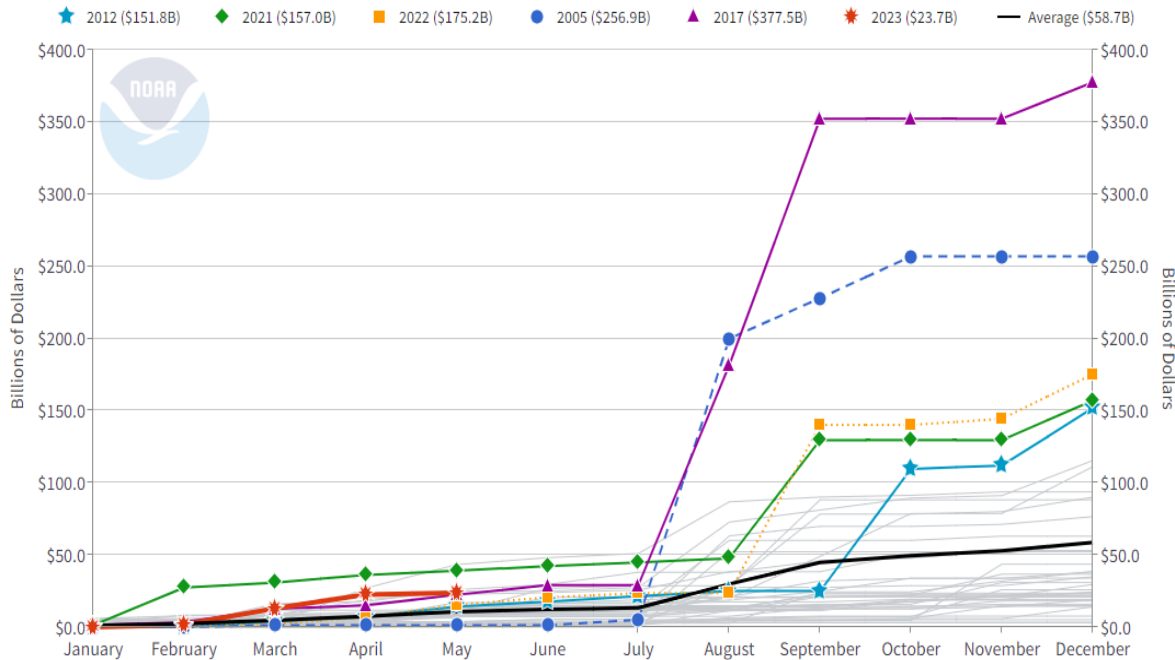




# Urgent Need of New Technologies for Grid Resiliency and Reliability

1980-2023 US \$Billion Disaster Event Cost (CPI Adjusted)



NOAA – 06/08/2023

## VI. Conclusion

The U.S. electric grid is highly vulnerable to severe weather. This report estimates the average annual cost of power outages caused by severe weather to be between \$18 billion and \$33 billion per year. In a year with record-breaking storms, the cost can be much higher. For example, weather-related outages cost the economy between \$40 billion and \$75 billion in 2008, the year of Hurricane Ike. These costs are expected to rise as climate change increases the frequency and intensity of hurricanes, tornadoes, blizzards and other extreme weather events.

