



Clean Energy to Communities (C2C): Connecting Communities to Free Technical Assistance

August 24, 2023

1:00pm – 2:00pm ET



Agenda

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Welcome and Speaker Introduction

Team Members



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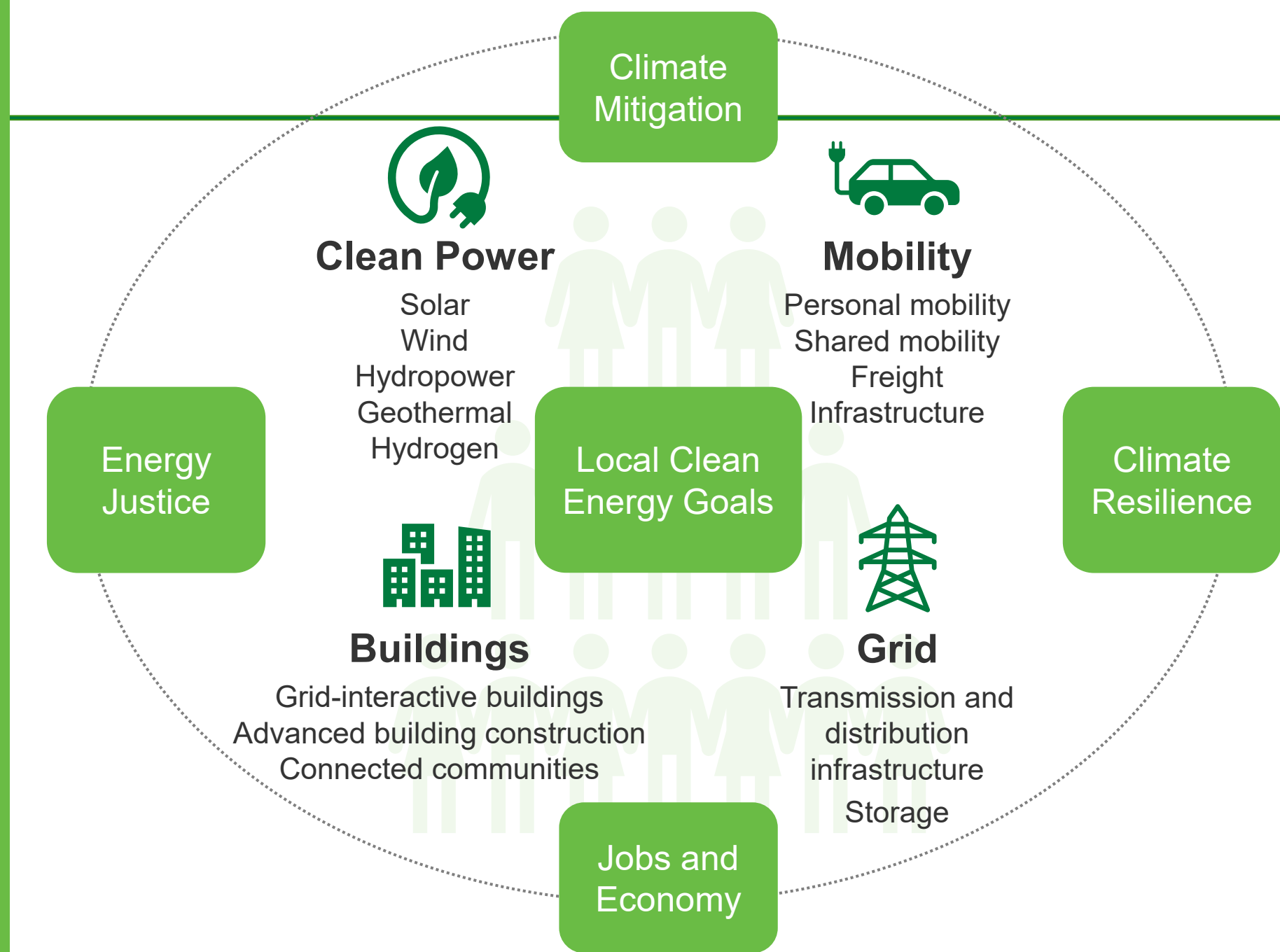
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Lead, National
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General C2C Overview

C2C provides innovative, cross-cutting technical solutions using an integrated approach

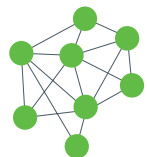


C2C Technical Assistance Opportunities



In-depth Partnerships

Multiyear partnership made up of teams (local government, community-based organizations, and electric utilities) that work alongside national lab staff to apply robust modeling and analysis tools and conduct hardware-in-the-loop testing of solutions to evaluate and test potential scenarios and strategies before full technology deployment.



Cohorts

Multi-community engagements that convene regularly for approximately 6 months to exchange strategies and best practices, learn in a collaborative environment, and workshop plans and strategies to overcome challenges around a common clean energy transition topic.



