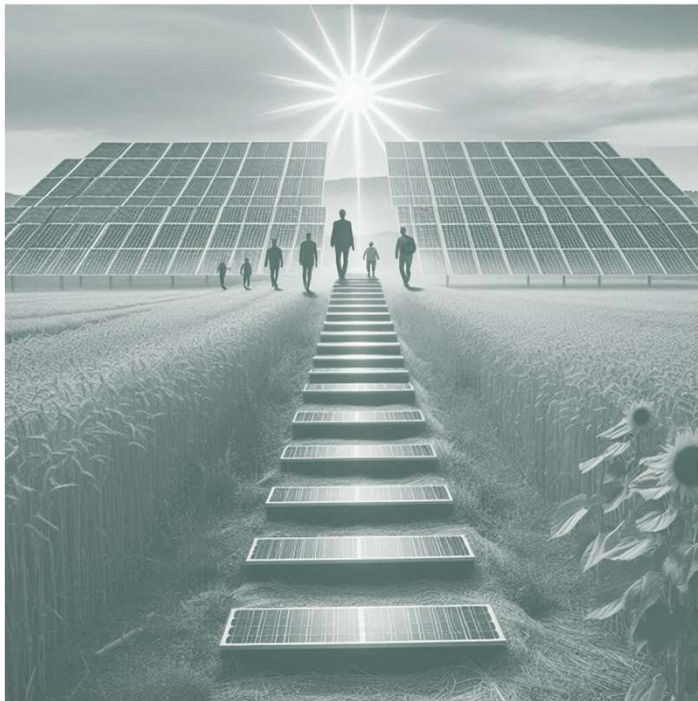


Modernizing Charlotte Energy: Transitioning to Clean Energy for a Sustainable Future



Project Overview and Objectives



- Transition to Clean Energy
 - More than 80% of voters support the Town transition to sustainable energy usage.
 - Lead VT & encourage other Towns to follow.
 - Improve air quality in town buildings and in town.
- Reduce Costs
 - Stabilize and lower cost of energy to the Town.
 - Source as much of our own energy as possible.
 - Use savings to upgrade equipment.
 - Take advantage of incentives NOW!
- Increase Energy Efficiency
 - Drive energy efficiency through proven technologies and practices to make better use of energy resources.



Considerations, Decisions, and Action Discussion

- Aesthetically Balanced
- Who Benefits From Charlotte Spend
- Regulation & Policy/Timing Constraints
- Bring Clarity To Alternative Energy
- What Else?

A Considered Approach

“How can the Town reduce energy costs while minimizing taxpayer and environmental impact?”

Fiscally Responsible Approach

The Status Quo

With Charlotte's current mix of properties, over the next 25 years, Charlotte taxpayers will spend \$631K in fossil fuel costs*, \$175K in electricity**, and emit 2.3M lbs of carbon, and polluting particulate into our immediate environment.



One Gallon of fuel produces about 75 balloons worth of CO₂

* 4% energy inflation

** Above and beyond the town solar garage

Note: Equipment (\$ not incl.) will require replacement as well during this time period