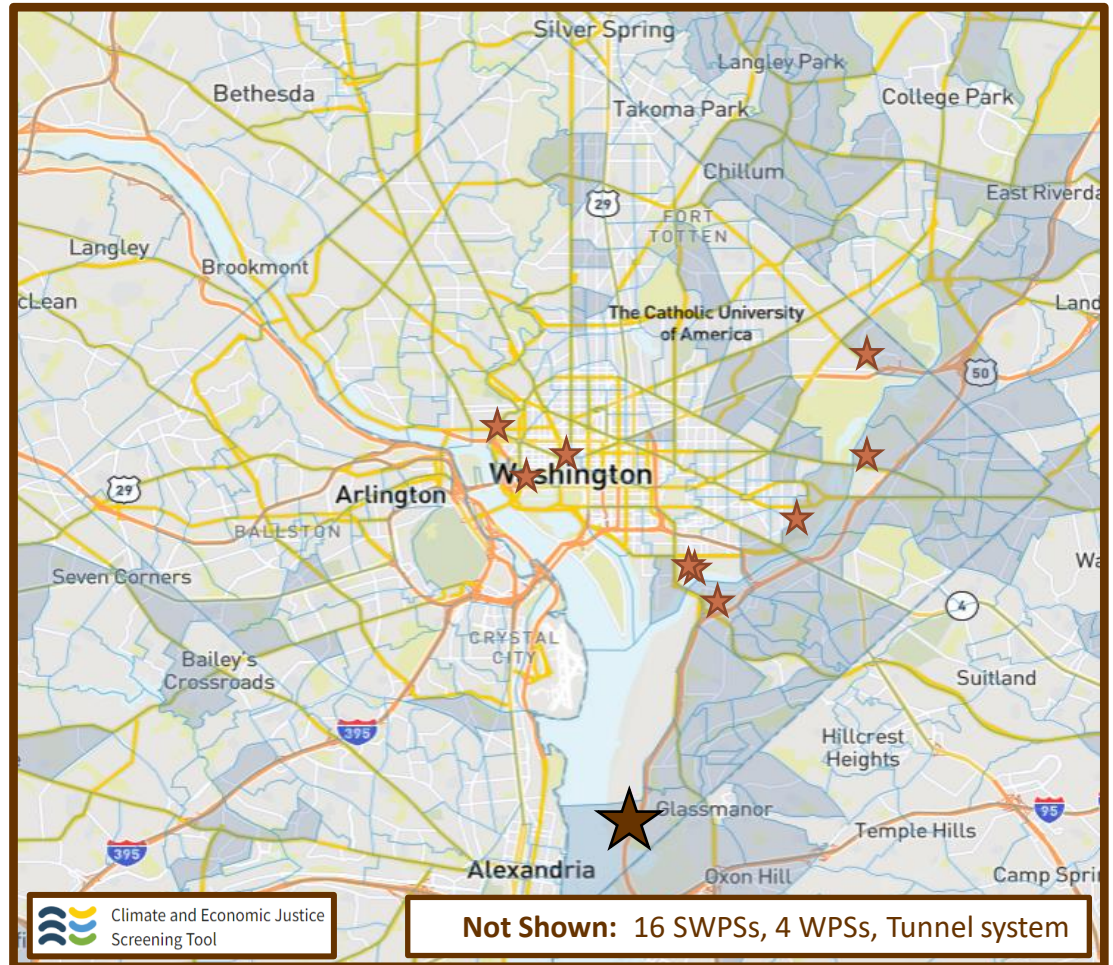
Preparing for the challenges posed by climate change requires investment in 21<sup>st</sup> century technology that will increase the resilience and reliability of the grid. The Recovery Act allocated \$4.5 billion for investments in smart grid technologies.

A multi-dimensional strategy will prepare the United States for climate change and the increasing incidence of severe weather. Developing a smarter, more resilient electric grid is one step that can be taken now to ensure the welfare of the millions of current and future Americans who depend on the grid for reliable power.

## Equity

- Major sewer pumping stations and Blue Plains are in proximity to disadvantaged communities (who will be impacted the most)
- Savings from this project can be invested in community assistance programs
- Workforce training and jobs are an investment in DC residents
- DBE participation in the project is an investment in the District