Expert Match

Short-term, no-cost technical assistance for communities seeking to answer a near-term clean energy question.

C2C Technical Assistance Opportunities

	In-Depth Partnership	Cohorts	Expert Match
Duration	~3 years	~6 months	~3 months
Reach	~4 communities	~100 communities	~200 communities
Outcomes	Complex multisectoral modeling, analysis, and validation of technologies in order to mitigate risk	Pitch decks, elements of plans, best practices, strategies, templates, and relationships with peers across the United States	Bounded analysis, research, or data to help communities make near-term decisions, mitigate challenges, or approach upcoming opportunities



C2C: Clean Energy to Communities

U.S. DEPARTMENT OF ENERGY

Every 6 months:

3 new cohorts launched
on pre-selected clean
energy topics

Application:

Eligible entities (such as
local governments, utilities,
CBOs) apply to participate
in a particular cohort

Selection:

Evaluation committees review
applications and select 8-15
communities to participate in
each cohort

Peer-Learning Cohorts

- Peer-learning cohorts are multi-community engagements that convene regularly for approximately 6 months to exchange strategies and best practices, learn in a collaborative environment, and workshop policy or program proposals, action plans, or strategies to overcome challenges around a common clean energy transition topic



Lab experts provide a cohort of up to 15 communities with education, case studies, analysis and modeling tools, templates, trainings, and facilitated collaboration to enable accelerated clean energy progress.

For more information, visit:
www.nrel.gov/c2c/cohorts

Previous Cohort Topics

Pilot (Jan-June 2023)

Moving from Idea to Implementation: Starting on the Pathway to 100% Clean Energy

Accelerating the Deployment of Equitable, Grid-friendly Electric Vehicle Charging Infrastructure

Unlocking Clean Energy for All: Financing Strategies for a More Equitable Energy Future

Current (July-Dec 2023)

Planning and Funding for Electric Vehicle Charging Infrastructure Deployment

Implementing a Municipal Clean Energy Procurement Strategy

Incorporating Community Voices into Clean Energy Planning and Deployment

For more information, visit:
www.nrel.gov/c2c/cohorts



C2C: Clean Energy to Communities

U.S. DEPARTMENT OF ENERGY

Expert Match Program

C2C's Expert Match Program connects clean energy experts with local governments, electric utilities and community-based organizations to provide technical support for renewable energy projects in low-income communities.

Expert Match offers:



Access to experts from the U.S. Department of Energy's national lab system.



40–60 hours of support over 3 months from first kickoff call.



Focus on community-driven challenges or goals— from clean electricity, buildings, mobility, and grid to financing, environmental justice, and more.

For more information, visit:
www.nrel.gov/c2c/expertmatch



Expert Match Case Study

Cohoes, New York, is a small working-class community in upstate New York with limited resources and energy-related expertise. The city wanted to reduce its climate impact, but its municipal buildings were old and many had slate roofs that weren't suitable for solar panels.

Expert Match helped Cohoes reduce its climate impact and increase its renewable energy capacity by providing guidance on:

- **Retrofitting historic buildings for energy efficiency**, including reviewing proposals for reducing emissions and evaluating technology options.
- Developing a **3.2-MW floating solar project on the water reservoir**, which will generate electricity for municipal buildings and share with other organizations.