Current Energy Infrastructure

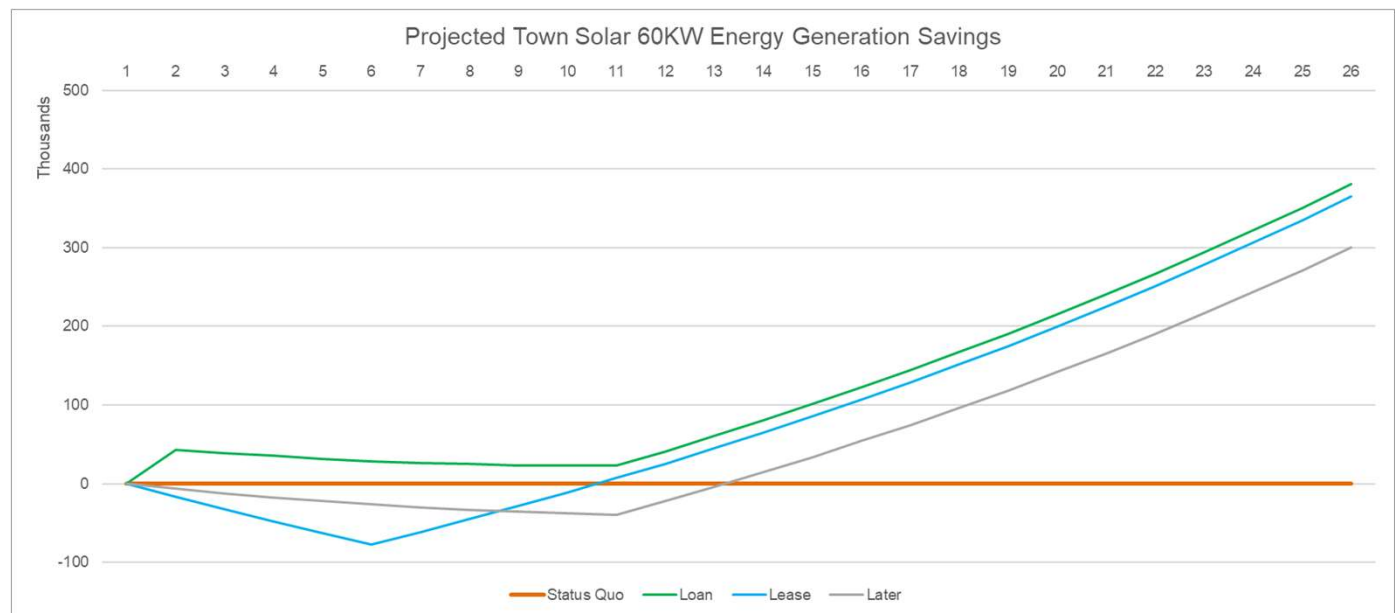
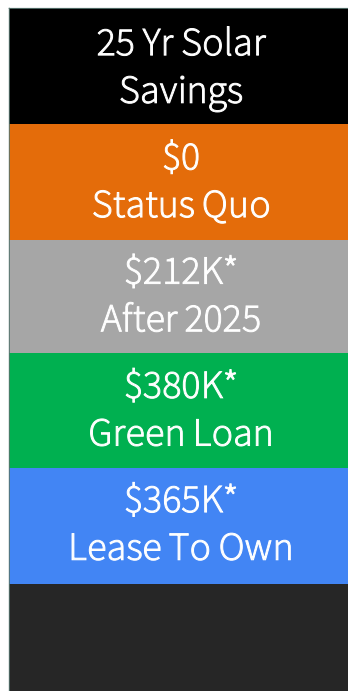
Town Energy Mix