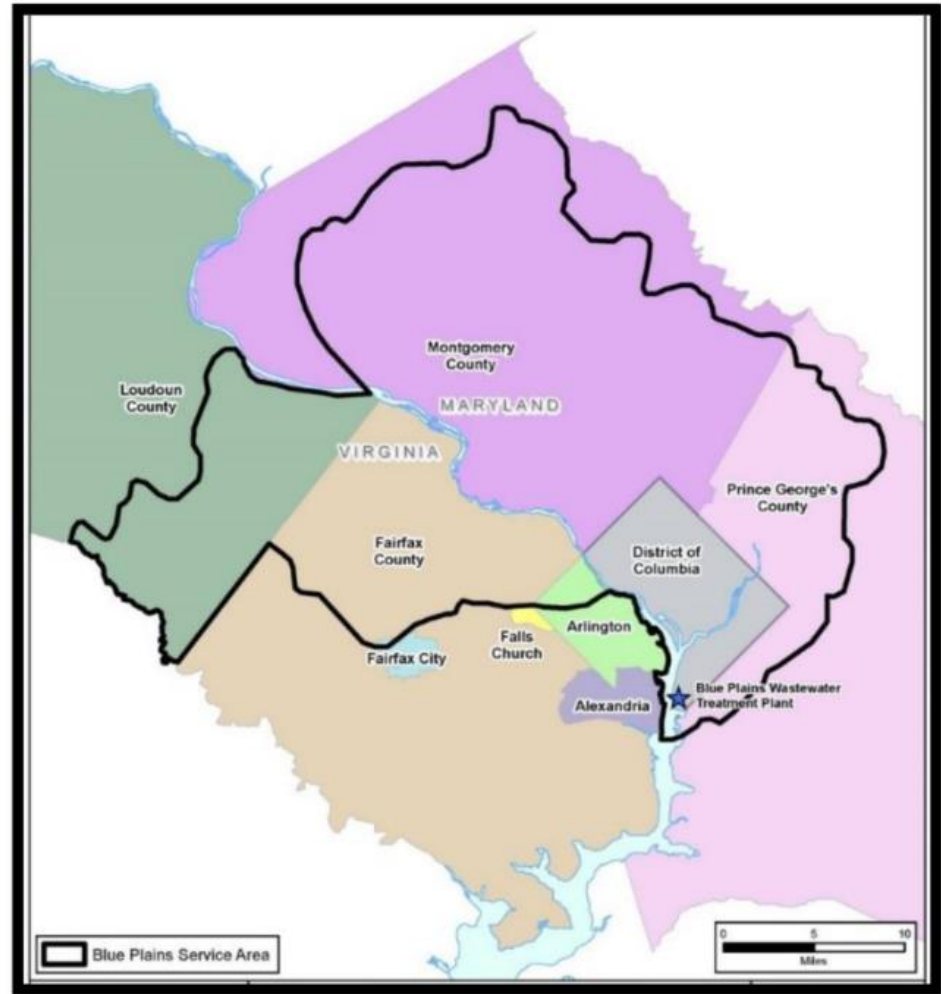
*Overburdened and Underserved Communities*



## Strategic Focus

- Increase the use of green energy
- Lessons learned in microgrid implementation can be shared
- Lessons learned in acquiring funding can be shared
- Potential EV charging stations for use in NEVI along I-295
- Efficient use of existing renewable DERs