For more information, visit:
www.nrel.gov/c2c/expertmatch

C2C Expert Match Case Study

Unincorporated Norcross, GA

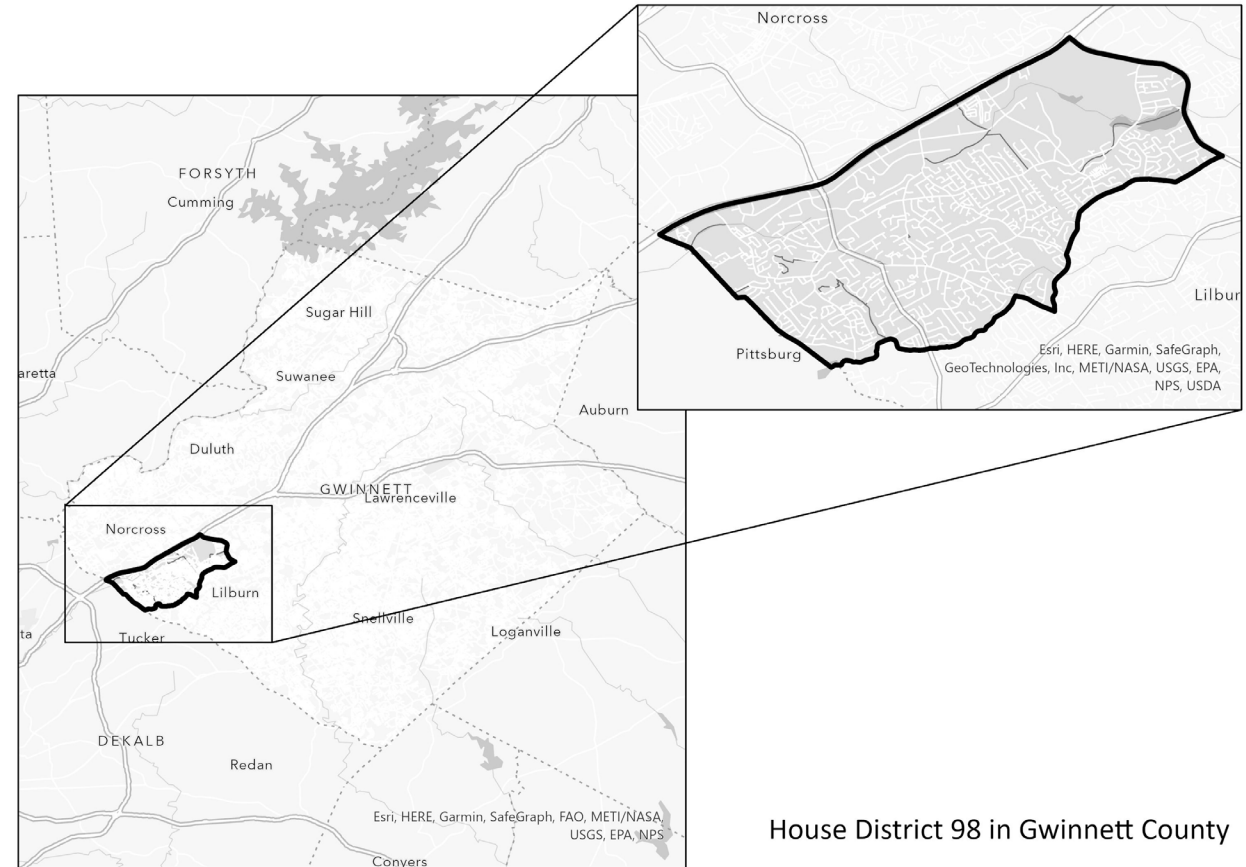
Introduction – Marvin Lim

- CEO of Lucky Shoals Community Association
- Georgia State Representative (HD 98)
- Represents Gwinnett County in Metro Atlanta including Norcross, Lilburn, and Tucker



Left to Right: United States Secretary of Energy Jennifer Granholm, Georgia State Representative Marvin Lim (HD 98), and Congresswoman Nikema Williams (GA-05)

Unincorporated Norcross, Georgia



House District 98 in Gwinnett County

Lowering Barriers to Entry for Underserved Communities

- **Problem:** Dilapidated real estate offerings hampering community and economic development. Source: Gwinnett Chamber of Commerce.
- **Barrier:** Lack of resources for clean energy in commercial buildings. High barrier for property owners hampering interest.
- **C2C:** Eliminating barrier to entry, while being community-led.
- **Complements:** Work in residential/housing & infrastructure.



CEO of Lucky Shoals Community Association and Georgia State Representative Marvin Lim meets with Team Georgia HD 98. Members include representatives from the Georgia Hispanic Construction Association, the Gwinnett Housing Cooperation, and the Southeast Energy Efficiency Alliance (SEEA).

Team Georgia HD 98

TEAM GEORGIA HD 98

THE COMMUNITY

- **unincorporated Norcross** (in most diverse, second most populous county in Georgia)
- **87 percent BIPOC** (50 percent **immigrant**), 25 percent poverty, 40 percent uninsured
- **all DACs** (White House Climate & Economic Justice Screening Tool)
- **most energy burdened** residents (and oldest housing stock) in county



THE GOAL

On **clean energy** and weatherization in **housing**, train **BIPOC contractors** and **workforce** already located in diverse, immigrant-populated, underresourced area, to do work in their own area, to **address their own community's** energy burdens/needs.

And tackle all & J40 **policy** priorities.



THE PARTNERS

- **CBO:** Lucky Shoals Community Association
- **Business/workforce:** Georgia Hispanic Construction Association
- **Energy experts:** Southeast Energy Efficiency Alliance
- **Housing:** Gwinnett Housing Corporation

*with support of **HD 98 State Representative Marvin Lim**



THE WORK

- **Community engagement:** identify needs and lived experiences of energy burdens in housing (Lead: LSCA)
- Develop **contractors/workforce pipeline plan** around clean energy in housing (Lead: GHCA)
- Develop **pilot clean energy housing projects in HD 98** (Lead: GHC)
- Develop **plan to bring federal \$**, provide **technical assistance** (Lead: SEEA)
- Present to **policymakers** (Lead: Rep. Lim)

