transportation

- Commuting & Air Travel: 62,142

Claimed Reductions: -27,795

SUSTAINABILITY HIGHLIGHTS

#1

Cornell is the top
Ivy League campus
for sustainability this year

as ranked in STARS, Princeton Review
Green Honor Roll and the Second Nature
Carbon Commitment

The Cornell University Campus Sustainability Plan

Strategic goals for campus sustainability which helps us to learn, live, lead, and innovate for a sustainable campus and world.

sustainablecampus.cornell.edu > About > Sustainability Plan

CAMPUS SUSTAINABILITY PLAN – TARGET GOAL TOPICS

Climate Leadership
- Carbon Neutrality
- Climate Adaptation And Resilience
- Climate Literacy

Our Campus
- Buildings & Energy
- Food
- Land & Water
- Purchasing & Waste
- Transportation

Our Community
- Campus Engagement
- Diversity & Inclusion
- Student Leadership
- Health And Wellbeing

Our Living Laboratory
- Teaching
- Research
- Demonstration
- Public Engagement

Our Governance & Financing
- Participatory Governance
- Sustainable Investment

Scope
- Ithaca campus & community
- All students, faculty & staff
- Everyone is responsible
- Everyone can participate

CAMPUS SUSTAINABILITY PLAN – 6 GUIDING ASPIRATIONS

1. Bold leadership through discovery and demonstration of solutions for a low-carbon, resilient, and climate-adapted future.
2. A powerful living laboratory for sustainable solutions through research, learning, and demonstration on our campus and in our community.
3. An accessible campus that responsibly uses resources, mindful of our ecological footprint and the need for natural spaces that promote people's health, happiness, and well-being.
4. Demonstrated culture of sustainability through personal leadership, behavior, and inclusion which are second nature to every member of the Cornell community.
5. Climate change and sustainability literacy for every person, in every study and every role cultivating scholastic curiosity and dialogue among Cornellians and community members.
6. An equitable and sustainable future for the Finger Lakes region, New York State, and beyond through collaboration and innovation.

THANK YOU

SUSTAINABLE CAMPUS

sustainability@cornell.edu
sustainablecampus.cornell.edu
@sustainablecornell

Contact us at
sustainability@cornell.edu
if you are interested in contributing to sustainability goal setting this Spring.

Cornell University
College of Agriculture and Life Sciences

Towards a Proposal for A Carbon Offset Fee for Cornell Business Travel

Bob Howarth
The David R. Atkinson Professor of Ecology & Environmental Biology

December 13, 2017

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Focus on carbon fee for business-related travel

Options for Achieving a Carbon Neutral Campus by 2035

Transportation is the second largest contributor to greenhouse gas emissions from Cornell, after central heating plant.

Business air travel accounts for half of transportation emissions; business driving + commuting are other half.

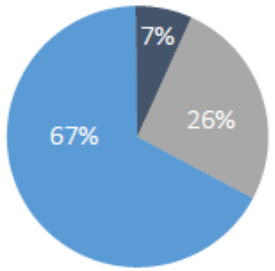
26% of carbon dioxide emissions.

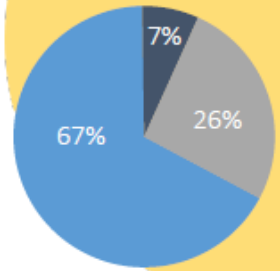
8% of total greenhouse gas emissions, including methane.

Assessing the Climate Impact of Natural Gas

In order to account for the full impact of fossil fuel use to meet campus energy needs, it is important to consider the impact of methane leakage during production of the natural gas purchased by Cornell. Natural gas production and delivery systems, particularly in the Northeast United States, have a high percentage of methane leakage. The impact of methane on climate change is calculated to be 86 times higher than that of carbon dioxide over a 20-year period, making it an important area of impact to consider. Accounting for the impact of these losses adds 580,000 metric tons of carbon dioxide equivalent (MTCO2e) to Cornell's existing energy footprint. A comparison of this addition can be viewed in Figure 2, below. Accounting for the upstream cost of fossil fuels is necessary to accurately compare the benefits of moving to renewable energy resources for the campus energy supply. Applying the social cost of carbon to this increase, the financial bottom line for doing business as usual – that is, simply maintaining and operating the campus as it exists today – increases from $42 million per year to $85 million per year. More financial details on the inclusion of methane leakage are presented in *Table 7: Financial Details for All Solutions*, pg 14.

