DC Circulator

Electric Bus Program

July 28, 2020

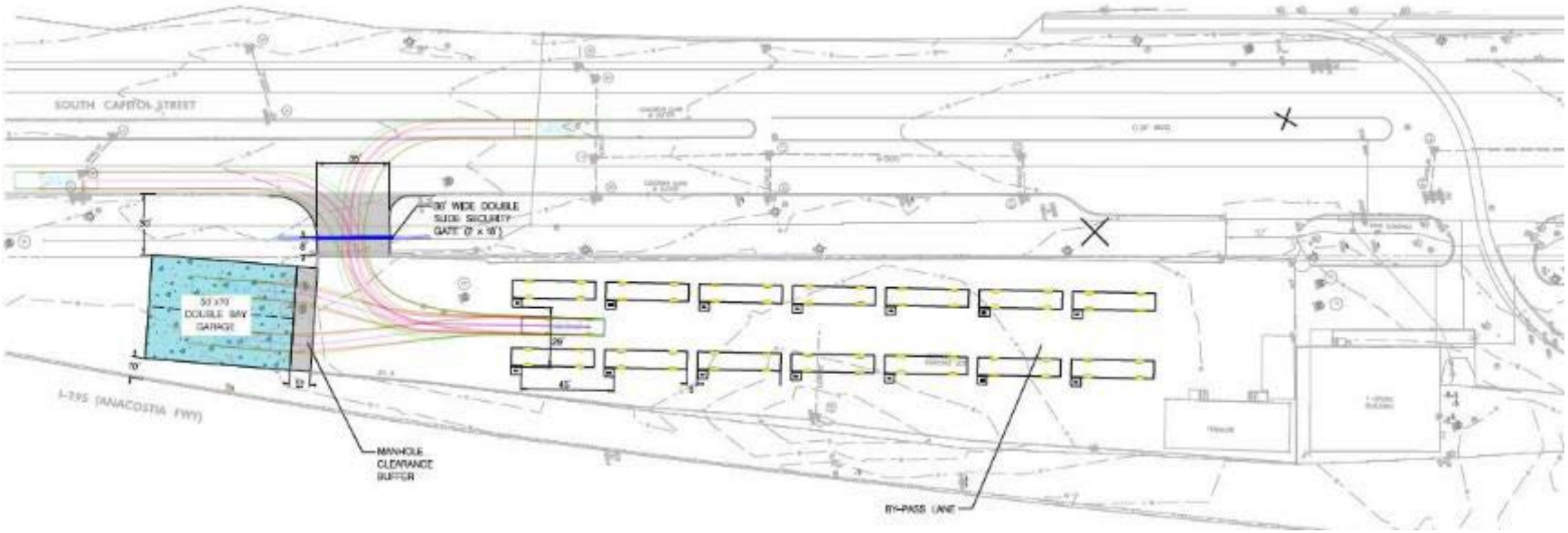
CHARGING FACILITY IDENTIFICATION AND CONSTRUCTION

South Capitol Construction

- Substantial completion on April 14, 2018
- Chargers installed/ commissioned on April 19, 2018
- Electric bus service began May 1, 2018