Figure 2-1 Blue Plains Service Area

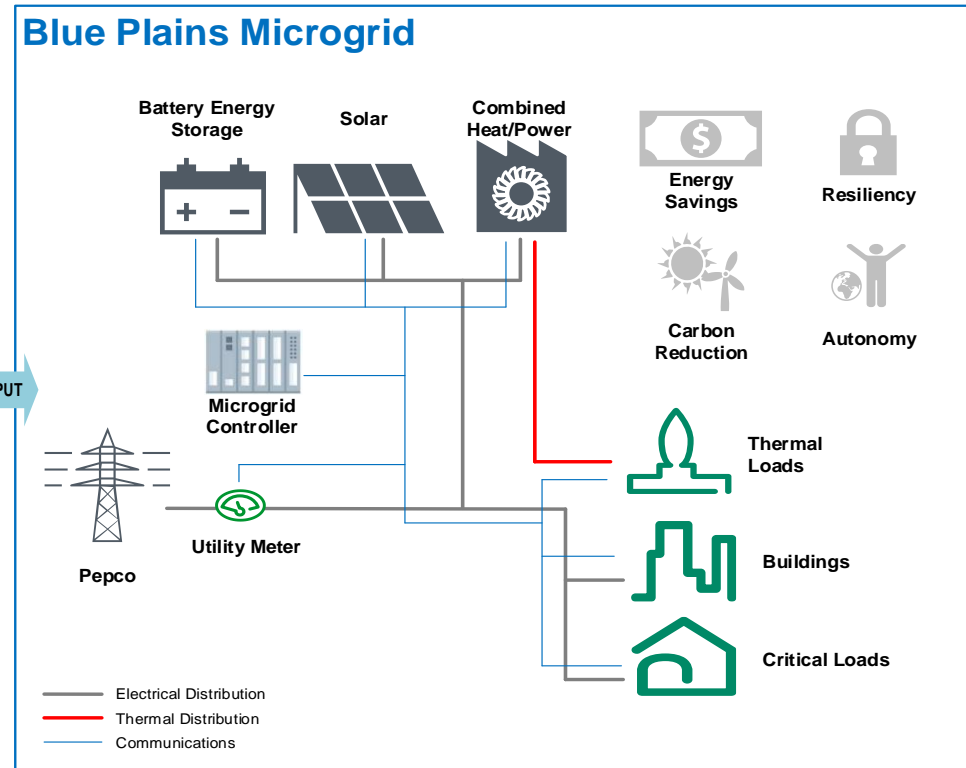
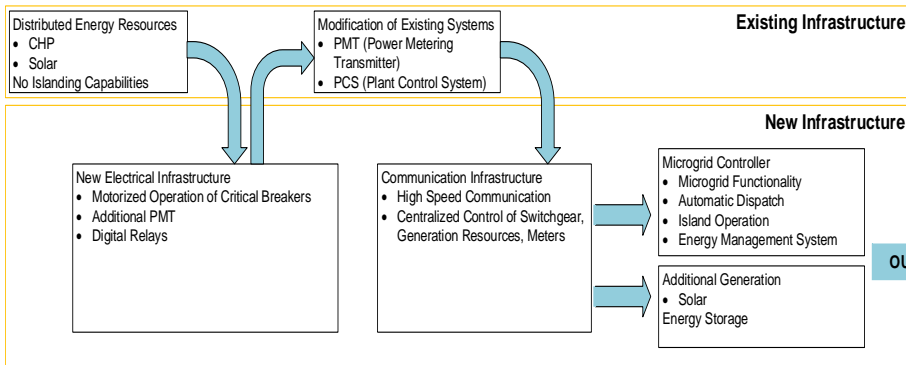




# Blue Plains Microgrid Project



## Microgrid



➔ To be implemented in phases ➔

### 2022 Q3 Grid Modernization Grid Modernization Selected Obstacle:

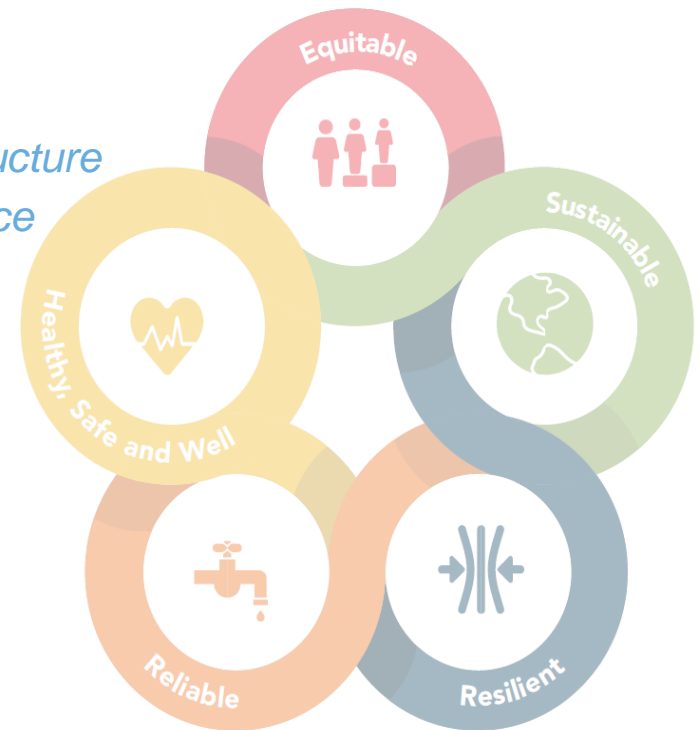
*Aligning the Blue Plains Microgrid project scope*