 Fossil Fuels  Electric Grid  Solar

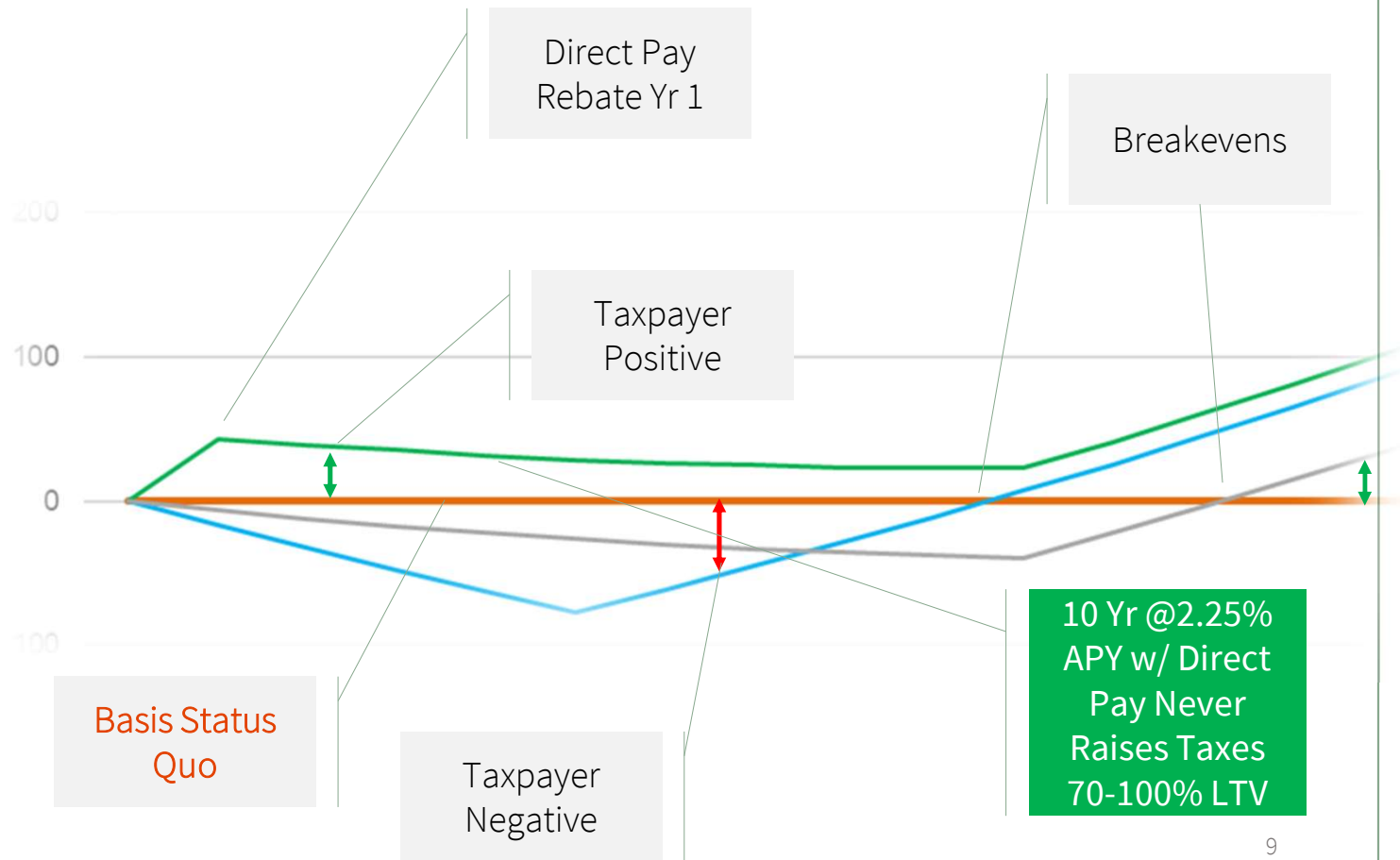
- Aging Equipment
 - Town Hall, Sr Ctr, and CFRS has aging heating and cooling equipment
 - Charlotte's current energy infrastructure is overly dependent on oil for heating.
- Economic Challenges
 - Fuel and electricity is imported, volatile, and at the mercy of state and federal policy decisions. Costs will rise unless we lock in energy rates.
- Environmental Concerns
 - The environmental impact of oil usage raises concerns regarding pollution and climate change.

Adding 60 KW Solar Capacity



*Assumes Electricity is Coming From Solar

25 Yr Solar Savings
\$0 Status Quo
\$212K* After 2025
\$380K* Green Loan
\$365K* Lease to Own



Fiscal Choices:

Over the next 25 years



Status Quo

Heating and Cooling...