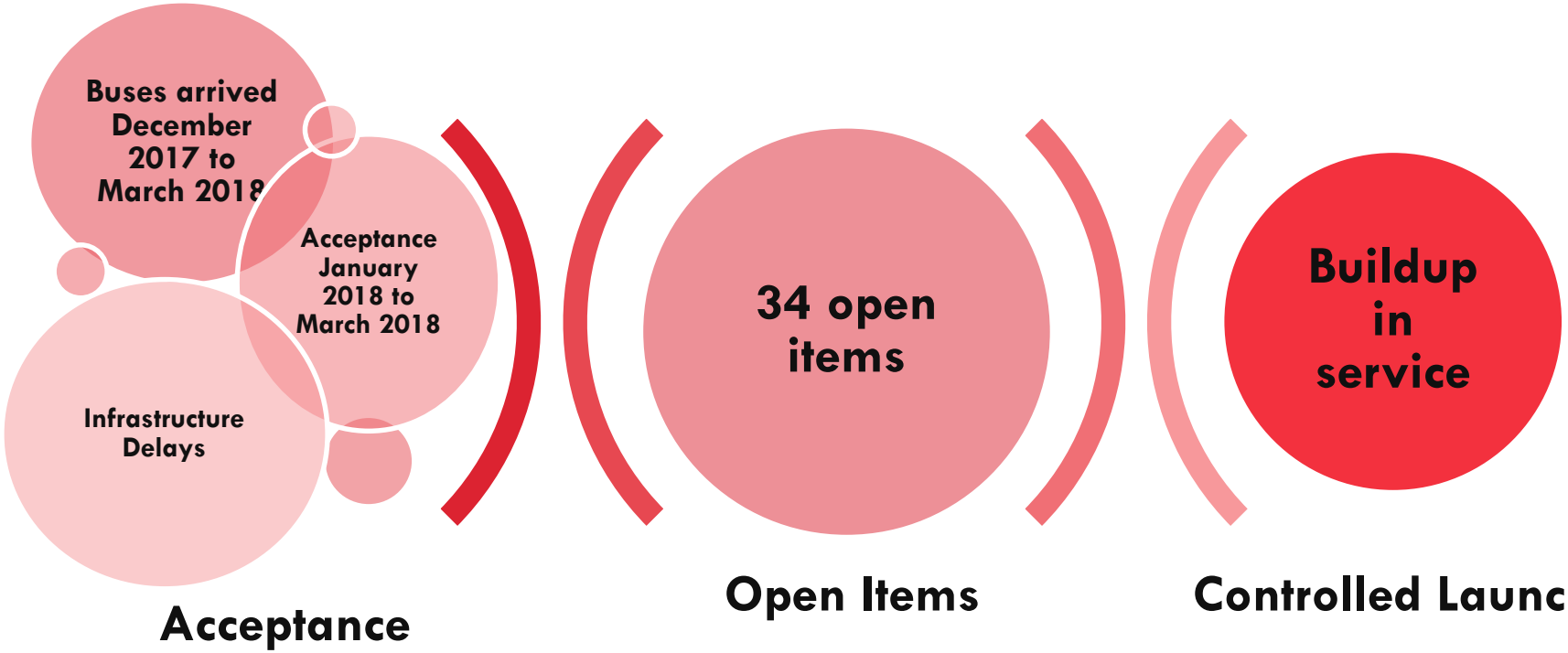
Next Steps

- Add a turn bay from southbound South Capitol
- Add concrete bus pads at chargers
- Construct new maintenance garage

