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MASSACHUSETTS

Canal Energy Storage & Pipeline Expansion

Support clean and affordable energy

October 20, 2026

Outline

Tonight's Plan

Canal Energy Storage, JERA Americas
- Basics & Benefits
- Safety Considerations
- Upcoming Community Engagement & Advocacy Opportunities

Cape Cod Canal Pipeline ~~Relocation~~ Expansion, Algonquin Gas Transmission
- Basics & Concerns
- Cape Cod Commission Review
- Current Advocacy Opportunities: Public Comment

Proposed Canal Energy Storage Facility

Utility-scale battery energy storage system (BESS) at Canal plant site, proposed for operation by 2030

- BESS containers with total capacity of 320 MW for 4 hours (1280 MWh)
- Uses safer lithium iron phosphate (LFP) battery chemistry
- Leverages Unit 2's grid interconnection, reducing cost and time to build
- Timeline contingent on bid award through MA Clean Peak storage procurement

Canal Generating Overview

JERA AMERICAS

- JERA Americas acquired Canal Generating in December 2022
- Units 1 and 2 (1125 MW) are oil-fueled steam units from 1968 and 1976 and provided intermediate generation until late 2000s when gas displaced oil units
- Unit 3 (333 MW) is a quick starting, flexible dual-fueled unit online since 2019
- Canal Generating provides key reliable grid support during critical periods (e.g., Winter Storm Elliot in 2022, East Coast heat wave in June 2025, Q1 2026)

Location	Sandwich, MA
Capacity	1458 MW
Fuel	#6 Low Sulfur Fuel Oil / Natural Gas / Ultra-Low Sulfur Diesel
Interconnection	SEMA (345kV)
Workforce	~ 50 employees 22 represented by UWUA Local 369
Property tax and local payments	>$3 million in 2025
Community contributions	$218,000+ since 2022



JERA Americas also owns 50% of Milford Power (202 MW) and Dighton Power (173 MW) and is the asset manager for both plants.



Canal 1 & 2 provide emergency generation, creating potential for "surplus interconnection service."

What are peaker plants? & Canal Generating

Peaker plants are power plants that run less than 15% of year. They are often the oldest, most polluting, and most expensive power plants.

They come online only when energy demand reaches its peak, like during a cold snap or a heat wave.



According to EPA data, in 2022, Canal Generating ran for ~350 hours, or 4% of the year. It produced 410,716 tons of CO2e, 184 tons of NOx, 540 tons of SO2, and 16.83 tons of PM2.5

“Inside-the-Fence” Site

Proposed Siting Area

jera AMERICAS



Proposed site aligns with new MA “suitability standards” – except for climate resilience.

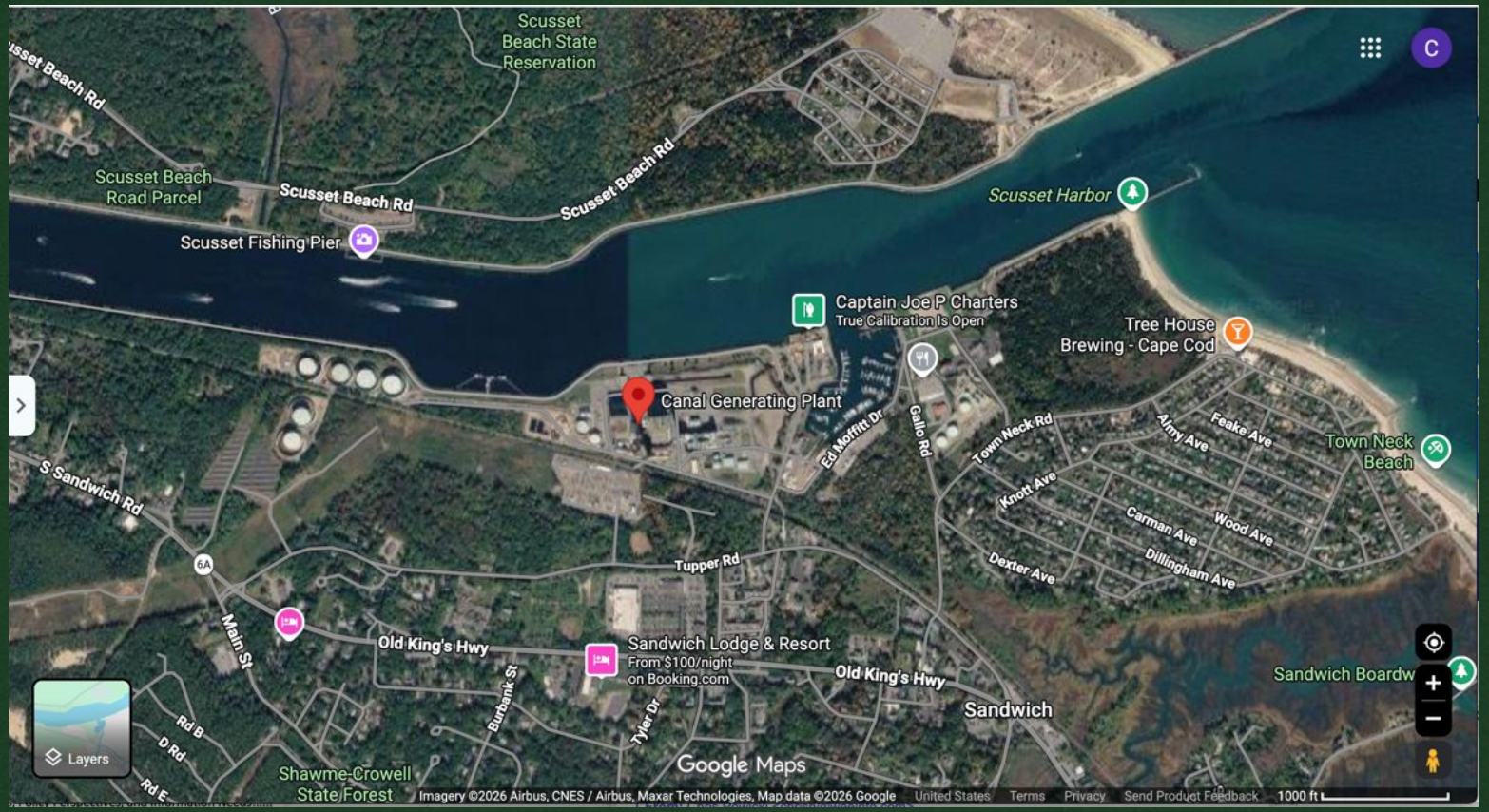
Schematic of Proposed Battery Storage Facility



All renderings are approximate and provided for discussion purposes only; they should not be interpreted as a binding project representation.