Spend more than \$733K on Fuel and Outside Electricity (not incl HVAC replacements)



Lease To Own

Spend \$251K, upgrade HVAC equipment, extend life of existing, almost eliminate carbon

Green Loan



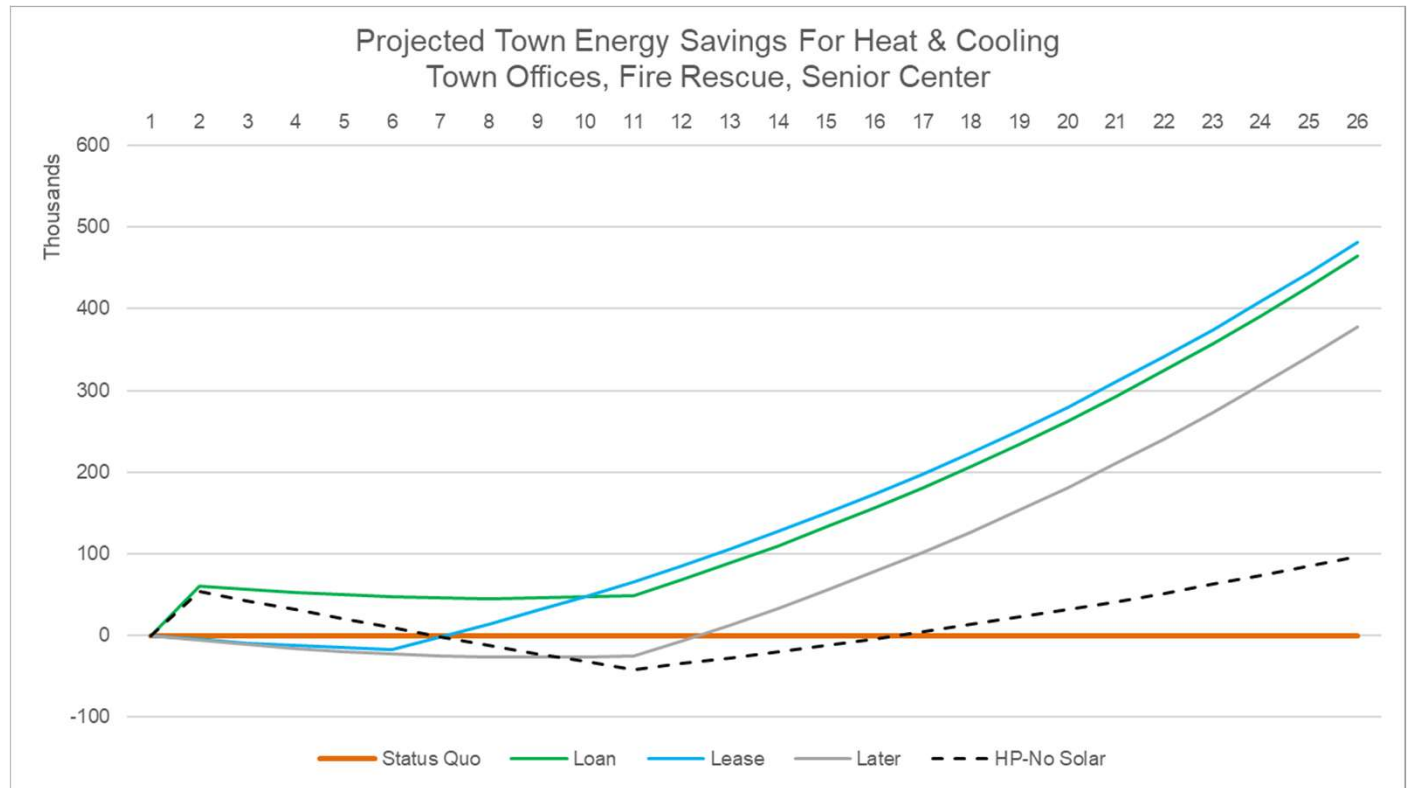
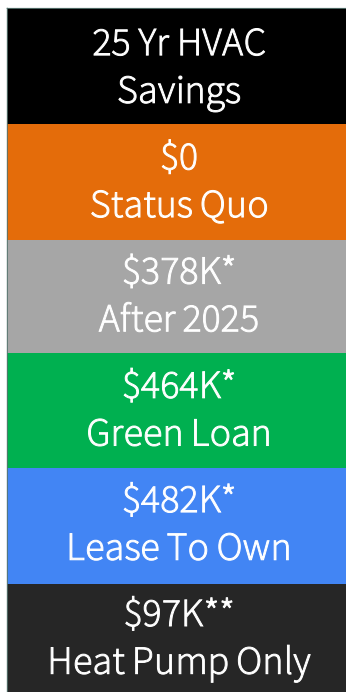
Spend \$268K, upgrade HVAC equipment, extend life of existing, almost eliminate carbon, not negatively impact taxpayer