Figure 2: Cornell's 2014 Ithaca Campus Greenhouse Gas Inventory, Impact of Using Natural Gas





	213,650 Total Net Emissions (MT CO2e)	793,650 Total Net Emissions (MT CO2e)
Campus Energy	179,303	179,303
Produced Power	161,806	161,806
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Methane Leakage		580,000
Transportation	62,142	62,142

Options for Achieving a Carbon Neutral Campus by 2035

Carbon neutrality by 2035 requires zero net emissions from travel.

Wider societal improvements in renewable transportation will help (electric cars; use of renewable bio-jet- A fuel; move towards electric vehicles).

But some off-sets like to be necessary.

Off-sets beginning soon allow Cornell to show more rapid progress on 2035 goal.

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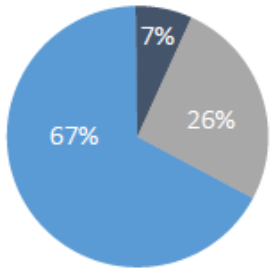

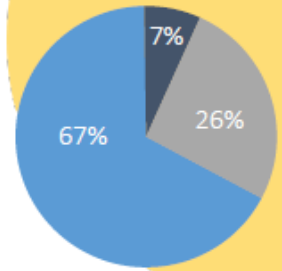

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What is a carbon offset?

….. a reduction in emissions greenhouse gases made in order to compensate for or to offset an emission made elsewhere.

For example, paying for reforestation to compensate for your CO2 emission.

We have a more interesting example locally: Finger Lakes Climate Fund.

Finger Lakes Climate Fund: using travel offsets to reduce greenhouse gases in "modest income" homes in Tompkins County

fingerlakesclimatefund.org/pages/portfolio

air travel | car travel | building energy | quick offset

The Khatkhate Home

Grant Amount: $1,799

CO2 Offset: 72 tons

Radhika Khatkhate is a single parent living in the Town of Ithaca with her two children. Their home is spacious with beautiful views of the city, but even though it was built in the late 80s, it was very poorly insulated and drafty. Worse, it was heated by inefficient electric resistance baseboard and a direct-vent gas fireplace. Snug Planet got them signed up for the Empower and Assisted Home Performance program to do extensive air sealing, insulating of the attic and hot water pipes, and installation of high efficiency LED bulbs. But they needed the Climate Fund to pitch in and help cover the costs of a new air-source heat

Read More

The Tierney Home

Grant Amount: $2,114

CO2 Offset: 85 tons

The Tierneys of Dryden own one of our typical 60's era wood frame houses with severely inadequate insulation and plenty of air leaks, serviced by an aging fuel oil boiler. Thanks to the folks at Halco and subsidies from NYSERDA and the grant from our Climate Fund, they were able to have multiple improvements done to bring their energy bills down. Thick attic insulation, air sealing around the home, new thermostats and LED bulbs, and a high efficiency air source heat pump water heater will save them well over $1,000 a year in energy costs.

The Licitra Home

A proposal for Cornell travel carbon offset fee:

- **Estimate emissions for each business trip, using simple metrics** (average emissions per passenger mile for air travel, average mileage for cars, etc.)

- **Place a dollar value on these emissions for each business trip, valued at $57 per metric ton of CO2** (the value adopted by the SLCAG in Sept 2016 report, based on analysis of Prof. Bill Schultze)

- **Use collected fees following the model of the Finger Lakes Climate Fund (Sustainable Tompkins)** (which is very cost effective way to reduce greenhouse gas emissions, and so can in fact fully off-set travel emissions)

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A few considerations with FLCF model:

1) Their current fee is less than half of the $57/ton value;
2) They work only within Tompkins County; Cornell may want to provide assistance to our staff who live outside Tompkins County;
3) Their program is very small, relative to what full recovery of travel offset fees from Cornell would be (200-fold expansion).