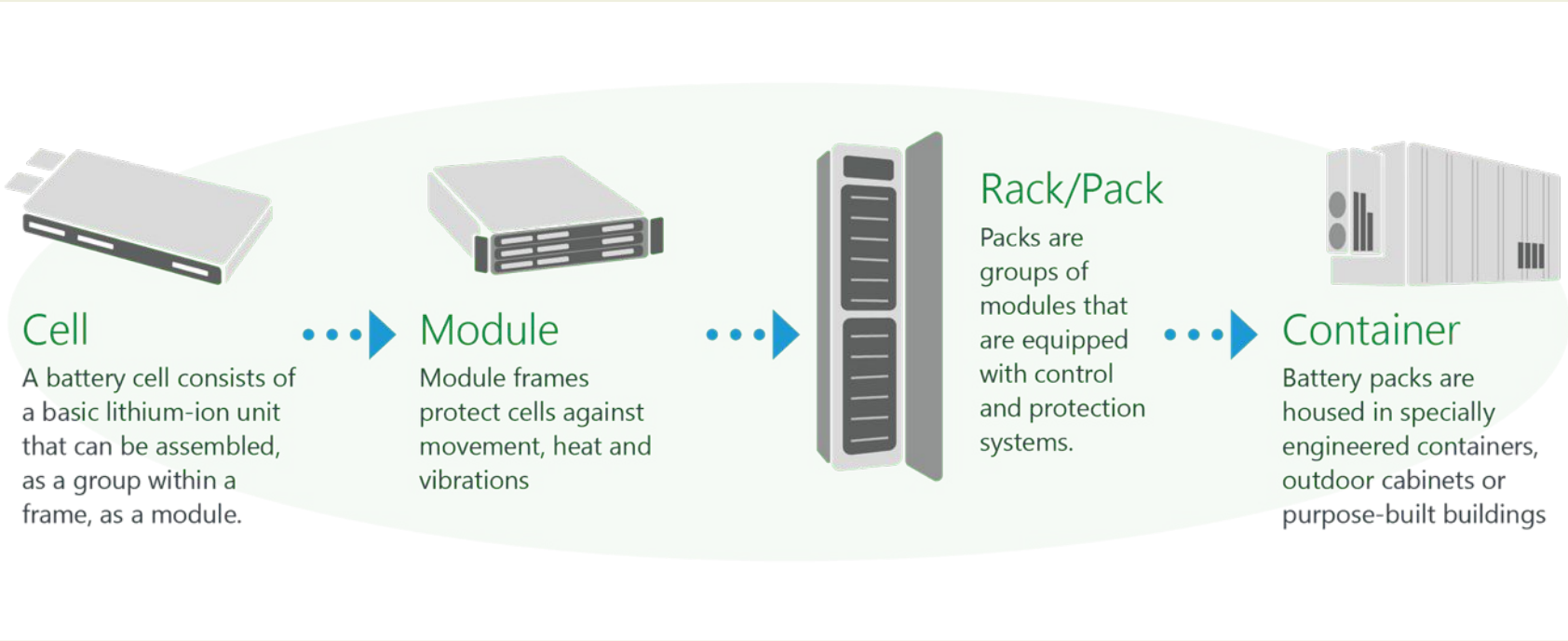
Batteries to be deployed on platforms to mitigate storm surge and sea level rise threats.

Canal Energy Storage Site Surroundings



Key environmental and social issues include safety, noise, aesthetics, and benefits.

BESS 101: What's in a BESS container?



Integrated, modular system contains cells, modules, racks, and controls – all with inherent safety features – and offers several additional layers of protection.

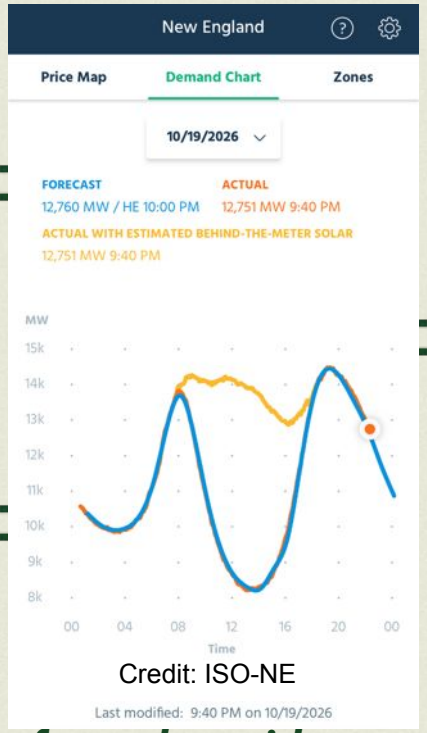
BESS 101: How would Canal storage work?



Credit: Cotuit Solar



Credit: GE



Credit: ISO-NE

Charge

Discharge



Credit: JERA Americas

BESS charged by drawing power from the grid—not onsite fossil generators—when costs and net load are low and renewables are available. Clean energy discharged during higher-cost peak periods, displacing fossil power.

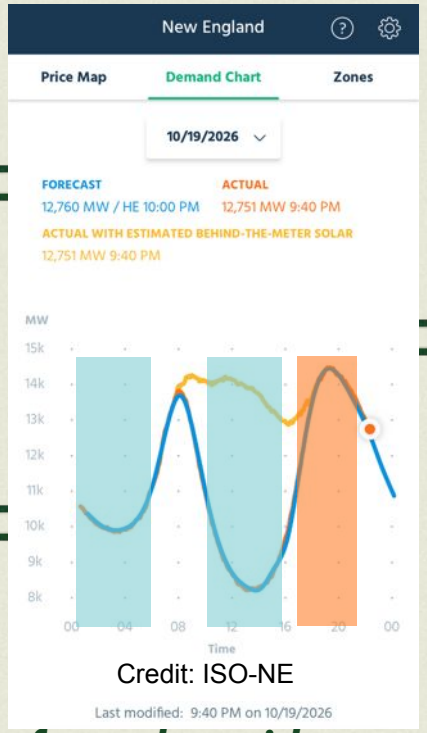
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BESS Benefits - Regional

- Saves money
- Reduces air pollution
- Reduces greenhouse gas emissions
- Increases reliability and flexibility



BESS can balance variable wind and solar generation and respond to grid disturbances and outages. Decreased reliance on high-cost fossil peakers reduces energy bills, lowers harmful emissions, and boosts resilience to price spikes and fuel shortages.