Delay



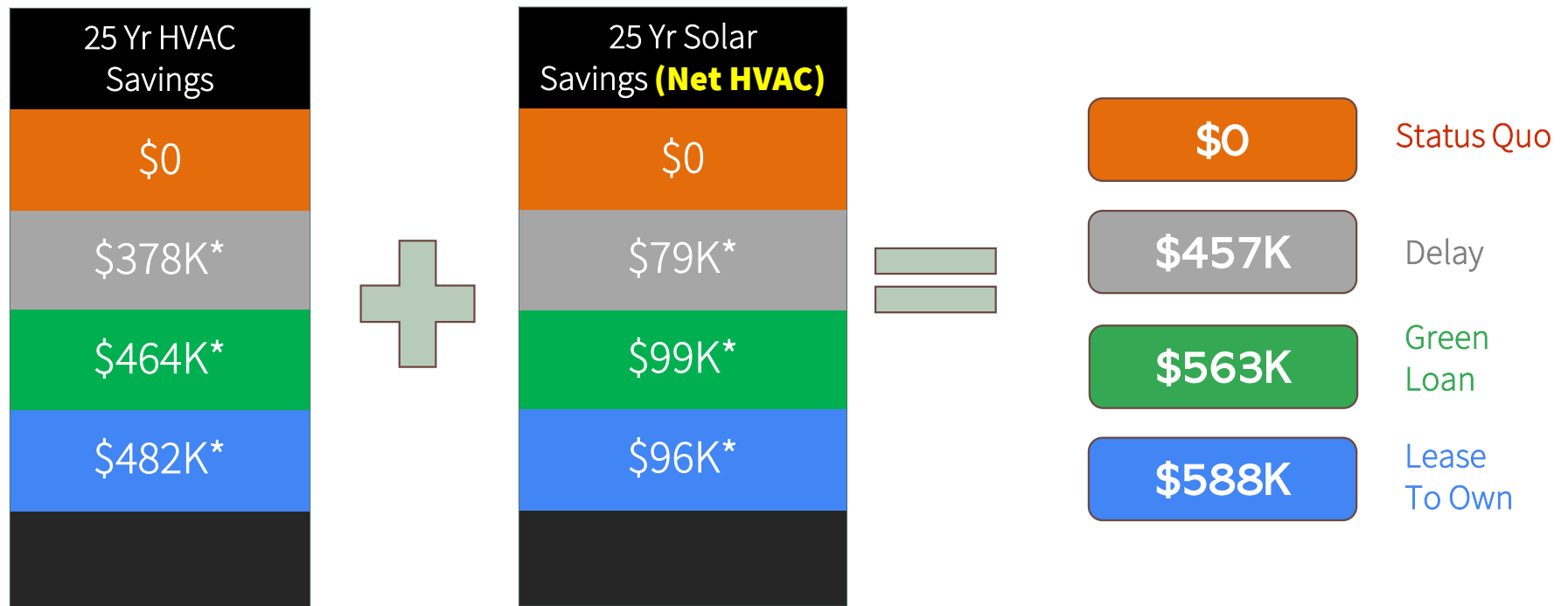
Spend \$355 K, upgrade HVAC equipment, extend life of existing, almost eliminate carbon, impact taxpayer