*with Justice 40 outcomes and securing federal funds for project implementation*

*in partnership with external stakeholders.*

## Desired outcomes

- *Improve the safety of personnel*
- *Increase reliability by upgrading aging electrical infrastructure*
- *Enable management of and optimization of DERs (reduce carbon footprint)*
- *Reduce operational and maintenance costs*
- *Improve resiliency*
- *Address DC equity and J40 objectives*
- *Receive grant funding from J40, FEMA, BIL, IRA, etc.*
- *Support sustainable DC Climate goals*
- *Align with DC Water's Blueprint 2.0 imperatives*
- *Meet cybersecurity requirements*
- *Invest savings into underserved communities*







# Blue Plains Microgrid Project -Funding



## Applicable Funding Programs



### US Department of Energy:

BIL Grid Resiliency and Innovation Partnership Program (GRIP)  
IIJA State & Community Energy Program (SCEP)  
IIJA Energy Efficiency and Conservation Block Grant Program (EECBG)

Winter 2024 for FY25  
May 2024 for FY25?  
June 2024 for FY25?



### Internal Revenue Service/Treasury:

Investment Tax Credits (ITC)  
Clean Energy Investment Tax Credit Sec 48

Construction before 01/1/2025  
In service before 12/31/2024



### Federal Emergency Management Agency:

Building Resilient Infrastructure & Communities (BRIC)  
Hazard Mitigation Assistance Programs

Summer of 2023 for FY24  
September of 2023 for FY24



### US Department of Transportation:

Discretionary Grant Program for Charging & Fueling Infrastructure (CFI)  
National Electric Vehicle Infrastructure Program (NEVI)

Spring of 2024 for FY25  
Spring of 2024 for FY25



### Environmental Protection Agency:

IRA Greenhouse Gas Reduction Fund (GHGRF)  
IRA Climate Pollution Reduction Grant Program (PRGP)  
IRA Environmental and Climate Justice Block Grant Program (ECJ)