BESS Community Benefits - Experiences in MA

Everett, MA

- Trimount Energy Storage, Jupiter Power
- 700MW/2,800MWh BESS installation
- old Exxon Mobile oil terminal site
- Near an existing substation/interconnection point



Jupiter power ended up sitting down with community groups and labor directly to negotiate a community benefits agreement. It includes:

- Increasing capacity at local non-profits to establish a community land trust
- Easement for expanded pedestrian and cycling infrastructure
- Contributions to coastal flood resilience in Everett
- Pre-appreticeship programs with the high school
- Total support of $5,150,000

BESS fire safety

A few high-profile fire incidents have spurred concerns about the safety of grid-scale BESS. Let’s talk about it!

Moss Landing, CA

January 2025 BESS fire near Monterey burned for multiple days, resulting in temporary evacuations and shelter-in-place orders.

Airborne pollutants contaminated downwind environments. Flare ups have continued during site cleanup.

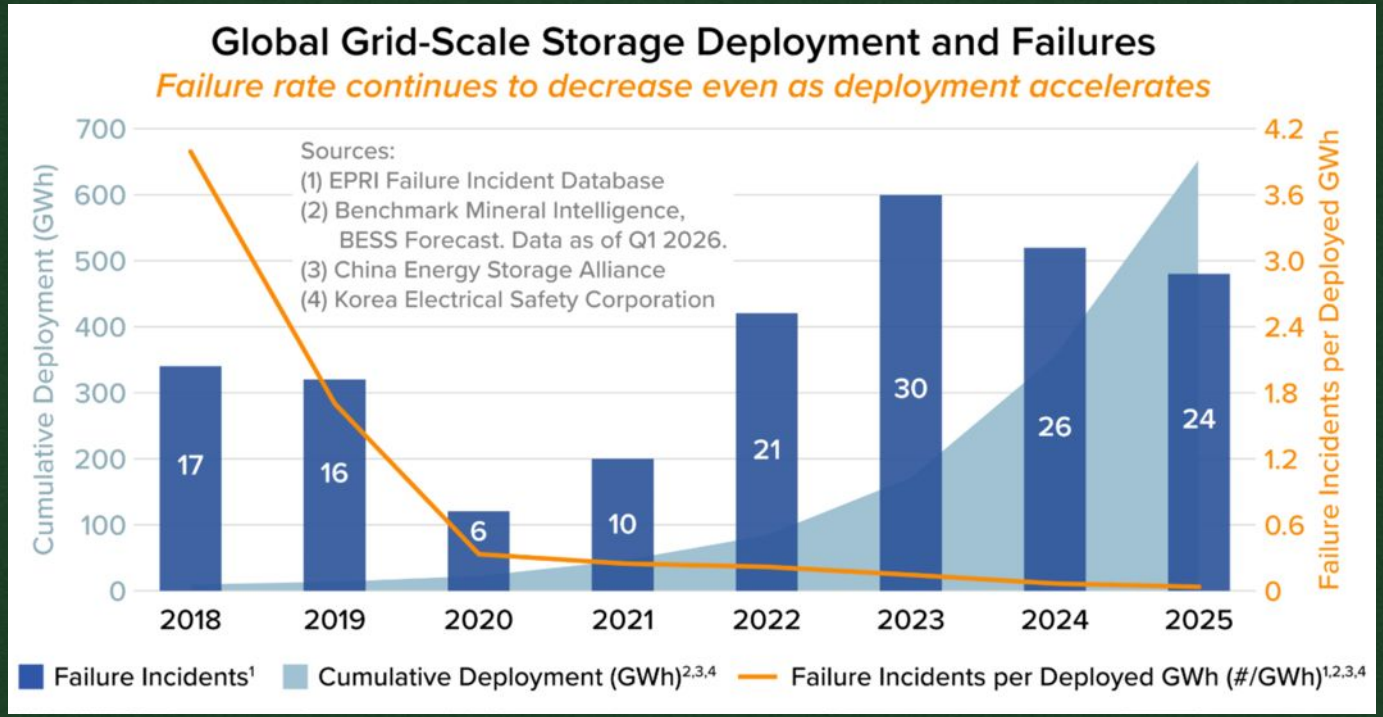
Moss Landing BESS technology and design differ from current practice, creating increased fire risk.

Moss Landing Distinctions

- Used older nickel manganese cobalt (NMC) battery chemistry with higher fire risk, relative to current LFP technology.
- Batteries deployed inside old power generation building, tightly clustered on open racks. Today's technology is containerized, outdoors or in purpose-built structures, with design focused on ensuring safety and preventing spread.
- System installed in 2019, prior to release of NFPA 855 standard ensuring fire safety through mandated certifications and best practices.

BESS 101: Declining Failure Rate, Improving Safety Record

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EPRI (2026). *Battery Energy Storage System Failure Incident Database*

From 2018-25, as global grid-scale storage deployment increased exponentially, failure rates decreased by 98-99%.

Canal Energy Storage Siting & Permitting

State Permitting Reform

At >100 MW, Canal Energy Storage requires **consolidated permit through Energy Facility Siting Board (EFSB)**

- Pre-Filing Engagement (town fire safety officials, administration, planning; community and stakeholder groups)
- Site Suitability Assessment
- Prescriptive BESS Requirements
  - UL Safety & Testing Standards (UL 1973, 9540, 9540a)
  - National Fire Protection Association (NFPA) Standard 855
  - Emergency Response Plan
  - Hazardous Materials Containment
- Environmental Impact Assessment
- Decommissioning Assurance

JERA Americas outreach emphasizes safety, site suitability, and local benefits

Best Practices

- Community benefit agreement (CBA)
- Hazard mitigation analysis
- Failure modes and effects analysis
- Air plume dispersion modeling



Credit: EPRI

Canal Energy Site Surroundings: 3000-Foot Radius



Key environmental and social issues include safety, noise, aesthetics, and benefits.