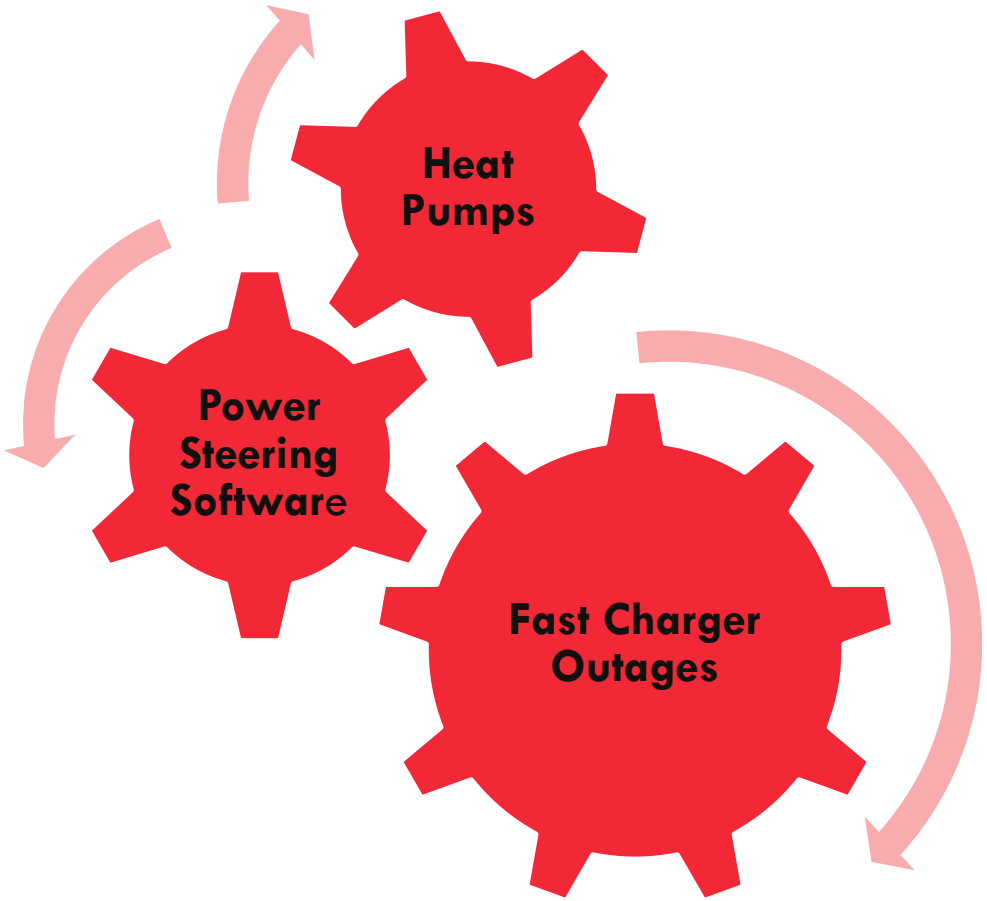


OPEN ITEMS

Challenges During Acceptance: Open Items



Most Common Open Items



PRELIMINARY FINDINGS

Initial Pilot Finding – Average Range

Nominal Range vs. **Operating Range**

NOMINAL RANGE =
Total nameplate energy in batteries (kWh) ÷ Vehicle efficiency, based on Altoona testing (kWh/mile)

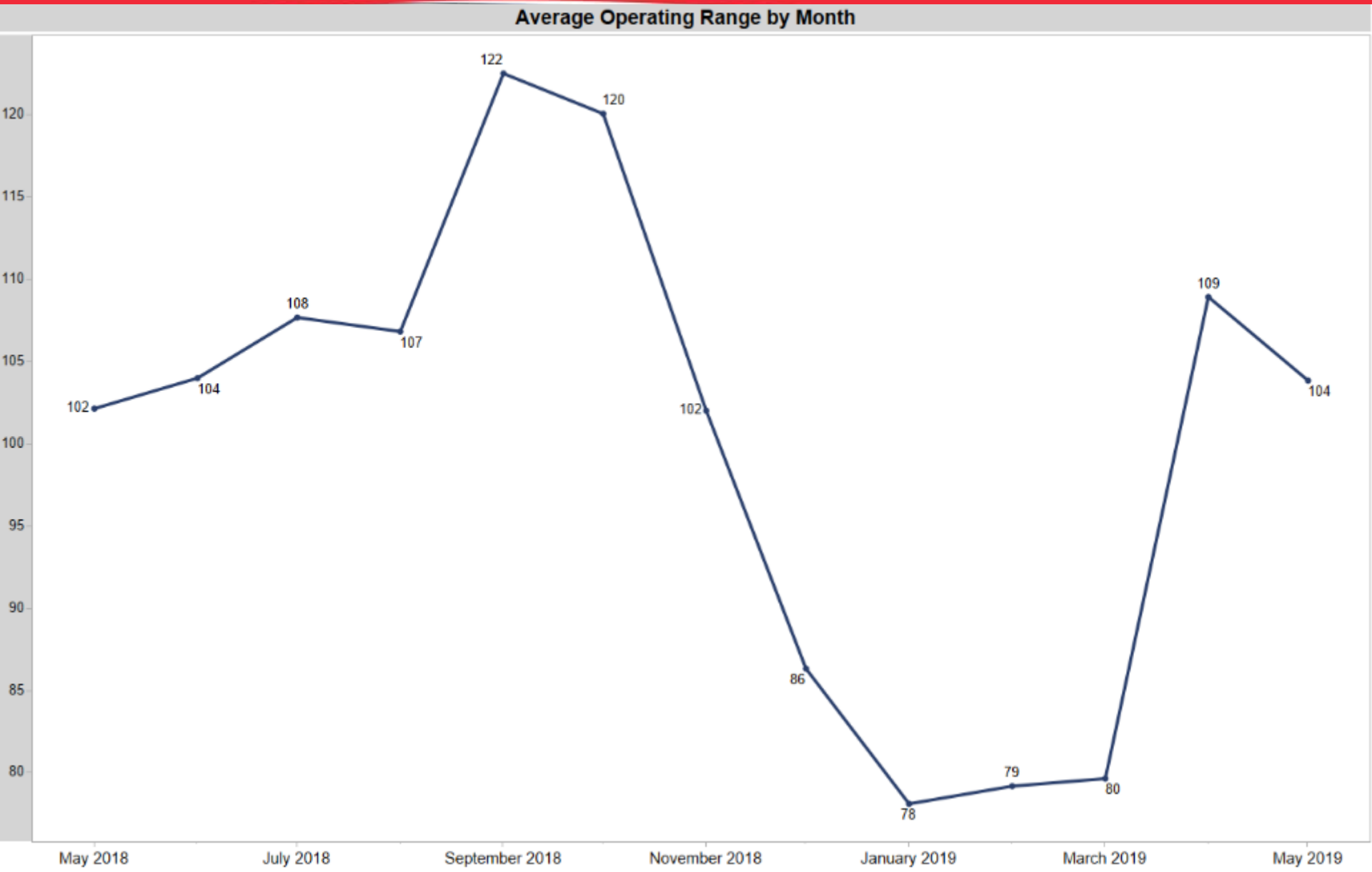
251 miles

OPERATING RANGE =
Usable energy in batteries (kWh) ÷ Operating efficiency (kWh/mile)