Using 44KW of New Capacity To Drive HVAC Efficiency



*Assumes Electricity is Coming From Solar
** While Incentives Last

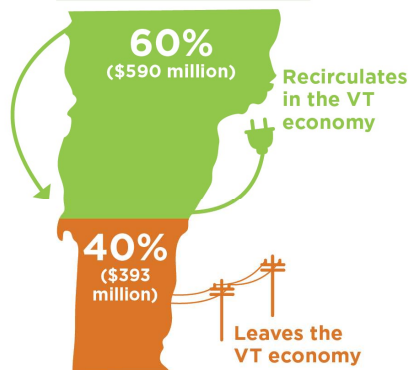
Combined 25 yr Savings



*Assumes Electricity is Coming From Solar

Where Our Energy \$ Goes

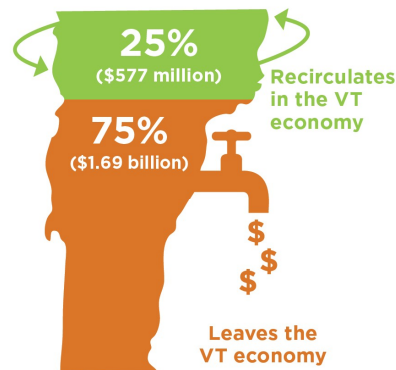
Vermont electricity spending, 2023



Sources: Electricity spending: Vermont electric utilities. Dollar recirculation share: Ken Jones, Senior Fellow for Economic Analysis, 2024. **Note:** Dollar recirculation share was updated in January 2025 to reflect out-of-state transmission costs.



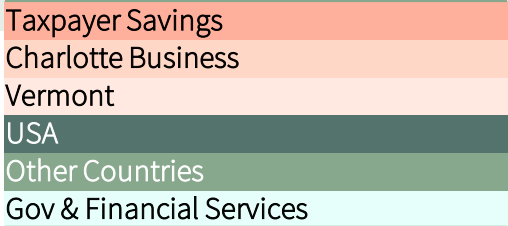
Vermont fossil fuel spending, 2023



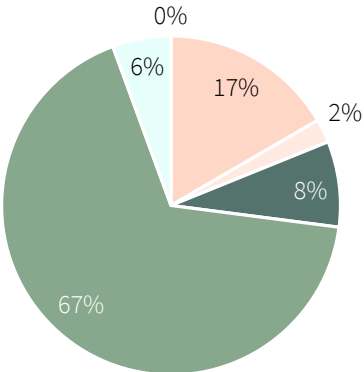
Sources: Fossil fuel spending: Vermont Department of Taxes, 2024; VGS, 2024. Dollar recirculation share: Ken Jones, Senior Fellow for Economic Analysis, 2024. **Note:** This graph includes spending on thermal and transportation fuels only.



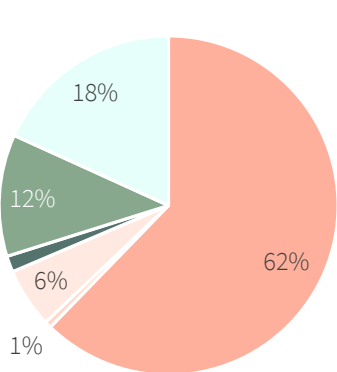
Where Our Energy Spend Goes HVAC Comparison