Localizing Benefits from Canal Energy Storage

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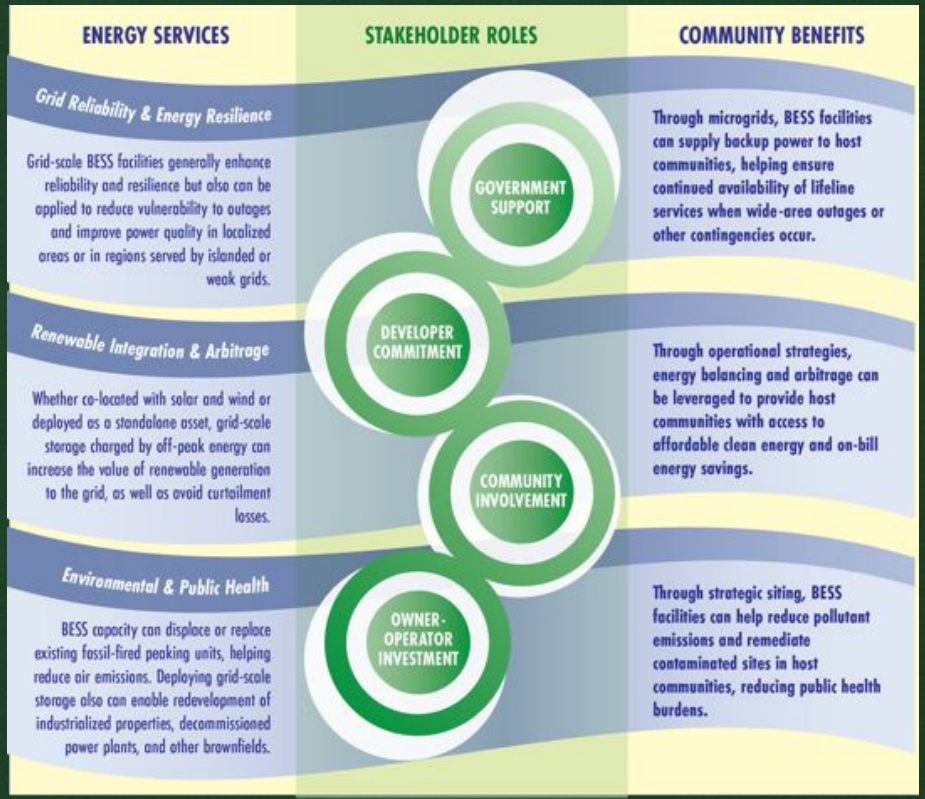
Typical Community Benefits

- Tax revenues
- ✔ Payment in lieu of tax (PILOT) agreement
- ✔ Construction jobs, upskilling, and workforce training
- ✔ Community investment

Energy-Related Benefits

- Reliability and resilience via microgrid operation
- Access to affordable clean energy via renewable integration and arbitrage
- ✔ Emission reduction via strategic siting and targeted operation

BESS-Specific Benefits



EPRI (2025). *Community-Based Siting and Permitting for Grid-Scale Lithium Ion Battery Energy Storage (3002031624)*

Canal Energy Storage – Next Steps & Advocacy Opportunities

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Progress to Date

- Early outreach and ongoing discussion with Sandwich fire safety officials and town administration
- Presentation of project to Select Board (August) and through community forum (September)
- Consistent with MA Clean Peak Standard, bid submitted for Section 83E Round II Energy Storage Procurement (September) targeting commercial operation in 2030

Next Steps

- Ongoing discussion with town officials and stakeholders
- 83E awards to be announced January 2027; projects must begin commercial operation by 12/31/32
- Assuming successful bid, additional community forum planned prior to EFSB submittal

Opportunities

- Are you a stakeholder? Like Sierra Club, reach out to JERA Americas …
- Conduct research, follow developments, and plan to attend early 2027 community forum
- Plan to participate in EFSB review



BESS is crucial for reducing our reliance on fossil fuels



Thank you!

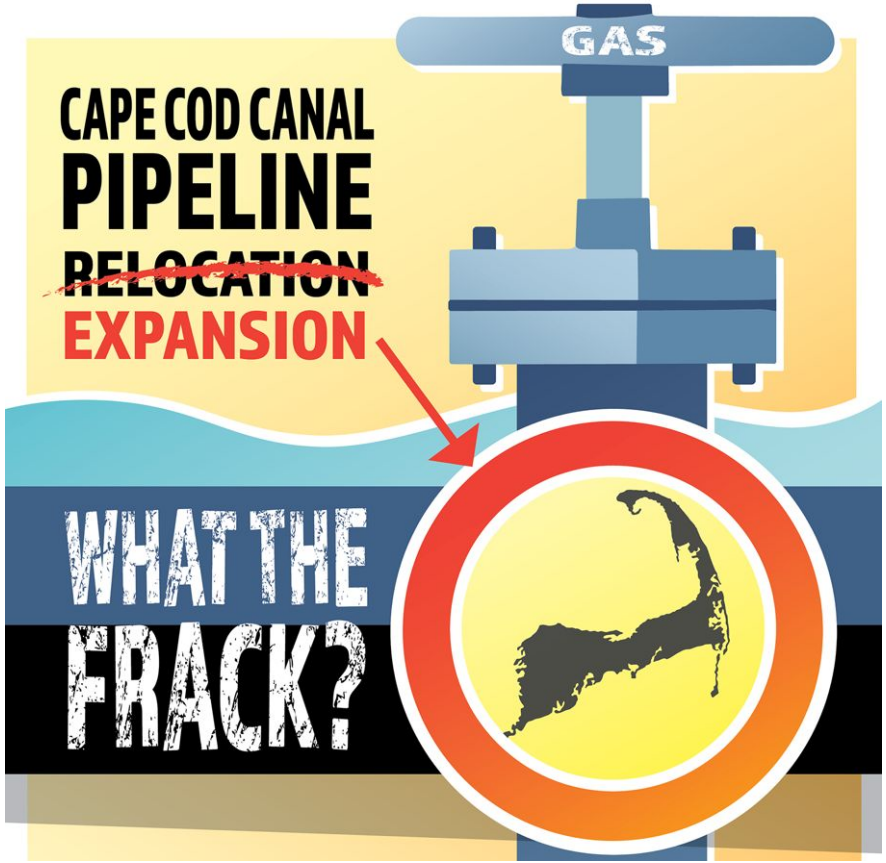
For further questions, please reach out to:

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Canal Energy Storage Resources - www.canalenergystoragema.com

