

# Reducing Carbon Emission In A Complex Environment

## Heritage Museums & Gardens





## *Speakers*



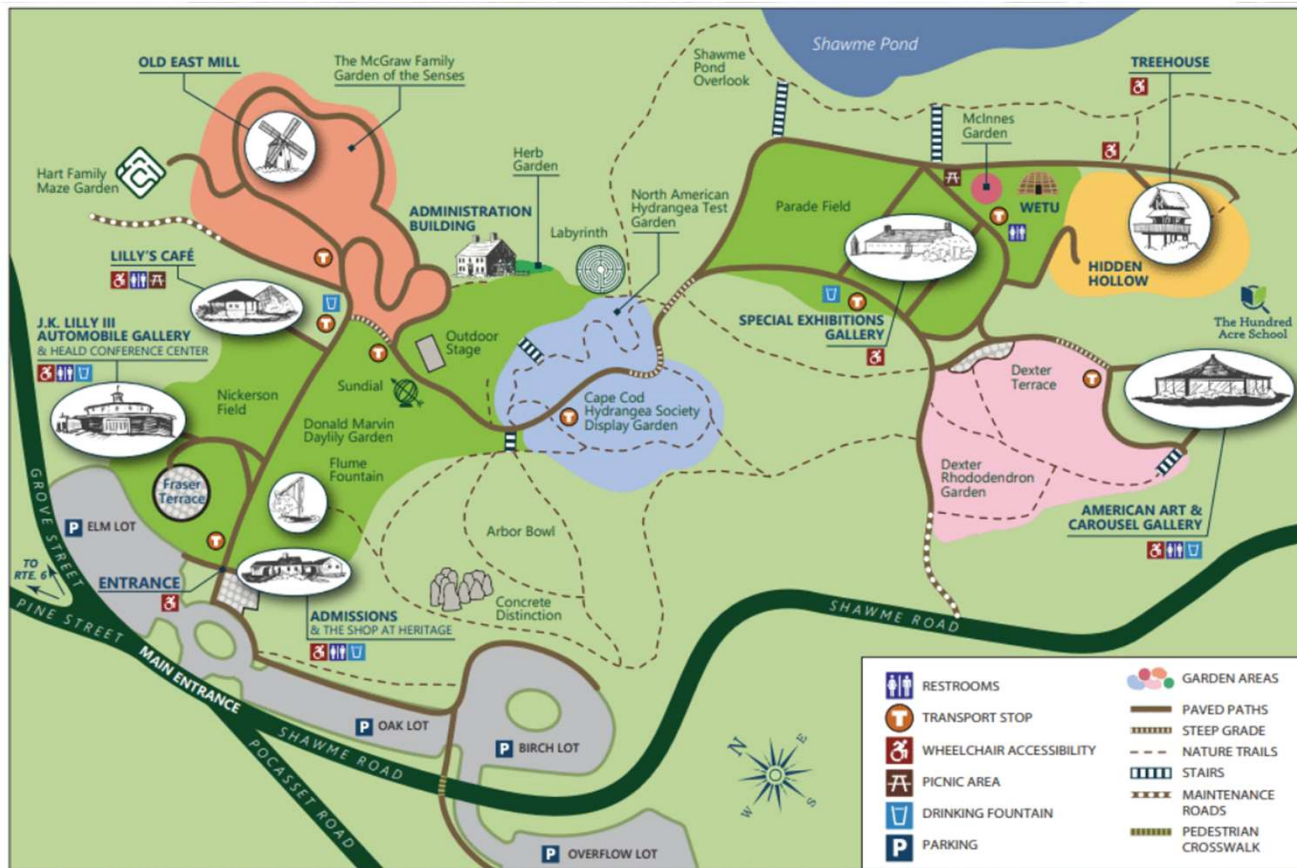
**Anne Scott-Putney**  
*President and CEO*  
Heritage Museums & Gardens



**Judith Holt**  
*Board Member*  
Heritage Museums & Gardens



**Kate Scurlock, AIA**  
*Senior Associate*  
GWWO Architects



- Largest cultural attraction on Cape Cod
- Three museums
- 130,000 visitors/year
- 100 acres of woodlands and living collections
- 17 total buildings





*How do we use our  
100-acre platform of  
woodlands, gardens and  
17 buildings  
to model and interpret  
environmental sustainability?*



## Strategic Sustainability Plan 2019 to 2024



- Be a model of sustainability,
- Stop the use of fossil fuels to reduce carbon dioxide emissions, and
- Provide public engagement in these issues through exhibits and education.