Summer of 2023  
Late 2023  
Summer of 2023 Climate



## Challenge Status



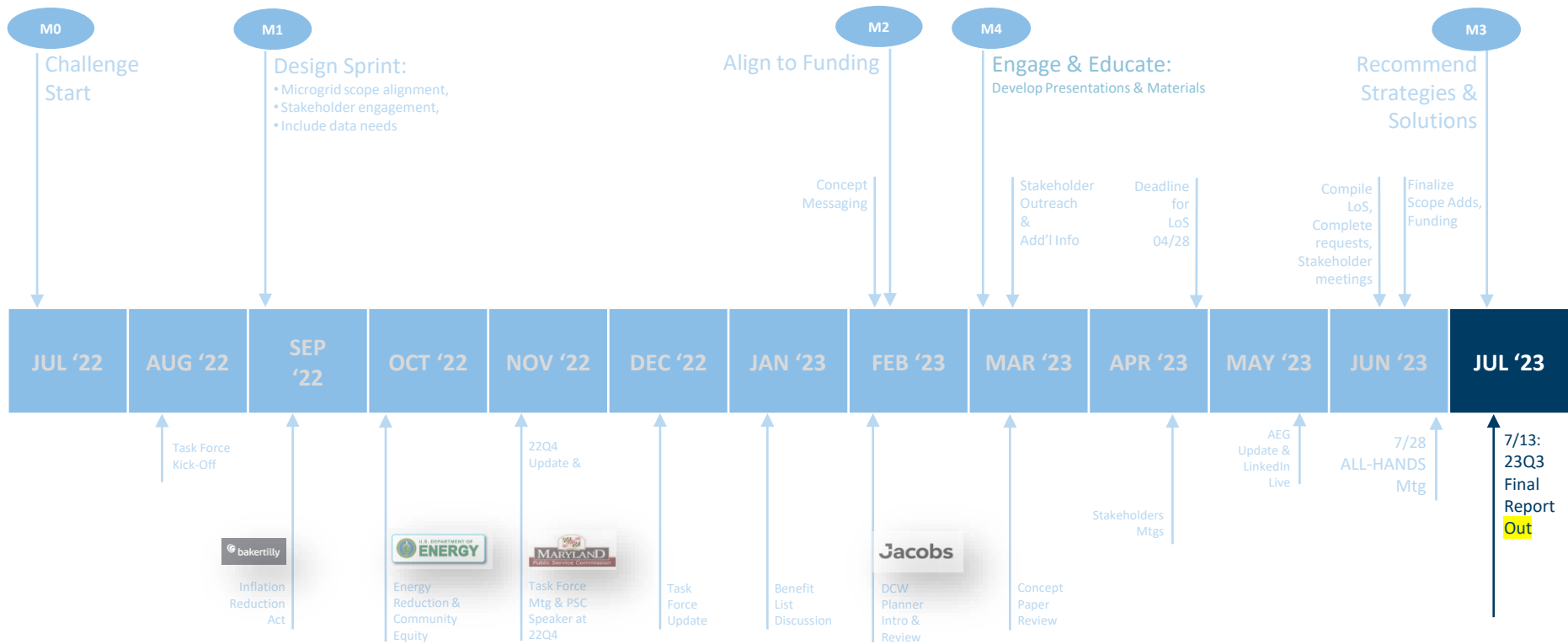
- **Progress Made in Overcoming Challenges:**
  - *Secured partial funding through a grant for design.*
  - *Conducting feasibility studies and developing robust plans for microgrid project implementation.*
  - *Investing in grid resilience and electrical infrastructure upgrades for improved resilience at Blue Plains.*
- **Ongoing Efforts to Address Remaining Project:**
  - *Exploring additional funding opportunities and partnerships.*
  - *Continuously optimizing renewable energy integration strategies.*
  - *Implementing demand response programs to manage peak loads effectively.*
- **Future Outlook:**
  - *Potential benefits include reduced greenhouse gas emissions, increased energy efficiency, and cost savings.*
  - *Enhanced stability and reliability, especially during emergencies or power outages.*
  - *Contribution to the overall sustainability goals of the DC Water and District.*
  - *Potential for knowledge sharing and replication of the microgrid model in other communities.*



# Challenge Status (cont.)



## 22Q3 Timeline w/ Milestones and Successes







# Summary of Outreach & Results (cont.)



## J40/Federal & Other Funding

Shelley Cohen & Apera Nwora  
David Owens, Elizabeth Perez, Gary Leatherman, Katie Harkless, Hamza Masud,  
Kyle Davis, Sheryl Ponds

### Goals:

- Identify ALL **funding opportunities**, educate, and recommend strategies for project qualification to maximize funding opportunities.
- Research J40 and District (**climate, health, equity**) requirements, compare to the present project scope, define deficiencies, educate, and recommend solutions for alignment.
- Give priority to under-resourced groups and communities

### Deliverables:

- Recommend solutions for compliance and alignment
- Provide a 1-page brief on J40 for Task Force use.
- Provide external resources to present on J40, environmental justice issues, etc..
- Provide information and resources for other funding opportunities.

### Accomplishments:

- Educated the Task Force on applicable funding programs from numerous federal, state, and local programs
- Identified 12 funding opportunities that could apply to the project
- Assisted in getting letters of support for the project to acquire proposed funding
- Added scope consideration of EV charging per NEVI requirements
- Added scope consideration of equity benefits per J40 requirements.