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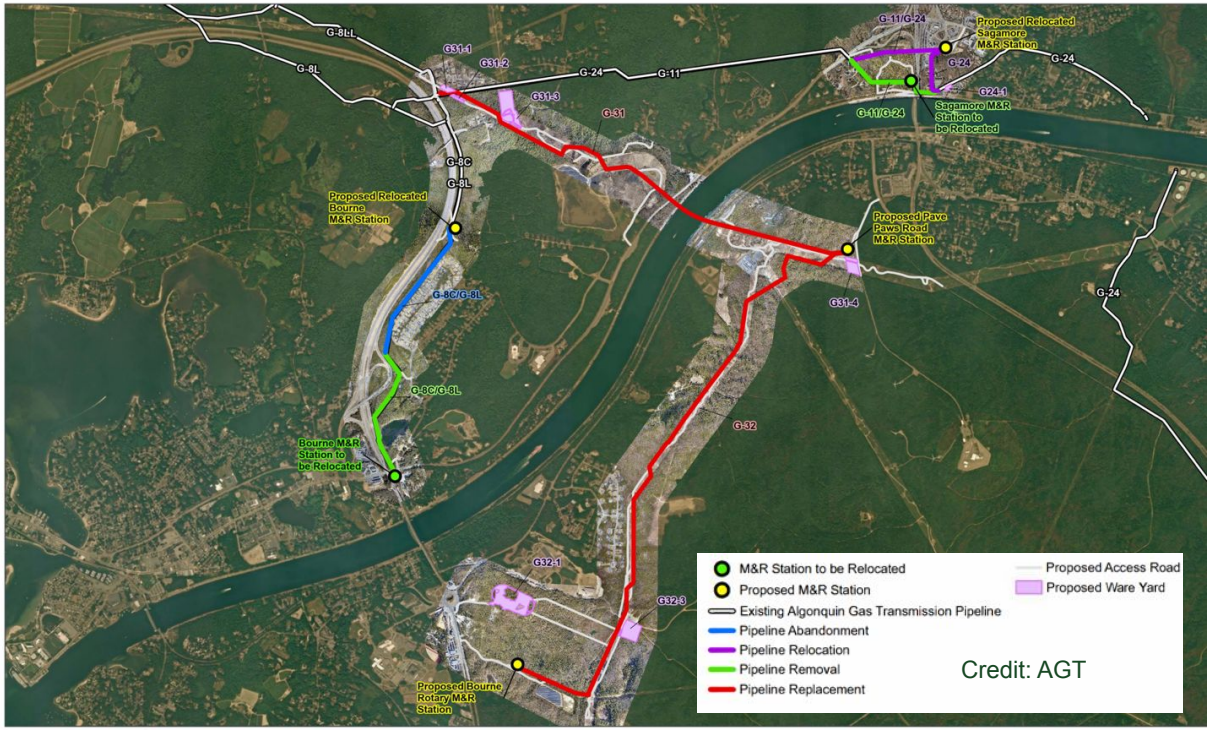


Outline

- Basics & Concerns
- Cape Cod Commission ”Development of Regional Impact” (DRI) Review
- Public Comment Opportunities + October 28th Hearing

Why Relocate Cape Cod Canal Pipelines? When?

- Replacement of two bridge-attached 10-inch-diameter distribution pipelines is required for Cape Cod Bridges Program
- Algonquin Gas Transmission (AGT) pipelines serve National Grid distribution lines supplying homes and buildings
- New under-the-canal 18-inch-diameter transmission pipeline planned, with 4 metering and regulation (M&R) stations
- AGT to receive $302 million in taxpayer funds; construction to begin January 2027



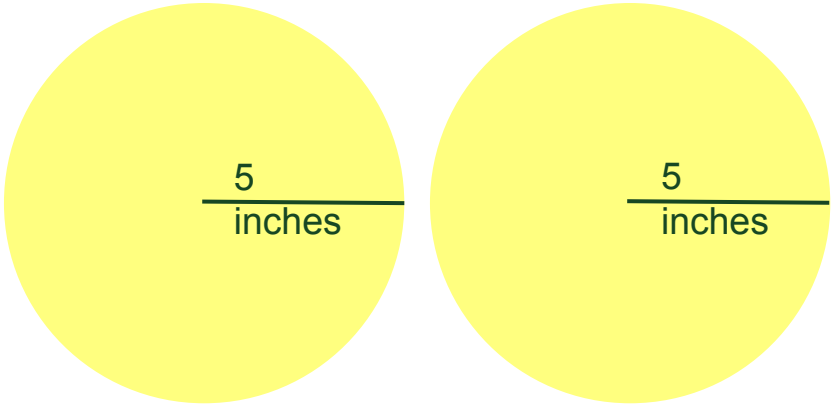
Cape Cod Canal Pipeline Infrastructure Replacement Plan

AGT claim: "no expansion of natural gas service to Cape Cod"

No Expansion? 62% Larger Cross-Sectional Area!