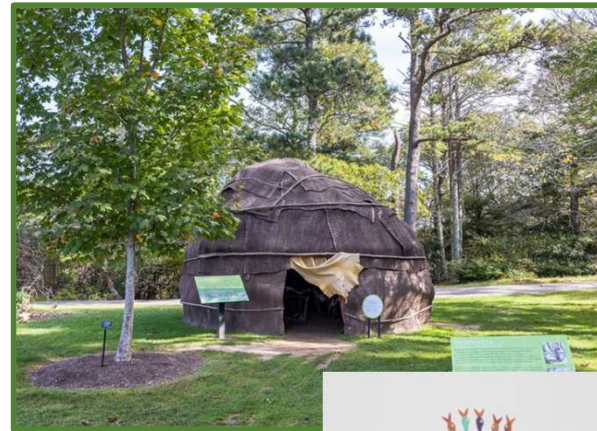
# Expressed in Events and Exhibits



One third of  
the Exhibit  
on  
Preserving  
Cape Cod



Wampanoag  
Wetu  
and Garden



Charging  
Ahead



Mercury Arc Rectifier

Alfred Glover  
in the Garden

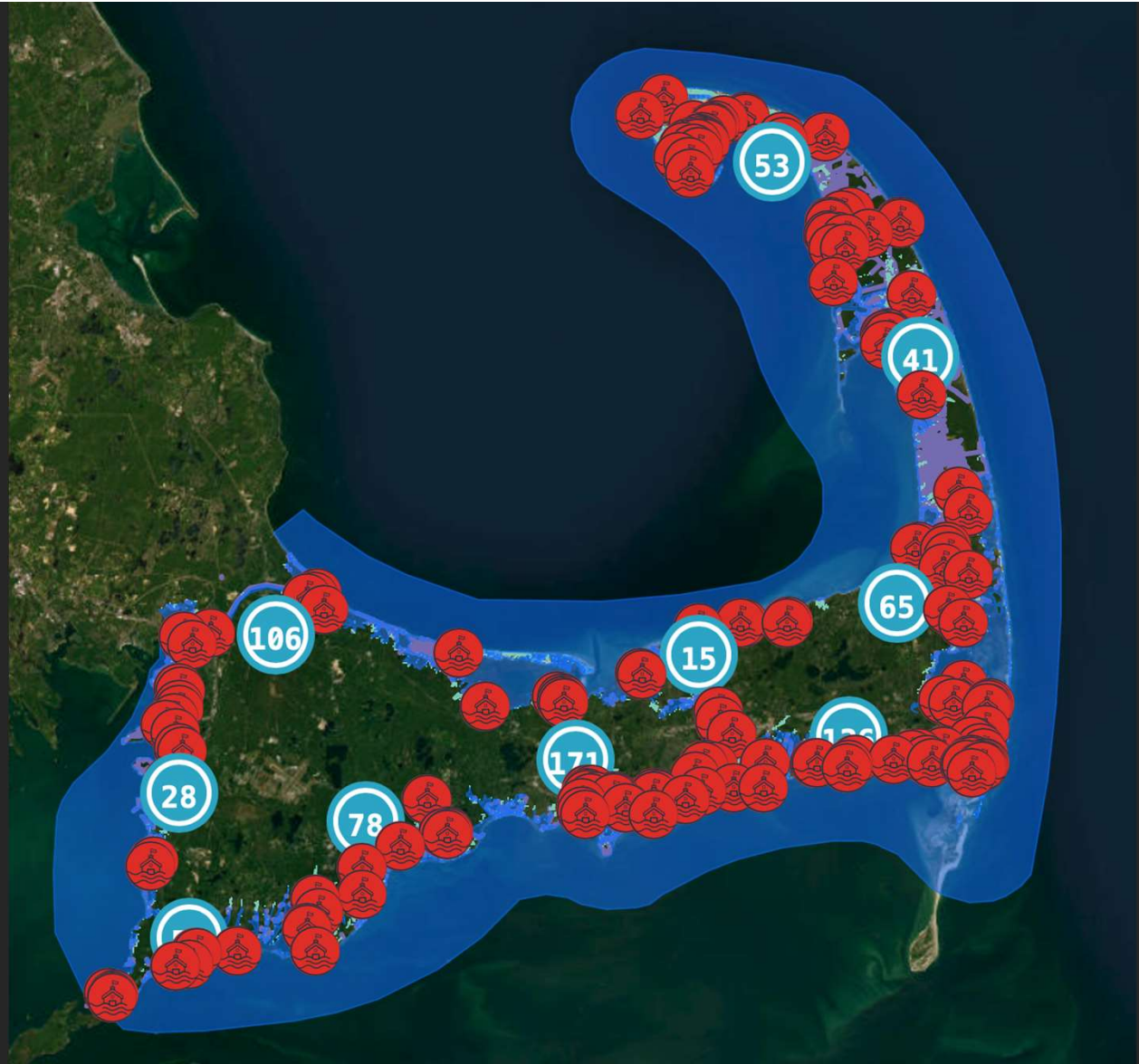




Cape Cod Commission

Cape Cod  
**7+ billion**  
pounds CO2  
Per year

Sea Level Rise Viewer  
6 foot rise