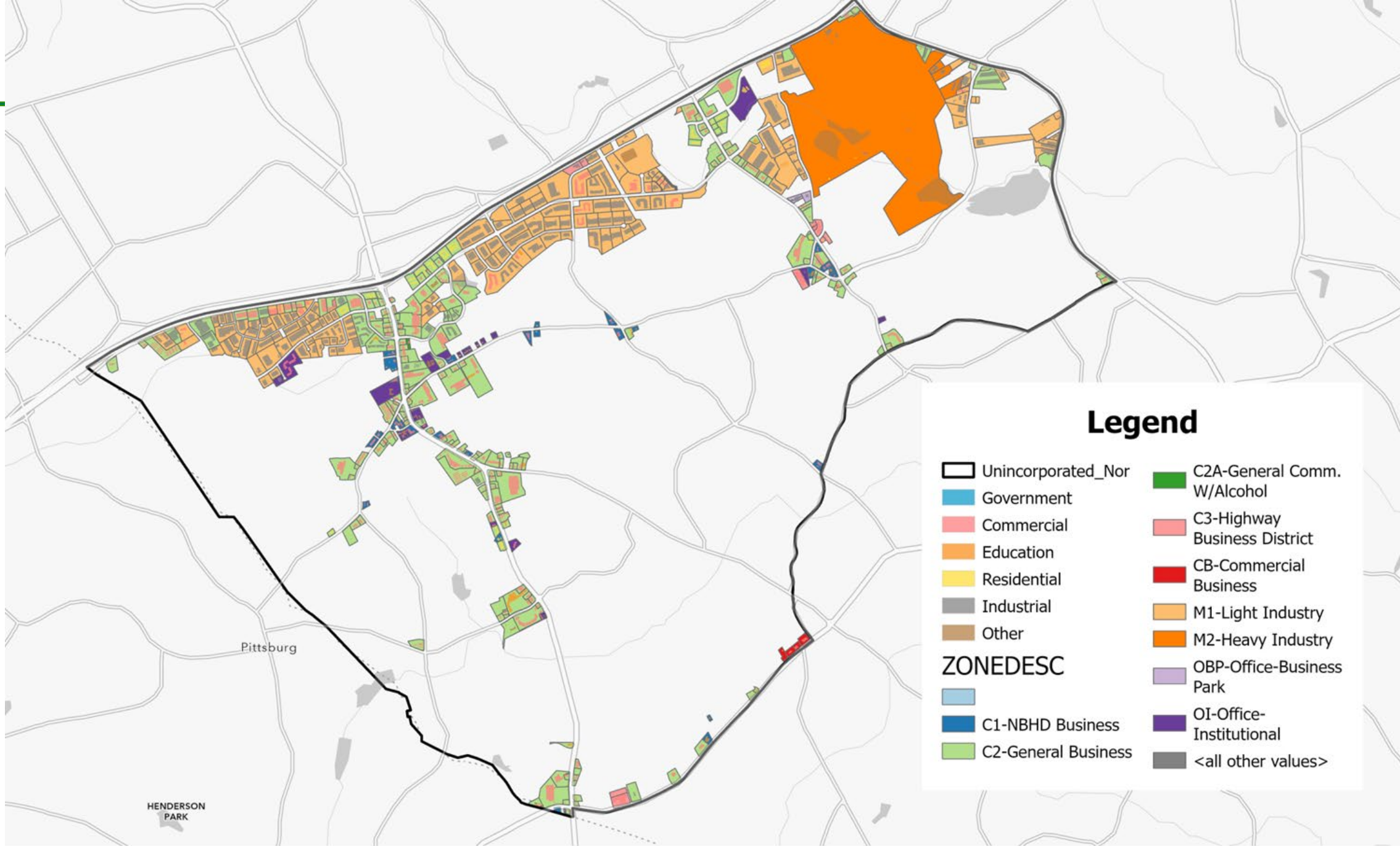




Commercial Building Review

Building Type	Overall Size (square feet)	Average Building Size (square feet)	Number of Buildings
Storage Warehouse	5,762,654	39,470	146
General Retail	1,045,373	15,603	67
General Office	975,266	20,318	48
Discount	629,077	125,815	5
Neighborhood Shopping Center	312,713	44,673	7
Supermarket	256,133	64,033	4
Hotel, Limited Service	212,161	42,432	5
Church	195,287	15,022	13
Motel, Extended Stay	159,050	39,763	4
Convenience Market	157,037	4,907	32
Shopping Center	149,669	74,835	2
Medical Office	80,855	8,086	10
Auto Service	66,402	4,743	14
Auto Showroom	64,522	64,522	1
Day Care Facility	63,067	5,733	11

More than half of all commercial square footage is made up of medium-sized storage warehouses, which have an average size of 39,000 square feet.



What upgrades are happening in the district's building stock?