## Stakeholder → Outreach

Ernest Jolly\*, Hamza Masud\*, David Owens  
Apera Nwora, Dennis Brown, Emanuel Briggs, H.G. Chissell, Katie Harkless, Rob Taylor, Rob Thome, Shelley Cohen, Zach Wilson,

### Goals:

- Identify ALL critical stakeholders (jurisdictional, community, etc.) as well as additional Task Force members.
- Engage, Inform, Gather input & Gain Cooperation from identified stakeholders
- Establish a process for ongoing collaboration with stakeholders

### Deliverables:

- Complete list of stakeholders and engagement approach
- Identify respective roles, responsibilities, and expected outcomes
- Head up mailing of Outreach Packages with LoS
- Receive letters of support for funding after active engagement in the Blue Plains Microgrid Collaboration Process

### Accomplishments:

- Identified additional Task Force members
- Identified and engaged critical stakeholders
- Acquired 10 letters of support for the project.
- Working diligently to apply and secure federal funding for the project.

## Stakeholders Concerns

- **Letter of endorsement**
  - *Is endorsement legally binding?*
  - *Is the schedule dependent on the availability of funding?*
  - *Is there a financial commitment?*
- **Procurement of future work**
  - *Preclusion from future project-related contracts?*
  - *Delivery methods unknown at that this time*
  - *High cost and long implementation period*
- **Availability to participate and contribute to meetings**
- **Demonstrating all the project benefits, especially equity**
- **Microgrid Design Unknowns**
  - *Total generation MW - pending final design*
  - *Exporting power and Interconnection agreements requirements*