Comparing emissions and travel carbon offset fee by type of travel travel:

For cars:

-- assume 25.1 miles/gal average vehicle efficiency (US car fleet average)

-- assume only one person in car

-- therefore, 355 g CO_2 per mile driven

-- at $57/ton CO_2, **$0.02 per mile** carbon fee

For air travel:

-- assume 2.8 MJ energy used per mile per passenger (US average; FAA 2015)

-- therefore, 188 g CO_2 per mile flown

-- at $57/ton CO_2, **$0.011 per mile** carbon fee

For buses:

-- assume 78 g CO_2 per mile driven (US average; UCS 2008)

-- at $57/ton CO_2, **$0.0044 per mile** carbon fee

Comparing emissions and travel carbon offset fee by type of travel travel:

For cars:

-- assume 25.1 miles/gal average vehicle efficiency (US car fleet average)

-- assume only one person in car

-- therefore, 355 g CO_2 per mile driven

-- at \$57/ton CO_2, **\$0.02 per mile** carbon fee

For air travel:

-- assume 2.8 MJ energy used per mile per passenger (US average; FAA 2015)

-- therefore, 188

-- at \$57/ton CO

Approximately \$0.50 per gallon of gasoline

For buses:

-- assume 78 g CO_2 per mile driven (US average; UCS 2008)

-- at \$57/ton CO_2, **\$0.0044 per mile** carbon fee

Critical and contentious issue: Who should pay the fee?

- **Cannot be charged to federal or state grants; departmental, college, and university funds are tight.**

- **My suggestion to the SLCAG: ask the traveler to pay, out of the funds they receive through travel reimbursement. This avoids grant restrictions.**

Example, Cornell to NYC by car: 450 miles roundtrip; one overnight

For 450 miles, 0.16 metric tons CO_2 emitted; at $57/ton, **$9.12** fee assessed.

Representative business travel cost:

$0.535/mile = $240.75 for 450 miles
$239/day for hotel (per diem allowance)
$55.50/day for meals (first and last day of travel)
Total reimbursement = $590.75

Traveler is assessed $9.12 C fee, so reimbursement reduced by 1.5%

$581.63 rather than $590.75

Second example, Cornell to San Francisco (4 days, 3 nights)

For 5,634 miles round-trip, 1.06 metric tons CO_2 emitted; at $57/ton, **$60.42** C fee assessed.

Representative business travel cost:

Air fare = $1,105
Hotel ($267/night, per diem allowance) = $801.00
Meals ($55.50/day first and last day, $74/day otherwise) = $259.00
Total reimbursement = $2,165.00

Traveler is assessed $60.42 C fee, so reimbursement reduced by 2.8%

$2,104.58 rather than $2,165.00

Critical and contentious issue: Who should pay the fee?

- **Cannot be charged to federal or state grants; departmental, college, and university funds are tight.**

- **My suggestion to the SLCAG: ask the traveler to pay, out of the funds they receive through travel reimbursement. This avoids grant restrictions.**

  -- This would be voluntary, and potentially tax deductible.

  -- Could be run as an information program, ie "the cost to the environment and public health of your trip was $XX. Would you like to make a voluntary contribution towards this?"

  -- Could have an easy "opt in" button as part of travel reimbursement request.

  -- Could be voluntary, but with "opt out" as part of travel reimbursement; you pay, unless you actively choose not to (my recommendation to SLCAG)

Other issues for consideration:

- When presented to SLCAG, significant opposition for inclusion of graduate students and employees (even though voluntary)

- Should we try this just for travel by faculty? (possible expansion to graduate students and employees at a later time?)

- Does a trial with some subset of the University (a college, or a few departments) make sense?

Other issues for consideration, continued:

- **Who should administer and dispense the collected fees?**

-- Potentially a large amount of funds (more than 200-times greater than Finger Lakes Climate Fund current efforts, if 100% of Cornell travel offsets collected. Up to maximum of $3.5 million per yr.

-- Distribution of funds requires on-the-ground technical skill and knowledge.

-- Need for auditing.

-- If administered through a non-profit, the voluntary donations should be tax deductible.

Other issues for consideration, continued:

- Should we look beyond average emissions? Short flights have higher emissions per mile than longer flights. N2O and water vapor emissions in stratosphere not considered…. Car mileage varies substantially.

At least to start, probably want to keep accounting simple.

So for example, probably do not want to reward the owner of a Toyota Prius or Nissan Leaf nor penalize the owner of a Hummer.

Howarth's car

Cornell University
College of Agriculture and Life Sciences

Thanks for opportunity to present today.

Cornell business travel represents a significant part of our carbon emissions, second only to central heating plant.

Cannot meet goal of carbon neutrality by 2035 without addressing travel emissions.

A plan for carbon fee for travel offsets will require strong community buy-in.

Carbon fee for travel offsets represents the fastest way to reduce Cornell's greenhouse gas footprint NOW.