- Reroofing
 - 18 commercial permits pulled since 2010
 - 5 storage warehouses, 3 business offices, 5 general retail buildings, 1 church, 1 big box retail store (Home Depot), 1 commercial manufacturing facility, 1 county government office
- HVAC Replacements
 - 15 commercial permits pulled since 2010
 - Range from chain fast food, night clubs, video rental store, commercial manufacturing facilities and an elementary school
- Water Heater Replacements
 - 4 commercial permits pulled since 2010
 - 1 hotel and 2 commercial manufacturing companies
- Lighting
 - 2 commercial permits pulled since 2010
 - Installation of efficient lighting technologies in government owned office building

- **EV Charging**

- 2 commercial permits pulled for the installation of EV chargers since 2010
- DC Fast charger with 4 EVSE ports at Carter Oaks Crossing shopping center

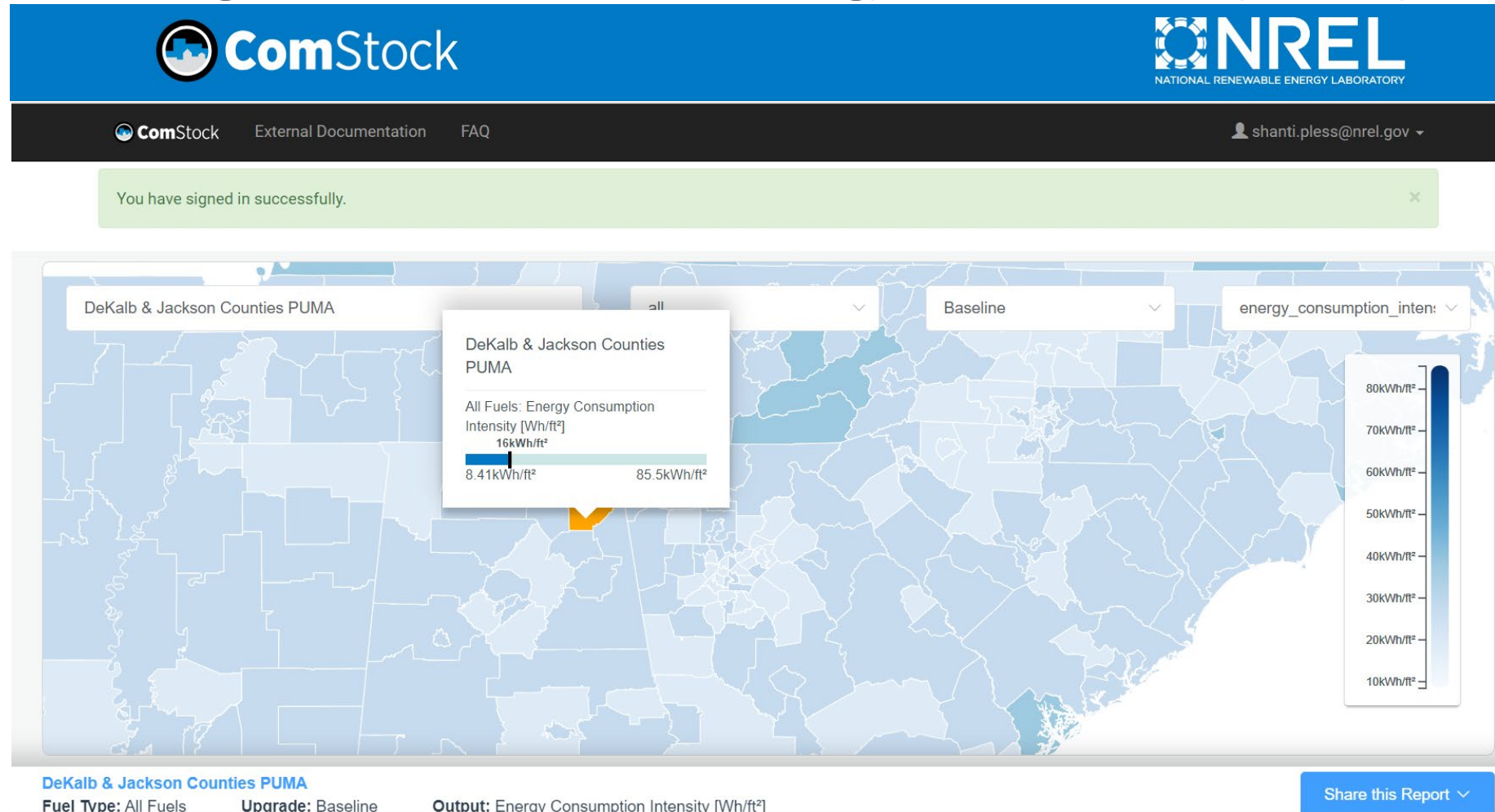
- **Rooftop Solar**

- 1 commercial permit pulled since 2010
- Herc Equipment Rental



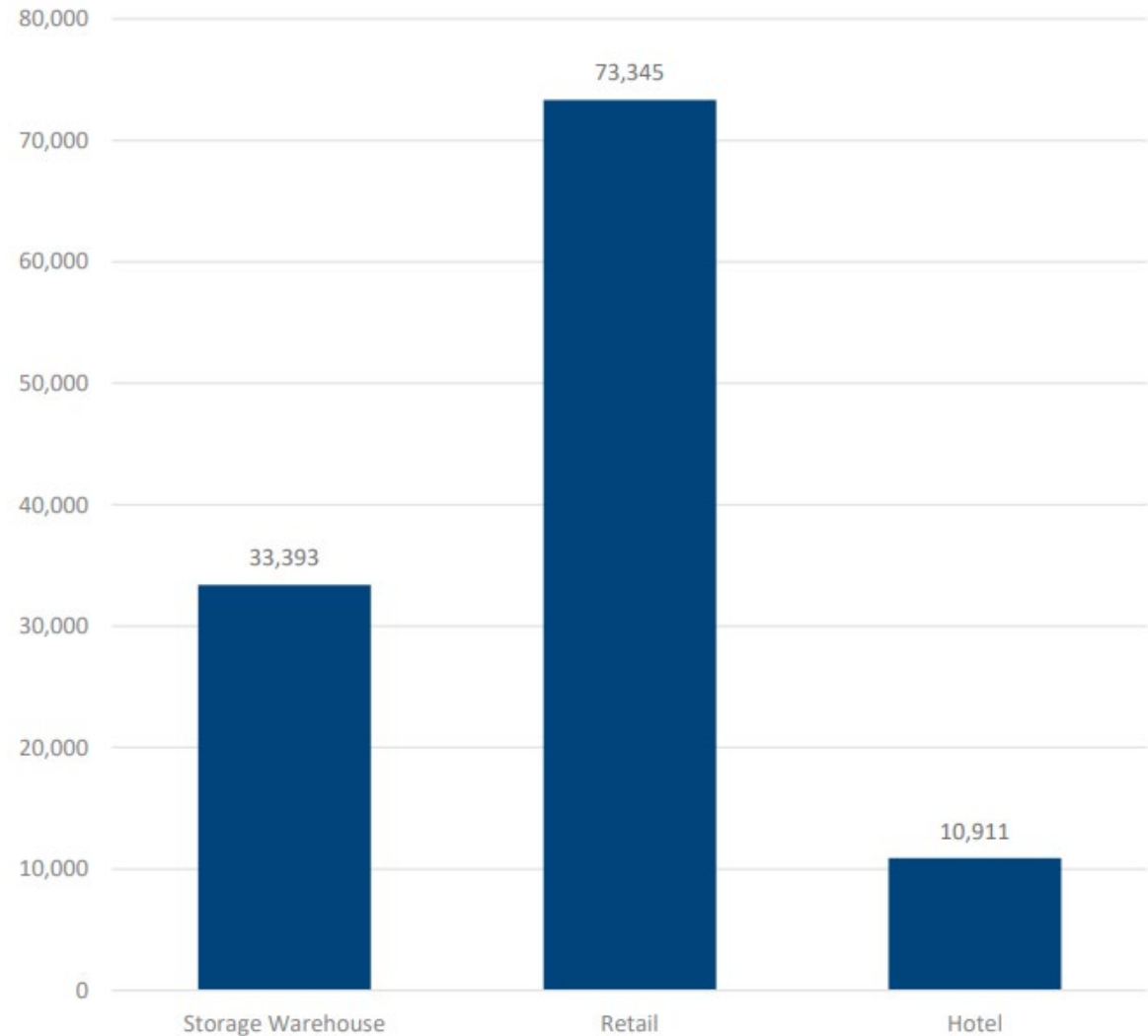
ComStock Analysis

- 400 building commercial building dataset of existing commercial buildings
- Use Comstock to map buildings dataset to estimated energy end uses and system types
- Understand opportunities and building types for focused engagements