Existing Bridge-Attached Infrastructure

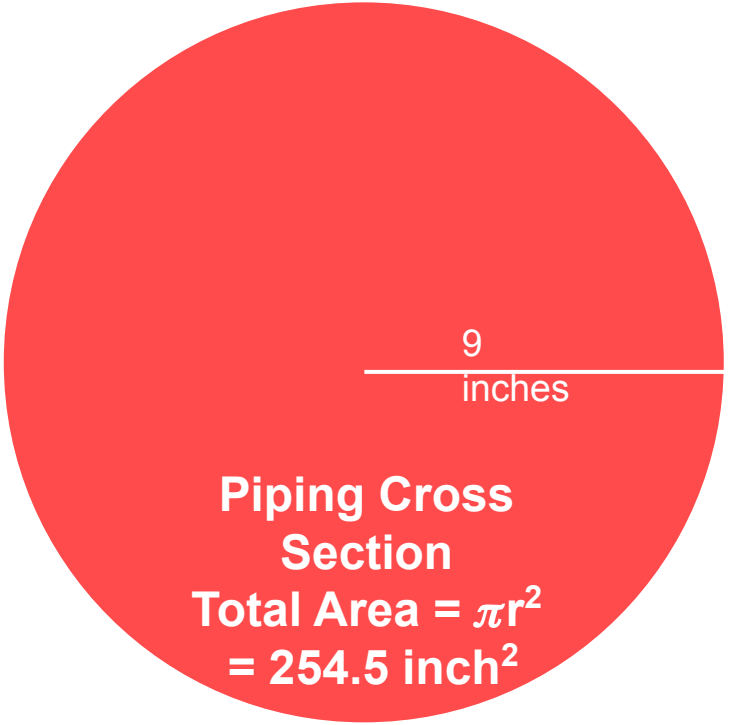
Two 10-inch-diameter pipelines



Piping Cross Section
Total Area = $2(\pi r^2)$
= 157.1 inch^2

Proposed Under-Canal Infrastructure

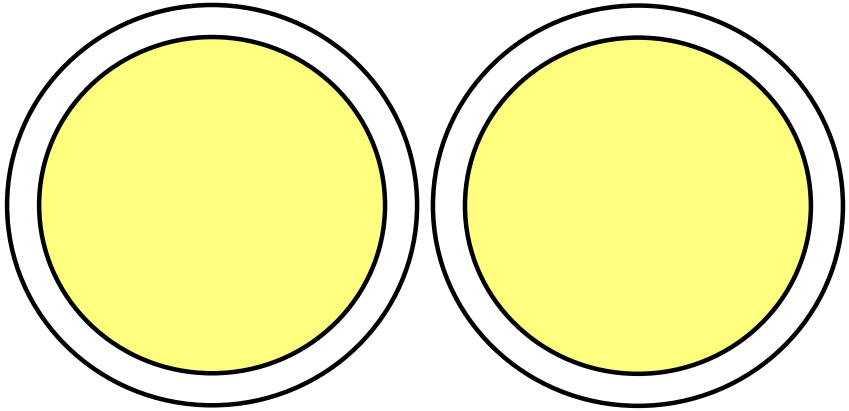
One 18-inch-diameter pipeline



No Expansion? More Than Double the Delivery & Storage Capacity!

Existing Bridge-Attached Infrastructure

Two 10-inch-diameter pipelines

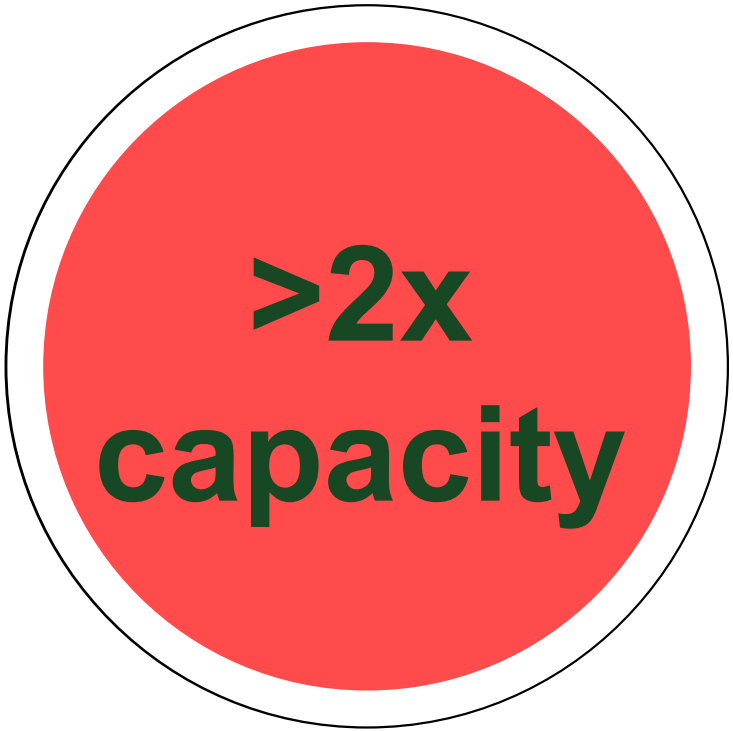


Wall Friction & Pressure Drop Losses Decrease Exponentially With Diameter

18-inch pipe 18-20x more efficient than 10-inch pipe and likely to operate at higher

Proposed Under-Canal Infrastructure

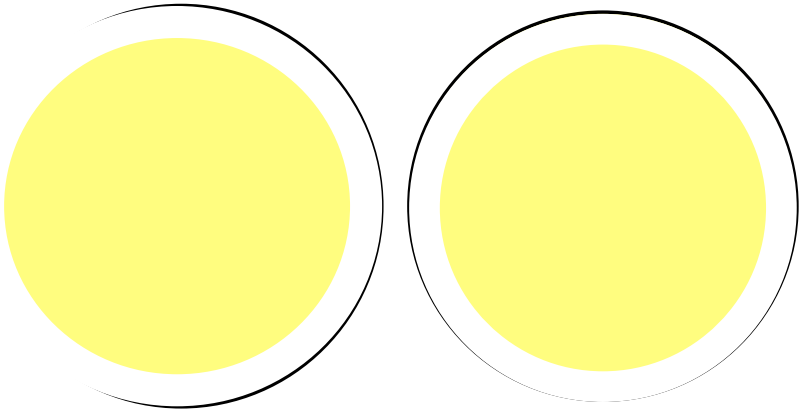
One 18-inch-diameter pipeline



No Expansion? Why Not Use 14-Inch Pipe?