# Sustainability Beacon Project

## Measured

- 10-year energy use
- CO2 emissions
- CO2 sequestration

## Set Goals

- Reductions
- 50% by 2030
- 80% by 2050

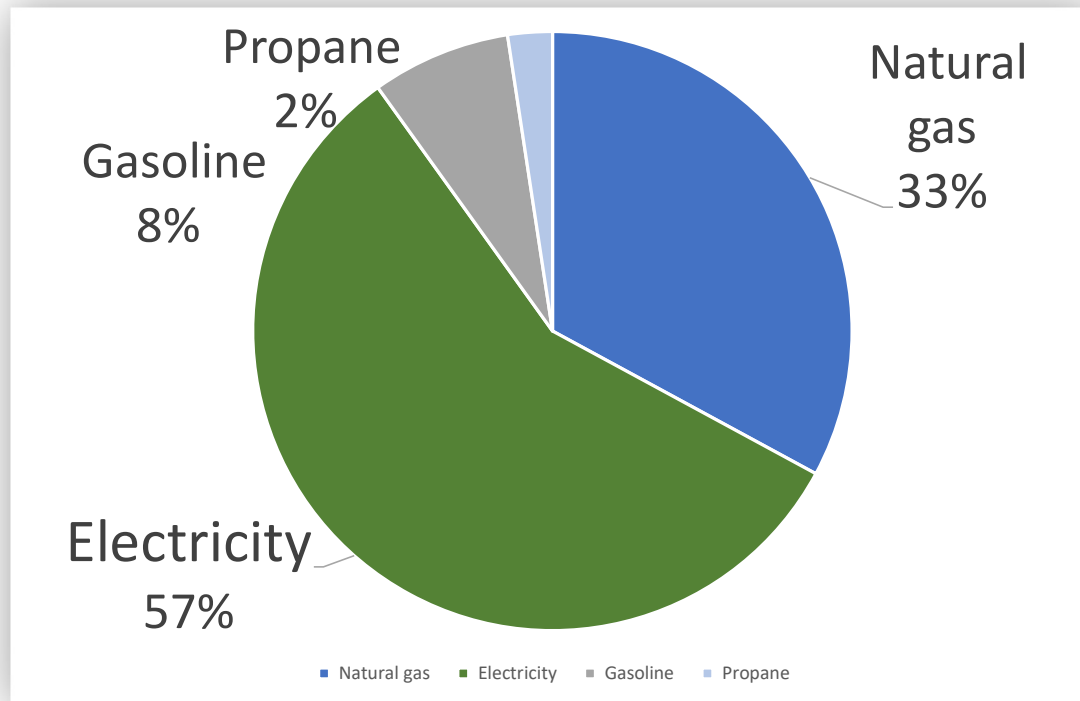
## Action Plan

- Conservation
- Electrify
- Deploy solar

*A model for projects on Cape Cod,  
in Massachusetts and throughout the US.*



# Benchmark - Measure Energy



Account Number: 1391 734 0012  
Customer name key: NAUS  
Statement Date:  
Service Pre:

## EVERSOURCE

Payment will be sent to bank for processing on 12/24/21

**Electric Account Summary**  
Amount Due On 11/29/21  
Last Payment Received On 11/22/21  
Balance Forward  
Current Charges/Credits  
Electric Supply Services  
Delivery Services  
Other Charges or Credits  
Total Current Charges  
Total Amount Due

Svc Addr: 220 SAMOSET RD CHAPEL EASTHAM MA 02642  
Rate 33-GENERAL - ANNUAL Cycle 03  
Service from 11/02/21 - 12/03/21 31 Days  
Next read date on or about: Jan 04, 2022

Meter Number	Current Read	Previous Read	Current Usage	Reading Type
2821744	14154	13794	360	Actual

**Monthly kWh Use**

	Dec	Jan	Feb	Mar	Apr	May	Jun
239	401	391	395	370	285	279	
297	244	202	208	268	360		

**Monthly kWh Use**

	Jul	Aug	Sep	Oct	Nov	Dec
297	244	202	208	268	360	

**Contact Information**  
Emergency: 800-592-2000  
www.eversource.com  
BusinessCenterMA@eversource.com  
Pay by Phone: 888-783-6618  
Customer Service: 800-340-9822

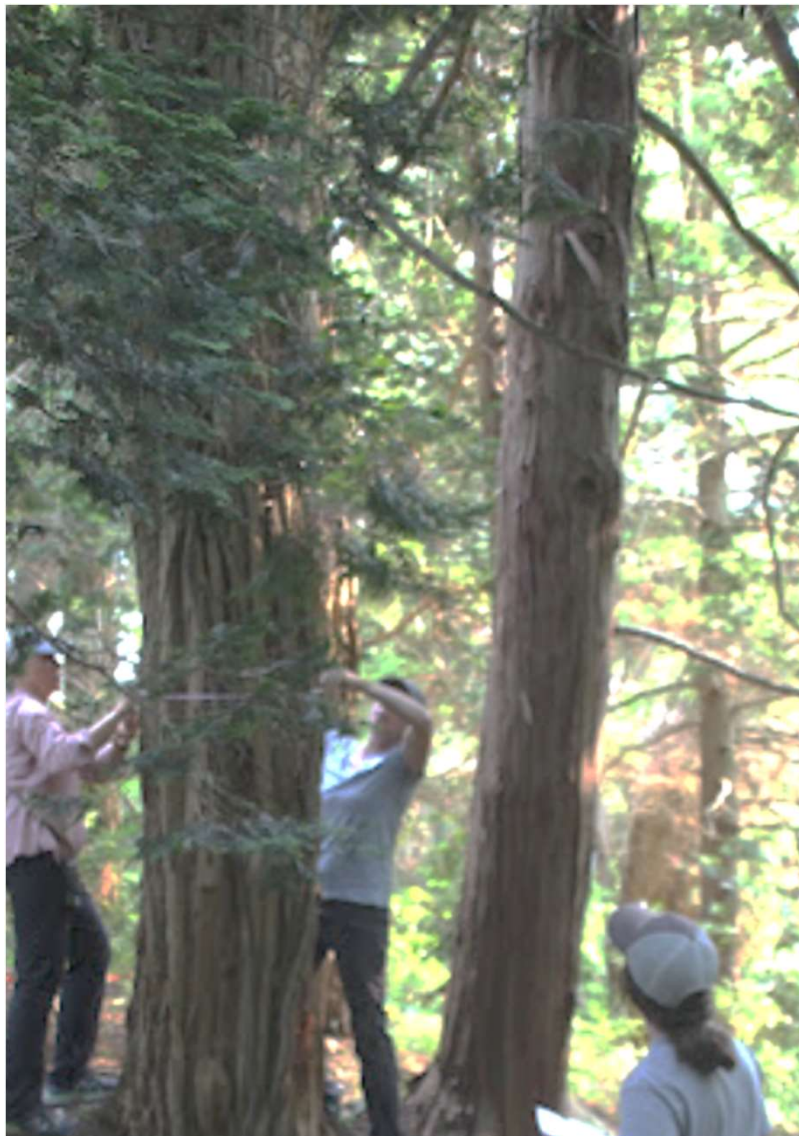
**Important Messages About Your Account**  
DIGGING? STATE LAW REQUIRES YOU OR YOUR CONTRACTOR TO CALL DIG SAFE AT 811 AT LEAST THREE BUSINESS DAYS PRIOR TO DIGGING. FOR MORE INFORMATION VISIT DIGSAFE.COM. IMPORTANT SAFETY INFORMATION IS ALSO AVAILABLE IN THE "SAFETY" SECTION OF EVERSOURCE.COM.