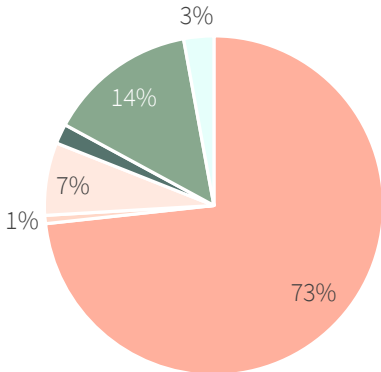
Status Quo



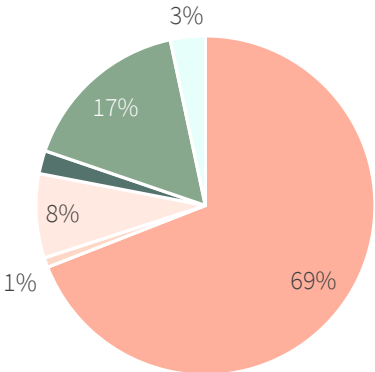
5 Yr Lease To Own



10 Yr Green Loan



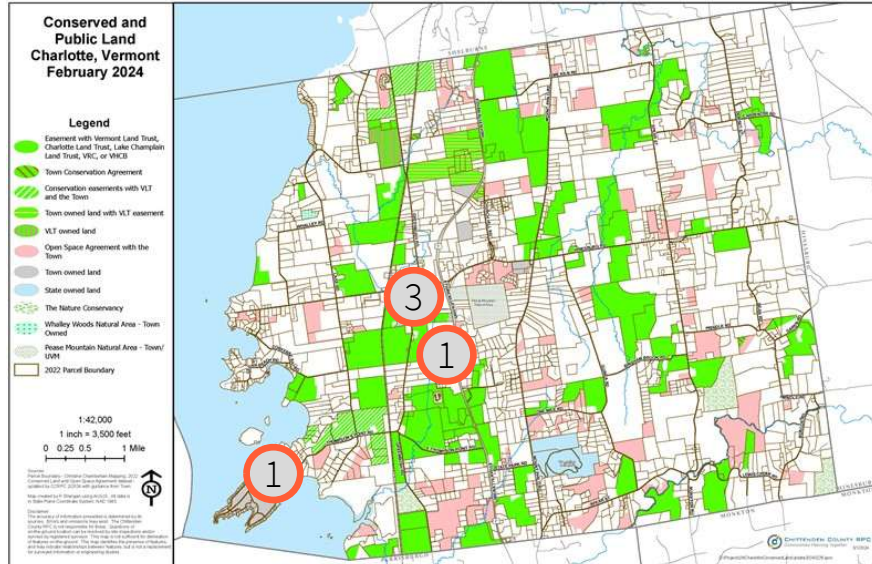
Delay



Transitioning Helps Taxpayers, Domestic Businesses and Environment

*HVAC Model Only, Solar Model will grow USA slice if panels and racking bought domestically

Identified 5 Town Properties for Solar Evaluation



Aesthetic & Best Use

Consideration shall be given to visual impact as well as current and future best use of the properties.

Sun Exposure

Identifying town properties for solar installations requires finding unobstructed space for efficient energy generation.

Access To Grid

To minimize cost and use group net metering, CPG's were filed for 5 of 7 town properties that have access to the grid.

Aesthetic Choices

Tracking Array

Ground Mount

Roof Mount

All locations identified as potentially workable. Not all locations will be necessary. Pending cost/performance analysis and aesthetic review. No decisions have been made.