Existing Bridge-Attached Infrastructure

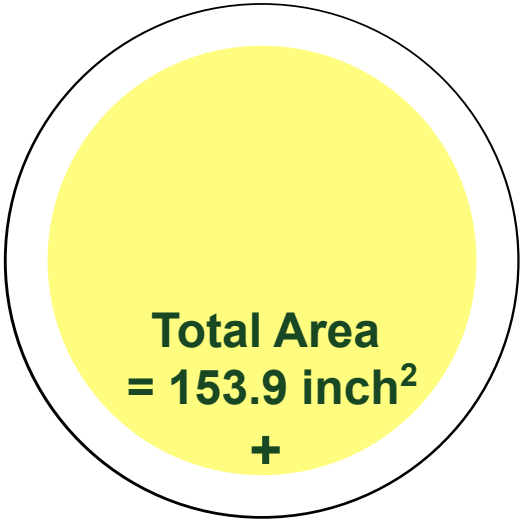
Two 10-inch-diameter pipelines



Total Area = 157.1 inch^2

Right-Sized Under-Canal Infrastructure

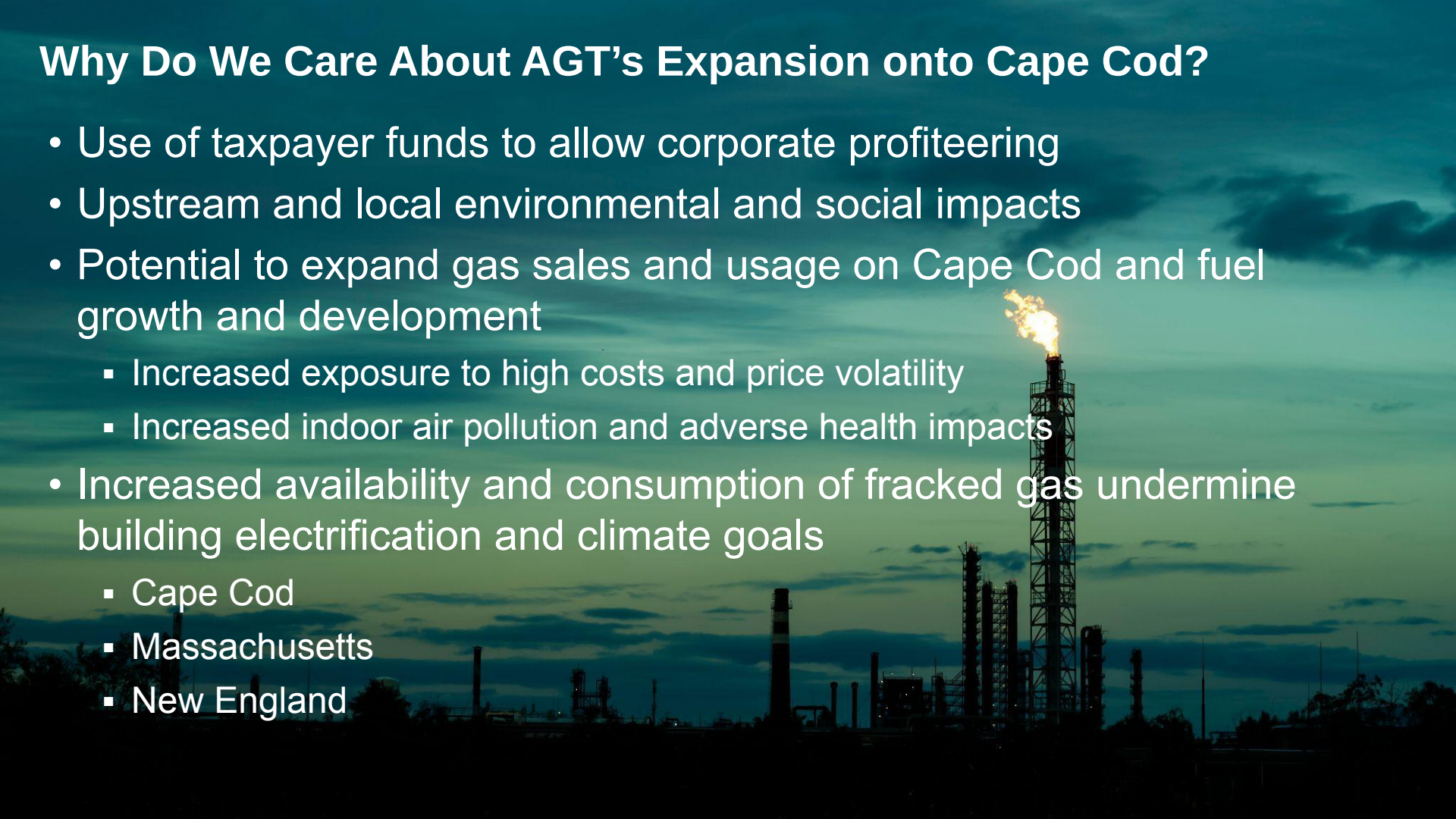
One 14-inch-diameter pipeline



Higher Efficiency & Pressure

Why Do We Care About AGT's Expansion onto Cape Cod?

- Use of taxpayer funds to allow corporate profiteering
- Upstream and local environmental and social impacts
- Potential to expand gas sales and usage on Cape Cod and fuel growth and development
  - Increased exposure to high costs and price volatility
  - Increased indoor air pollution and adverse health impacts
- Increased availability and consumption of fracked gas undermine building electrification and climate goals
  - Cape Cod
  - Massachusetts
  - New England



Cape Cod Commission & Developments of Regional Impact

- **Cape Cod Commission (CCC) Act of 1989**
  - CCC required to protect “unique natural, coastal, historical, cultural, and other values that are threatened by uncoordinated or inappropriate uses of the region’s land and other resources”
  - CCC required ”to review and regulate developments of regional impact (DRI)”

- **Cape Cod Regional Policy Plan (RPP)** provides goals and objectives for DRI review and regulation
  - DRI process: begins after state and federal environmental impact assessment processes
  - DRI standard: consistency with RPP goals and objectives when accounting for mitigation



What Does CCC's *Cape Cod Climate Action Plan* Say?



"Climate change is an unprecedented challenge that is transforming Cape Cod … impacting every facet of Cape Cod's natural, built, and community systems."

"Dedicated and immediate action is necessary to slow the effects of climate change and improve the region's resiliency to its impacts."

- 59% of Cape residential buildings use gas, and the average Massachusetts home that uses gas for heating produces >3x as much GHGs as a home heated with electricity
- Key planning principles include "targeting the region's highest emitting sectors"
- Priority strategies for action include "Reduce energy consumption and strive towards Net Zero Energy Building"
- Accelerated electrification of buildings using air-source heat pumps is essential for achieving climate goals

DRI Review of Cape Cod Canal Pipeline Relocation Expansion Project

- MA Environmental Policy Act (MEPA) and Federal Energy Regulatory Commission (FERC) reviews completed in 2026
- AGT DRI addresses consistency with RPP goals and objectives
- CCC Subcommittee to consider DRI application, AGT testimony, and public comment and direct CCC staff to prepare draft decision
- Draft decision to be considered by full CCC membership

RPP "Goal & Objective" Areas



Public comment period is open; first hearing scheduled October 28th in Bourne

Voting Members of Cape Cod Commission

TOWN APPOINTEES
Catherine Ledec - Barnstable
Robert Frangieh - Bourne
Elizabeth Taylor - Brewster
Thomas Wilson - Chatham, Chair
Michael McGee - Dennis
Michele Vion - Eastham
John Druley - Falmouth
Matt Suphin - Harwich
Ernest Virgilio - Mashpee
Douglas Fromm - Orleans
Peter Okun - Provincetown
Anne McManus - Sandwich
Kevin Grunwald - Truro, Secretary
David Mead-Fox - Wellfleet
Dennis Prebensen - Yarmouth

OTHER APPOINTEES
Ronald Bergstrom - Barnstable County Commissioner
John D. Harris - Minority Representative
Vacant - Native American Representative
Carlos Barbosa - Governor's Appointee

CCC members are not allowed to discuss DRI projects outside of the public hearing process.

While experience demonstrates they will respond to public concerns, they are volunteers, doing the best they can.