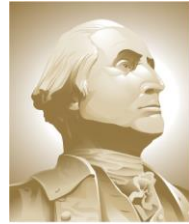




# Summary of Outreach & Results (cont.)



## Current Supporters



THE GEORGE WASHINGTON UNIVERSITY  
WASHINGTON, DC



Washington Gas™  
A WGL Company



Metropolitan Washington Council of Governments



DAITECHCORP

AMERESCO  
Green • Clean • Sustainable



Heila  
A KOHLER COMPANY

WSSCWATER  
DELIVERING THE ESSENTIAL



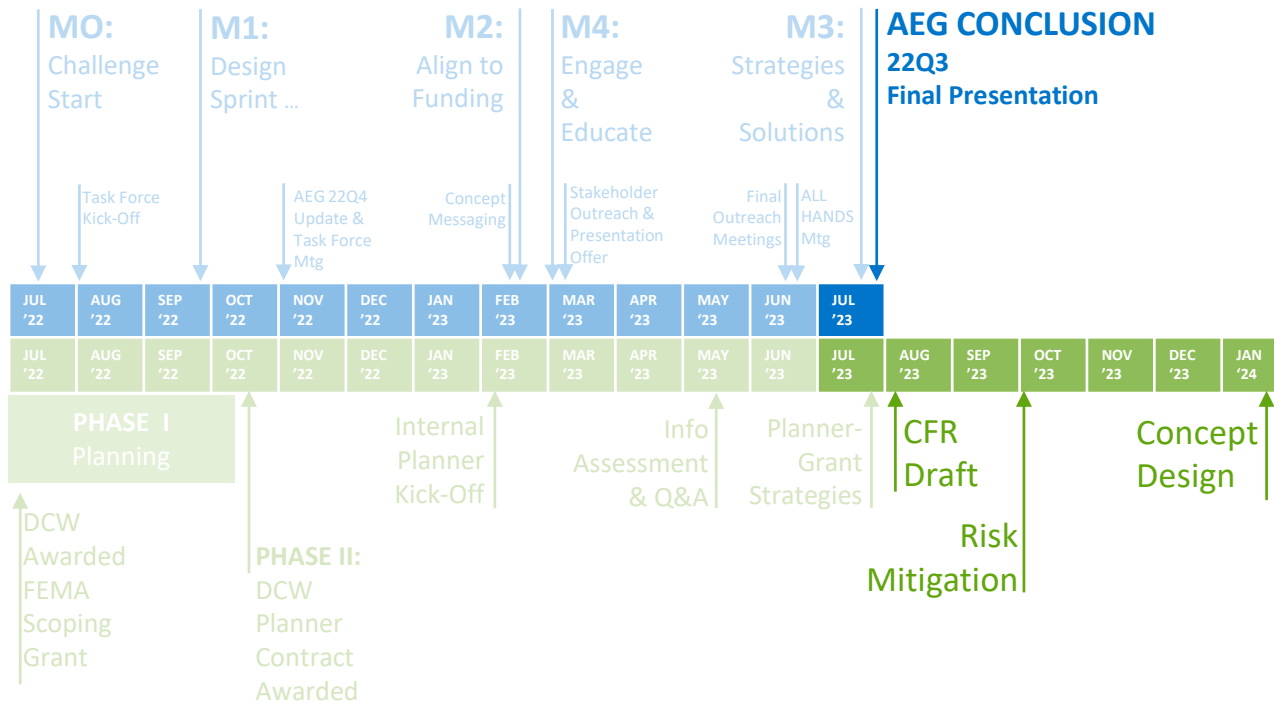
pepero<sup>SM</sup>  
AN EXELON COMPANY



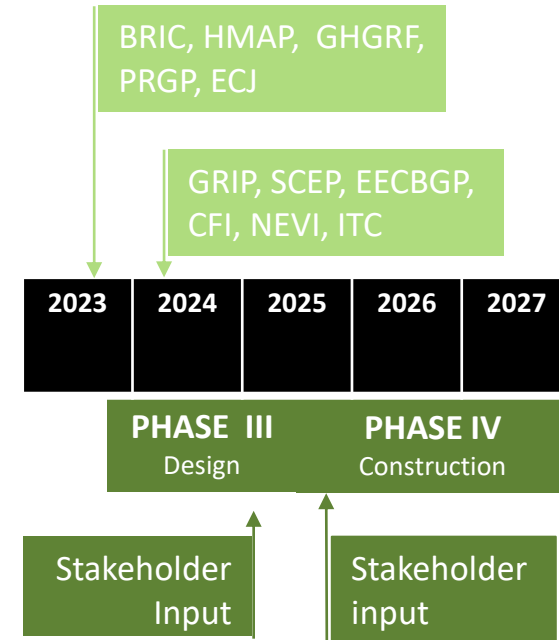
# Progress & Next Steps



## AEG 22Q3 Timeline



## Funding Timeline



## Blue Plains Microgrid PHASE II Timeline

## Future Contracts



## Suggested Modifications to the Project

- Collaborate with universities on **energy technology**
- Increased involvement for **DBE/MBE**
- Explore possible **partnerships** (NRL, JBAB, adjacent communities)
- Collaborate with Pepco (**no-wires and demand response**)
- **Train** the local workforce on skills applicable to technologies
- Include **innovative designs** to increase funding opportunities
- Include **EV charging stations** for electrified fleet
- Include **EV Charging stations** for the I-295 corridor for NEVI
- Consider **EV charging hub** for (WMATA, public.)
- Equate project MW to % of **district green energy** requirements
- Further define **export or emergency power plans**
- Re-invest savings into **Assistance Programs**
- **Continue engagement** with stakeholders for additional community benefits
- Set up a **project website**.





## Measured Success

### **Align project scope to comply with J40**

*Identify **equity benefits, funding requirements, and DC Equity Goals.***

### **Secure or plan to secure federal funding**

*Identify **applicable funding** opportunities.*

*Secure **letters of support** for upcoming applications.*

*Develop an ongoing **funding timeline.***

### **Engage & educate stakeholders**

*Identify, engage, and educate stakeholders for support.*

*Track stakeholders' **concerns.***

*Develop a plan for **ongoing engagement.***