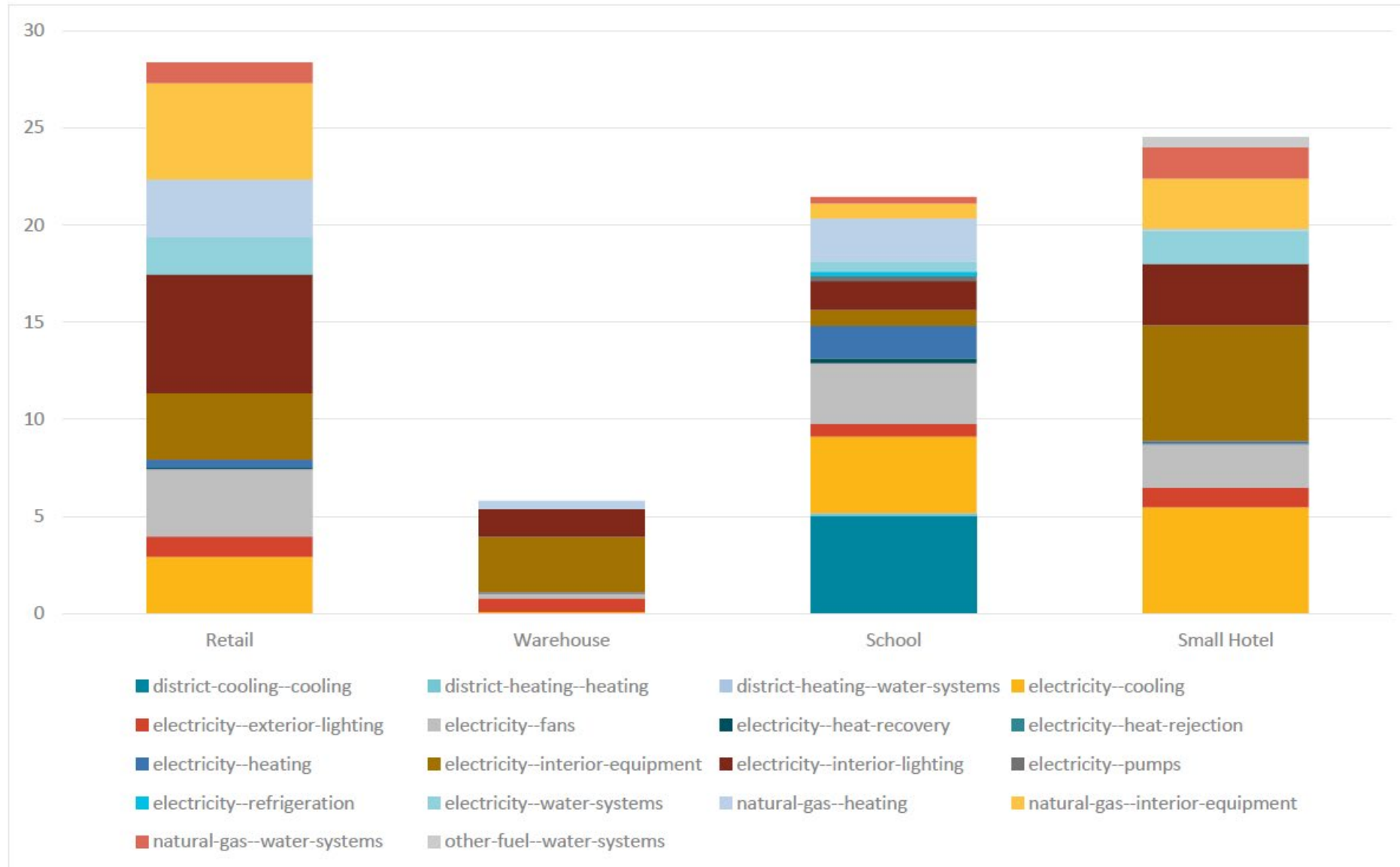


Estimated Energy Use in Key Building Types

- Retail buildings are the biggest energy users in unincorporated Norcross (by kWh)