Optional Location Thompsons Point

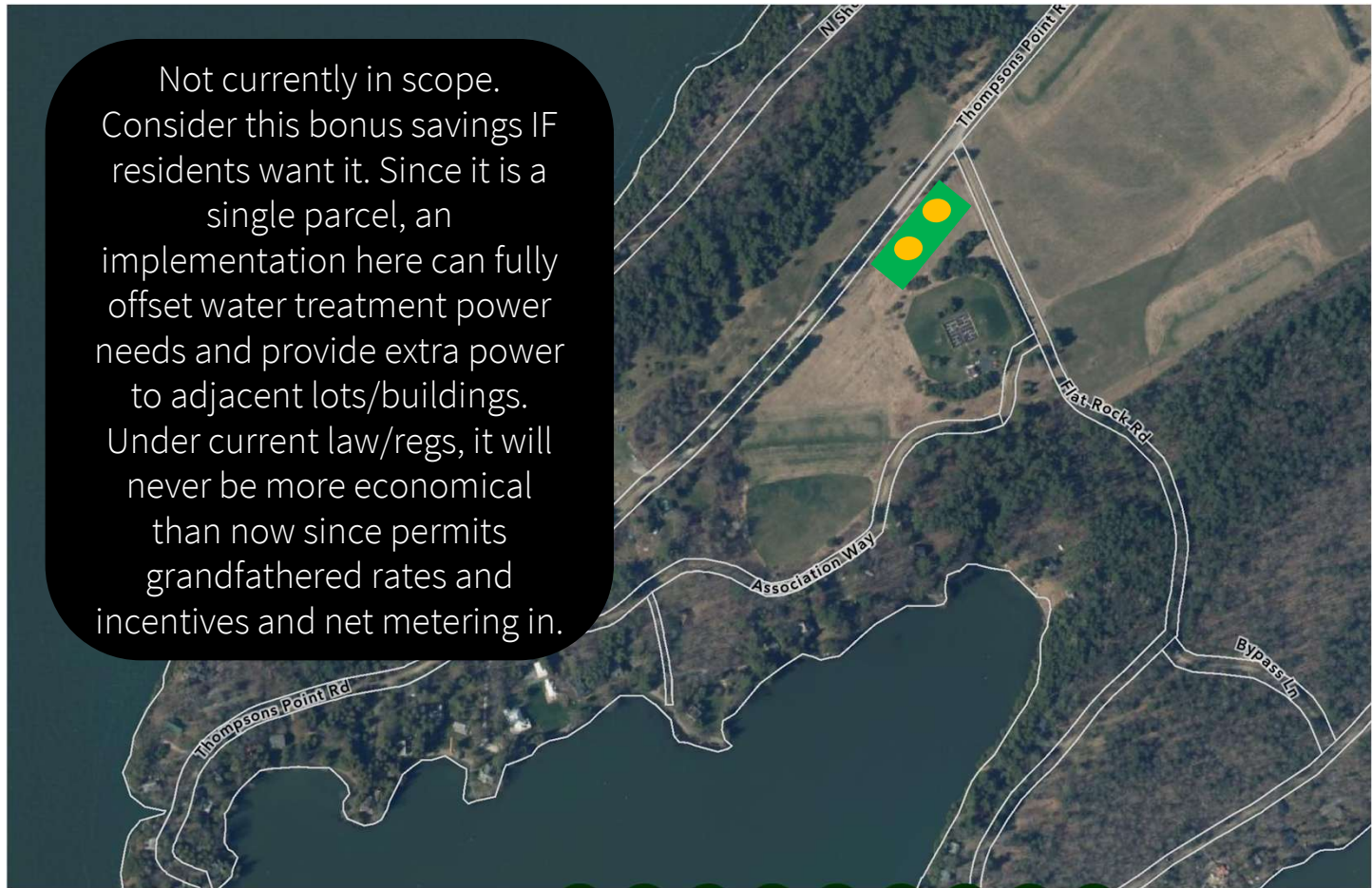
Tracking Array

Ground Mount

Roof Mount

All locations identified as potentially workable. Not all locations will be necessary. Pending cost/performance analysis and aesthetic review. No decisions have been made.

Not currently in scope. Consider this bonus savings IF residents want it. Since it is a single parcel, an implementation here can fully offset water treatment power needs and provide extra power to adjacent lots/buildings. Under current law/regs, it will never be more economical than now since permits grandfathered rates and incentives and net metering in.



Timing Decisions



June 2024 legislation changed the economics of solar implementations



Federal incentives are available **for now but are being targeted for elimination**



Commitment to town plan energy goals require more immediate action



Lake Champlain is stressed. If not us, then who?

- Now = ~\$115K or more savings compared to post tariff / incentives future
- PUC rates changes grandfathered until December 25 (apx 10% per KWH exchanged)
 - Federal Incentives under attack (30% on equipment purchases)
 - Group Net Metering grandfathered until January
 - Vulnerable to Foreign Energy Tariffs or Retaliation

Board and People's Decision Timing

1. Now, Later, Never – ASAP
2. Go to Phase II and Get RFP's
3. Financing Approach To Pursue – ASAP
4. Project Management (Start of Phase II)
5. Financing Decision - (June)
6. Peoples Approval if Required - (July???)
7. Break Ground - (November)



Environmental Choices:

7,600,000
CO2 Balloons
Over Charlotte

Thoughts?
Questions?



**Thanks To All
Our Volunteers!**