**Total Charges for Electricity**

**Supplier (NEXTERA ENERGY SERVICES)**  
Meter 2821744  
Generation Service Charge 360  
Subtotal Supplier Services

**Delivery**  
(Rate 33-GENERAL - ANNUAL)  
Meter 2821744  
Customer Charge  
Distribution Charge 1st 2300  
Transition Charge  
Transmission Charge  
Revenue Decoupling Charge  
Distributed Solar Charge  
Renewable Energy Charge  
Energy Efficiency





## Carbon Dioxide Sequestration

### 25 Volunteers

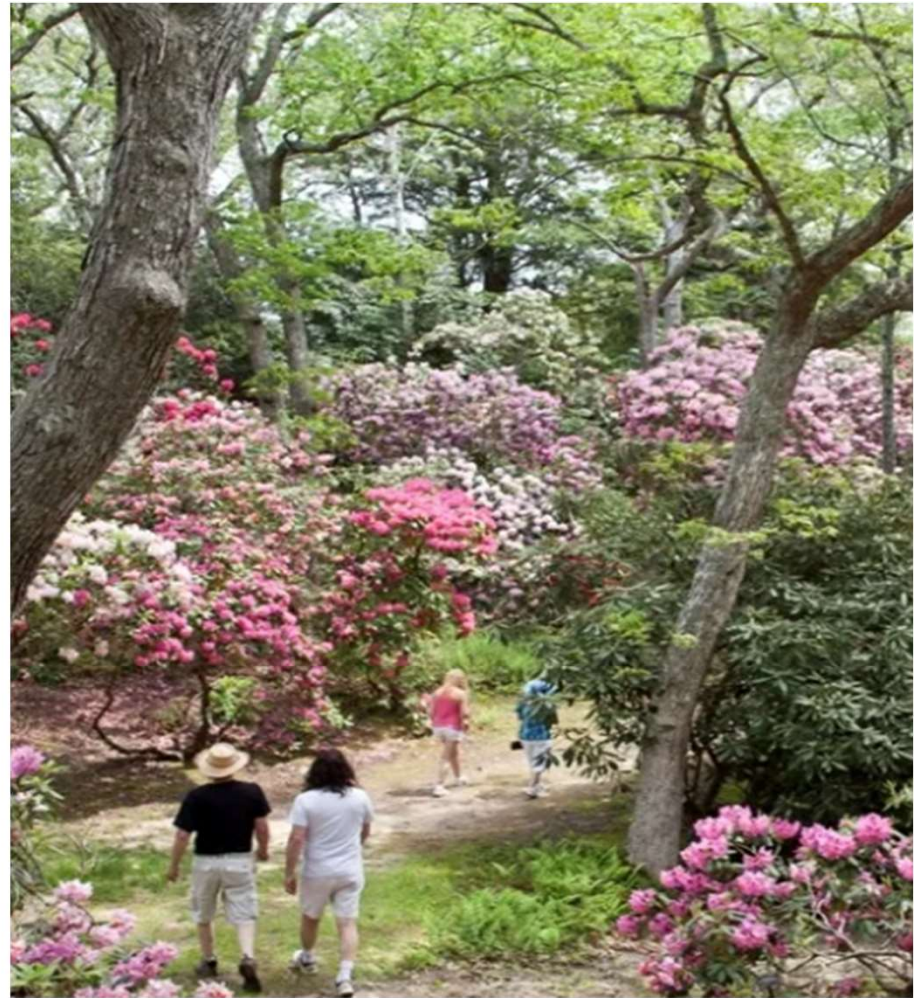
- 5 Sample plots
- 316 trees/ stems
- 4,750 calculation

### Affiliates

- Cape Cod Commission
- Woodwell Research Center

## Cape Cod Commission Study

Land Use	ACRES
Forests (Trees & Shrubs)	75.94
Grasslands	5.68
Built (Impervious)	4.47
Non-forested wetland	0.08
Man-made bare	7.32
Natural barren	1.54