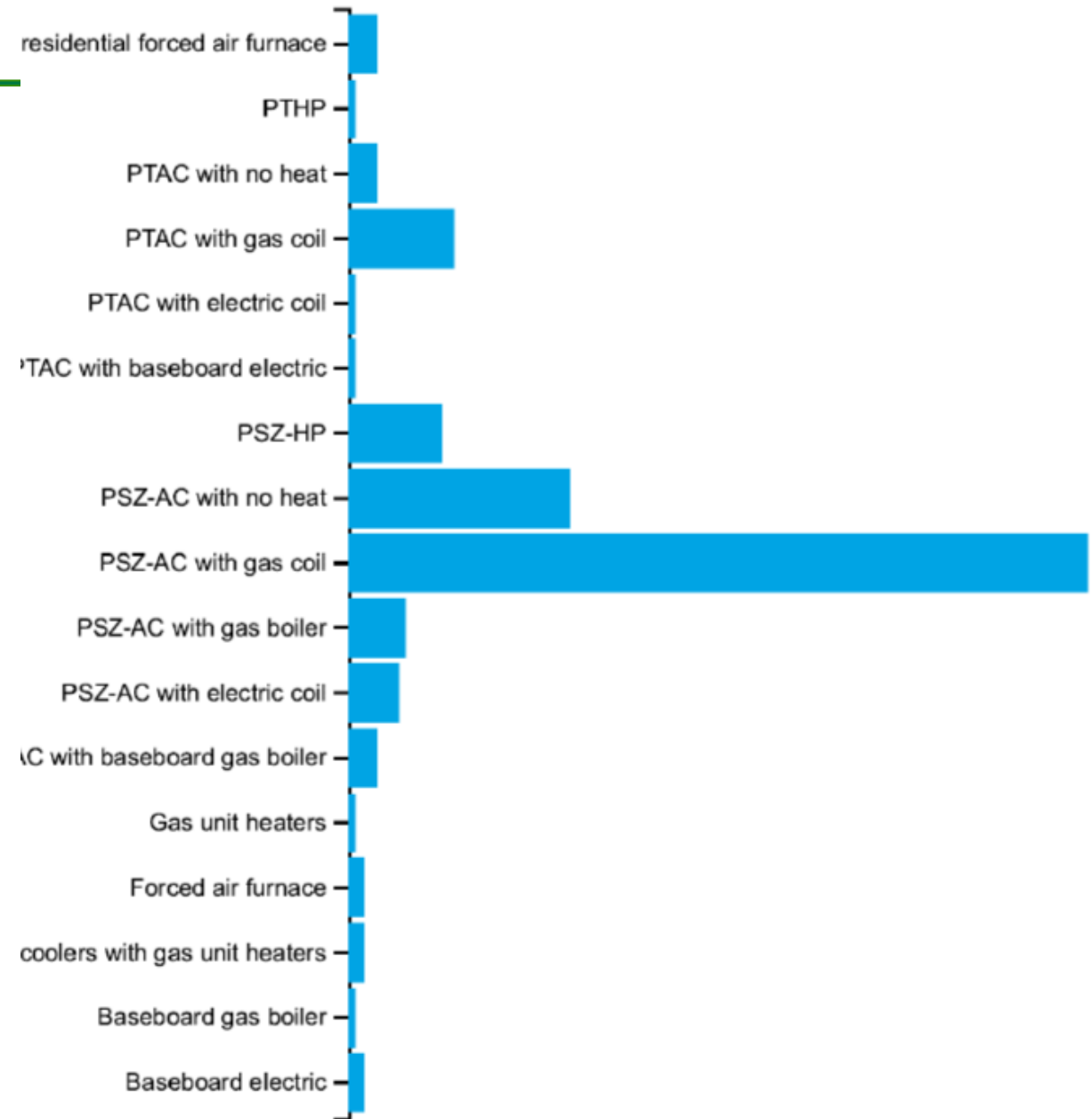


End Use Intensity by Building Type (Wh/ft²)



Common System Types

- Focus on a rooftop retrofit program
- Hotel HVAC and Hot water
- Retail Refrigeration



Building Efficiency Opportunities

- General Retail:
 - Key component-level energy savings can be achieved through efficiency measures that address (in declining order): lighting, interior equipment powered by natural gas, electric fans, electric interior equipment, and electric cooling.
 - General retail buildings used for food storage and/or sales can also achieve key savings by upgrading to more highly efficient refrigeration equipment.
 - Commercial permits indicate that there have been few upgrades made to rooftop HVAC units and few retail establishments that have engaged in reroofing. Because cooling/heating are major energy loads and few building owners have upgraded aging equipment, we encourage the adoption of more efficient HVAC equipment, through RTU upgrades.
 - Finally, reroofing, including adding insulation during the reroof and making the roof highly reflective to promote efficiency, is critical given the age of roofs in the district and lack of reroofing activity.
 - EV charging infrastructure
- Storage Warehouses:
 - Key component-level energy savings can be achieved through efficiency measures that address (in declining order): electric interior equipment and electric lighting.
 - Because there has been little investment in roofing, reroofing of flat and unshaded roofs in most of the district's warehouses could be paired with rooftop solar installations to further reduce energy usage, as outlined above.

Building Efficiency Opportunities

- Hotels
 - Key component-level energy savings can be achieved through efficiency measures that address (in declining order): electric interior equipment, electric cooling, interior lighting, gas interior equipment, and gas water heating.
 - While many strategies are similar to other building types, swapping out aging water heaters for more highly efficient equipment is a key strategy that could reduce the energy usage in hotels.
- Public Buildings
 - The component-level upgrades that can support efficiency upgrades in public buildings are similar to those outlined for general retail and warehouses above. In schools, for instance, key component-level energy savings can be achieved through efficiency measures that address (in declining order): cooling, fans, heating, and lighting.
 - Public buildings in Gwinnett County can be required to invest in efficiency upgrades through the passage of benchmarking ordinances or building performance standards (BPS).

Conclusions

- In the absence of benchmarking and/or BPS implementation/improvement, will require engaging building owners and tenants to understand the value of energy efficiency to their business and opportunities for rebates.
- Convene local building owners and tenants with Georgia Power – Partnership opportunities with local business ambassadors who can help navigate efficiency strategies and financing (HVAC systems, lighting, rooftop solar opportunities, EV charging):
 - Central Heating and Air Conditioning (HVAC)
 - Local lighting suppliers (lighting)
 - Herc Equipment Rentals (solar)
 - Walmart (EV charging)

Applying to C2C

Applying for Expert Match

Interested in applying? Use the QR code to access the Expert Match website and application.

It takes less than 20 minutes to complete an application.



Q & A

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