What Are Other Environmental Impacts?

Construction & Operations

- Construction disturbance: ~210 acres, including 45 acres of tree clearing, plus air pollution and noise
- HDD "frac out" potential: use of ~700,000 gallons of water plus drilling additives
- Permanent disturbance: ~61 acres, including easements over Article 97 land, 7.2 acres of new impervious surface
- Operational impacts: air pollution and noise from M&R stations

AGT specifies mitigation for these impacts.

No discussion of fuel source, leakage, combustion, or emissions - and "NOT AN EXPANSION"!

AGT's DRI Summary

"(I)mpacts have been avoided and minimized to the maximum extent practicable through route selection, extensive use of existing utility corridors, HDD, restoration of temporary work areas, and implementation of comprehensive environmental protection measures"

"The Project also incorporates climate adaptation, stormwater management, habitat restoration, forestland protection, and other mitigation measures"

"Overall, the Project represents a significant regional benefit"

Sierra Club Focus – Preventing & Mitigating Expansion Potential

Sierra Club does not oppose pipeline relocation, but ***state and federal officials allowed AGT to claim "not an expansion."*** CCC should require AGT to:

- **Quantify expansion potential**
- **Validate claims of upstream constraints**
- **Quantify and mitigate potential adverse impacts attributable to expanded infrastructure**:
  - Methane leakage and combustion-related greenhouse gas emissions
  - Air pollution - indoors and through direct exhaust - and impacts on public health
- **Present alternative pipeline replacement scenarios for ensuring uninterrupted gas service and increasing affordability and supporting decarbonization:**
  - Right-size the pipeline
  - ***Commit to not exploit additional capacity as a condition of approval***
  - Investing in efficiency, electrification, and renewable thermal technologies
  - Exploiting phasing opportunities with Bourne Bridge replacement funding not yet secured

Initial Sierra Club's comments, filed October 13th, urge Commission members and staff to scrutizine AGT's claims and require independent validation

RPP Consistency – Climate Change

CLIMATE CHANGE

GOAL: To increase the region's resiliency to climate change impacts and mitigate climate change by supporting and contributing as a region to the Commonwealth's greenhouse gas reduction goals and initiatives, including a statewide net zero carbon target by 2050.

RELEVANT OBJECTIVES

- Promote electrification and low or no carbon technologies for building energy use
- Promote low or no carbon energy generation as appropriate to context
- Promote strategies to address climate change induced impacts such as wildfire and extreme temperatures and changes in precipitation



Pipeline expansion and lack of mitigation …

- *Undermine the Commonwealth's greenhouse gas reduction goals and initiatives*
- *Undermine building electrification*
- *Do not promote low- or no-carbon generation*
- *Exacerbate climate-change-induced impacts*

RPP Consistency – Infrastructure, Energy & Economy Goals

CAPITAL FACILITIES AND INFRASTRUCTURE

GOAL: To guide the development of capital facilities and infrastructure necessary to meet the region's current and demonstrated future needs.

No need for pipeline expansion

RELEVANT OBJECTIVES

- Ensure capital facilities and infrastructure promote efficiency, sustainability, and resiliency
- Enhance the coordinated provision of services and facilities that respond to the needs of the region

Inefficient, unsustainable, and less resilient infrastructure

ENERGY

GOAL: To provide an adequate, reliable, and diverse supply of energy to serve the communities and economies of Cape Cod.

Reduced fuel diversity

RELEVANT OBJECTIVES

- Increase resiliency of energy generation and delivery
- Promote energy efficiency and conservation measures by minimizing energy consumption through planning and design

Reduced resiliency and disincentive for conservation

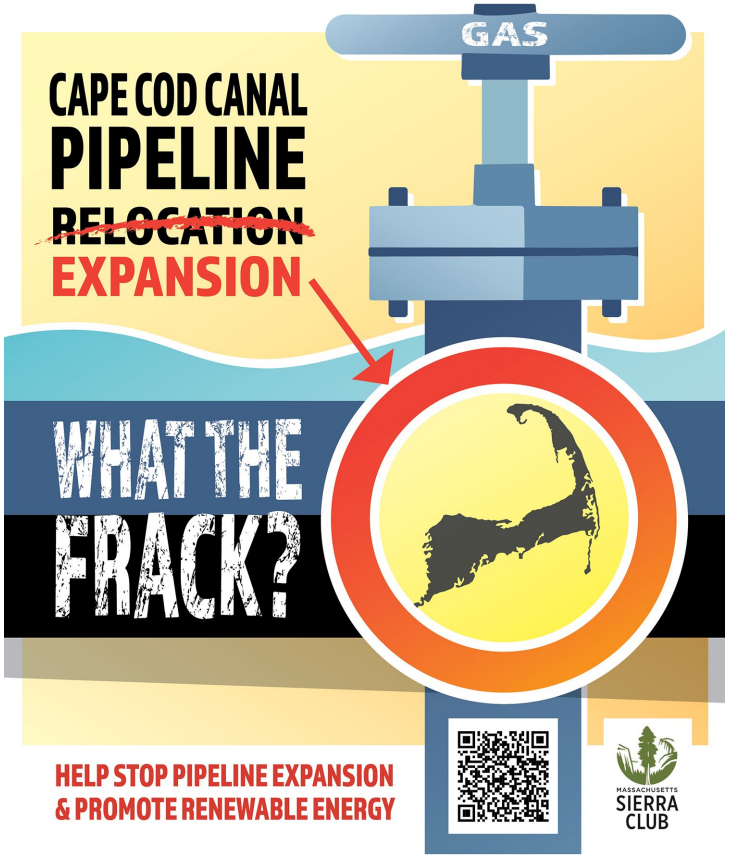
ECONOMY

GOAL: To promote a resilient, inclusive, and diverse regional economy that protects and builds on the Cape's competitive advantages.

Reduced fuel diversity and increased vulnerability to price volatility undermine competitiveness



Pipeline Relocation - Public Comment Opportunities



Initial DRI Hearing: October 28, 5pm

Bourne Veterans Memorial Community Center
239 Main St, Buzzards Bay, MA 02532

IN-PERSON ONLY

- Please join us to provide your testimony or to be a presence in the room. RSVP Here.

Submit your public comment before the hearing to ensure Commission members are aware of your concerns:

- the public comment guide
- link to submit your comments
- slides from the community meetings
- Sierra Club's preliminary comments to the Commission
- our campaign page, with more resources

You can submit comments at any time. Follow-on DRI hearings will allow virtual participation.