## Building Management - Unique Challenges



Conference Center and Round Barn





# Grounds Management

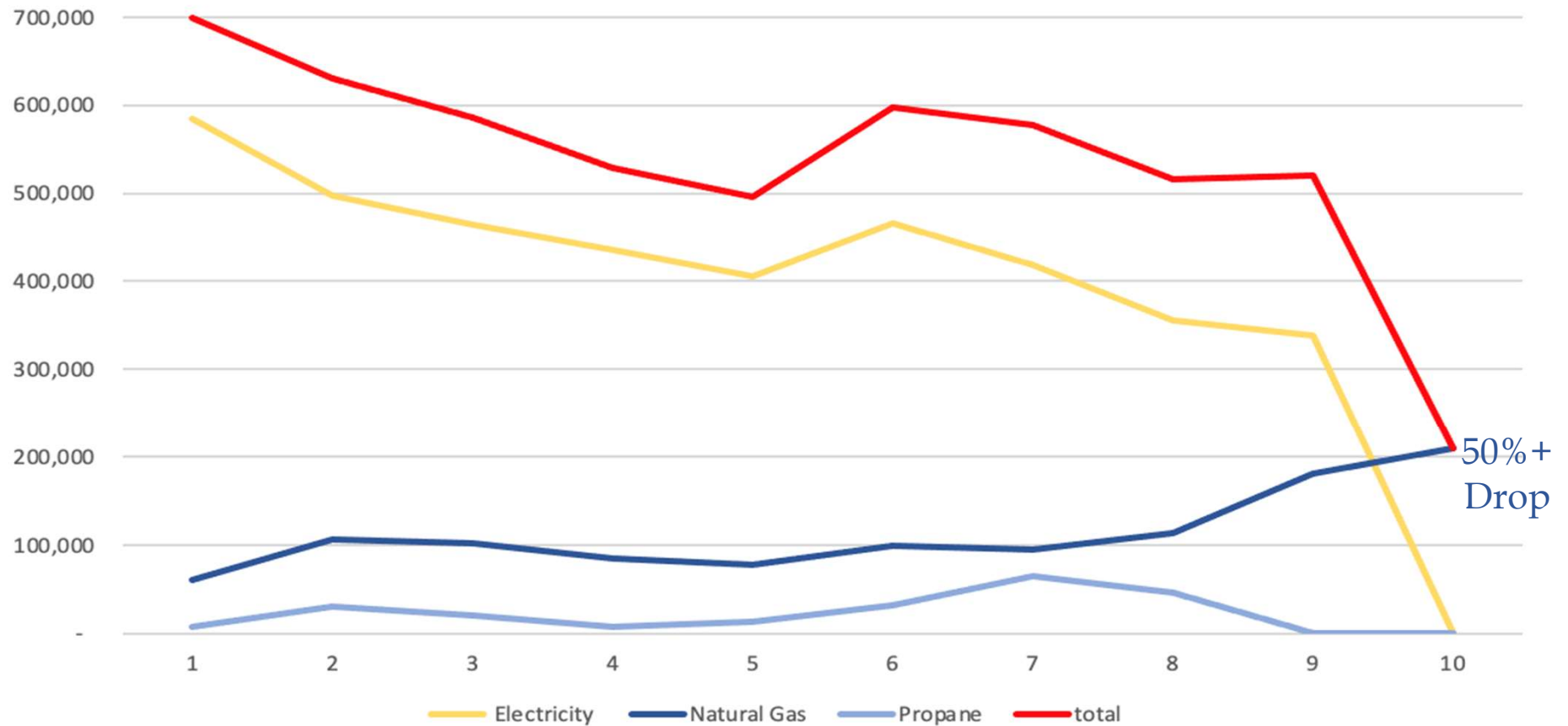
- Electrify everything
- Waste management
- Water management
- Deploy grid solar







# Carbon Dioxide Emission Reduction 2013 to 2022






## New Welcome Center Complex

- Model and interpret sustainability
- Improve welcome sequence and accessibility
- Implement intuitive wayfinding
- Create welcoming gathering spaces
- Expand visitor services
- Enhance natural vistas




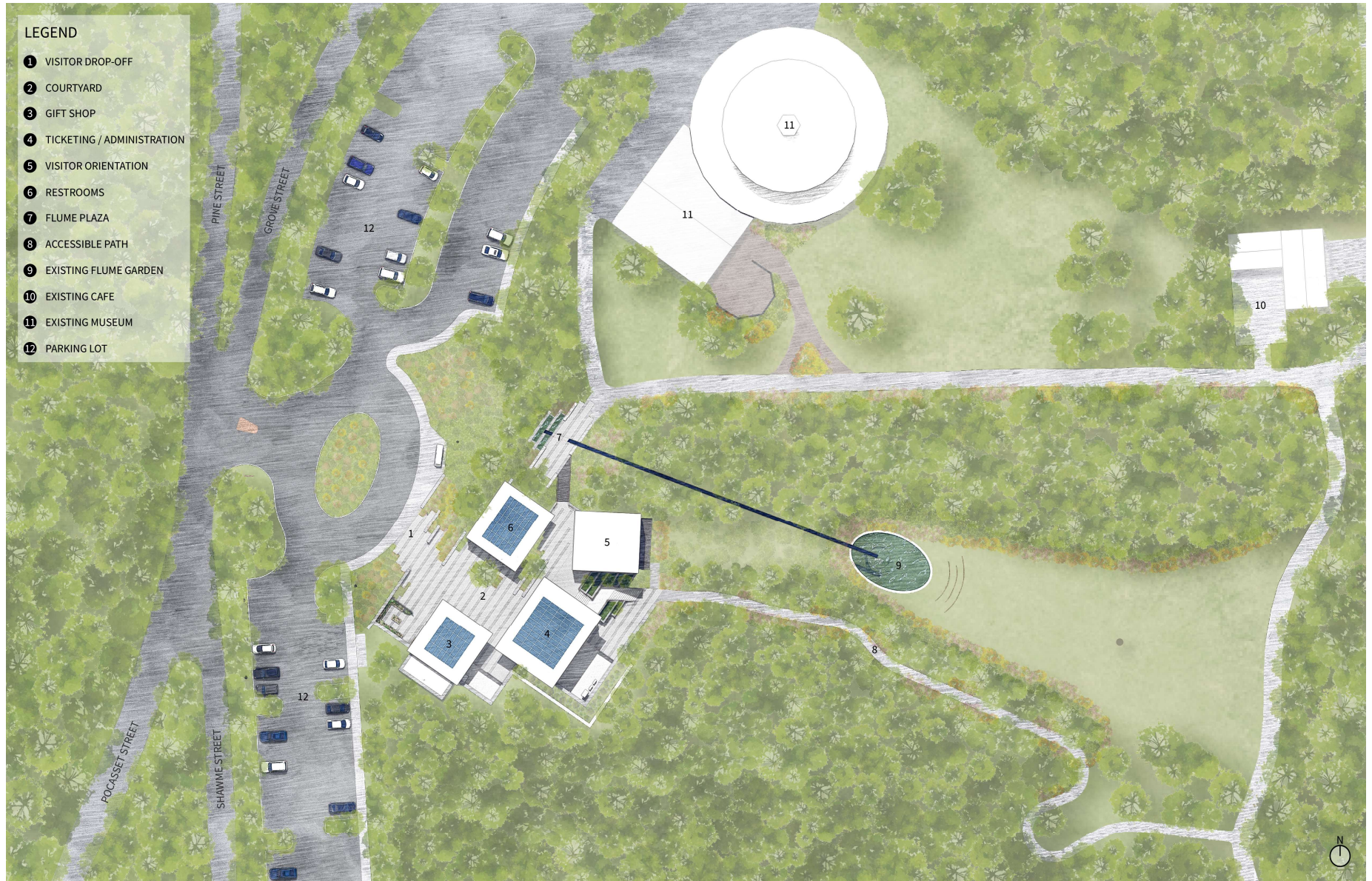




# LEGEND

- 1 VISITOR DROP-OFF
- 2 COURTYARD
- 3 GIFT SHOP
- 4 TICKETING / ADMINISTRATION
- 5 VISITOR ORIENTATION
- 6 RESTROOMS
- 7 FLUME PLAZA
- 8 ACCESSIBLE PATH
- 9 EXISTING FLUME GARDEN
- 10 EXISTING CAFE
- 11 EXISTING MUSEUM
- 12 PARKING LOT

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Questions?