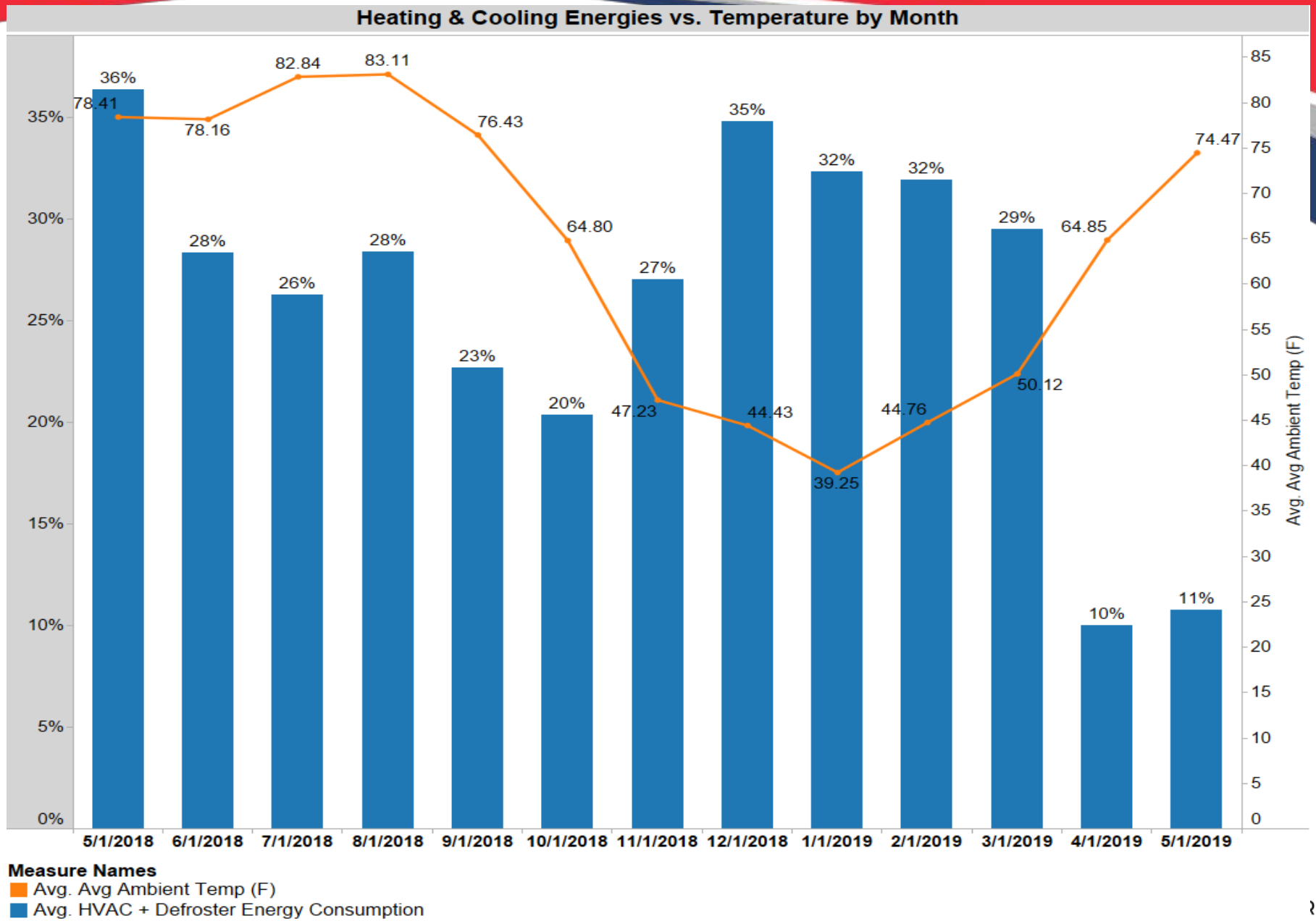
1 miles

Source of formula: Proterra. Understanding Range: Clarity behind the Calculations. 2018

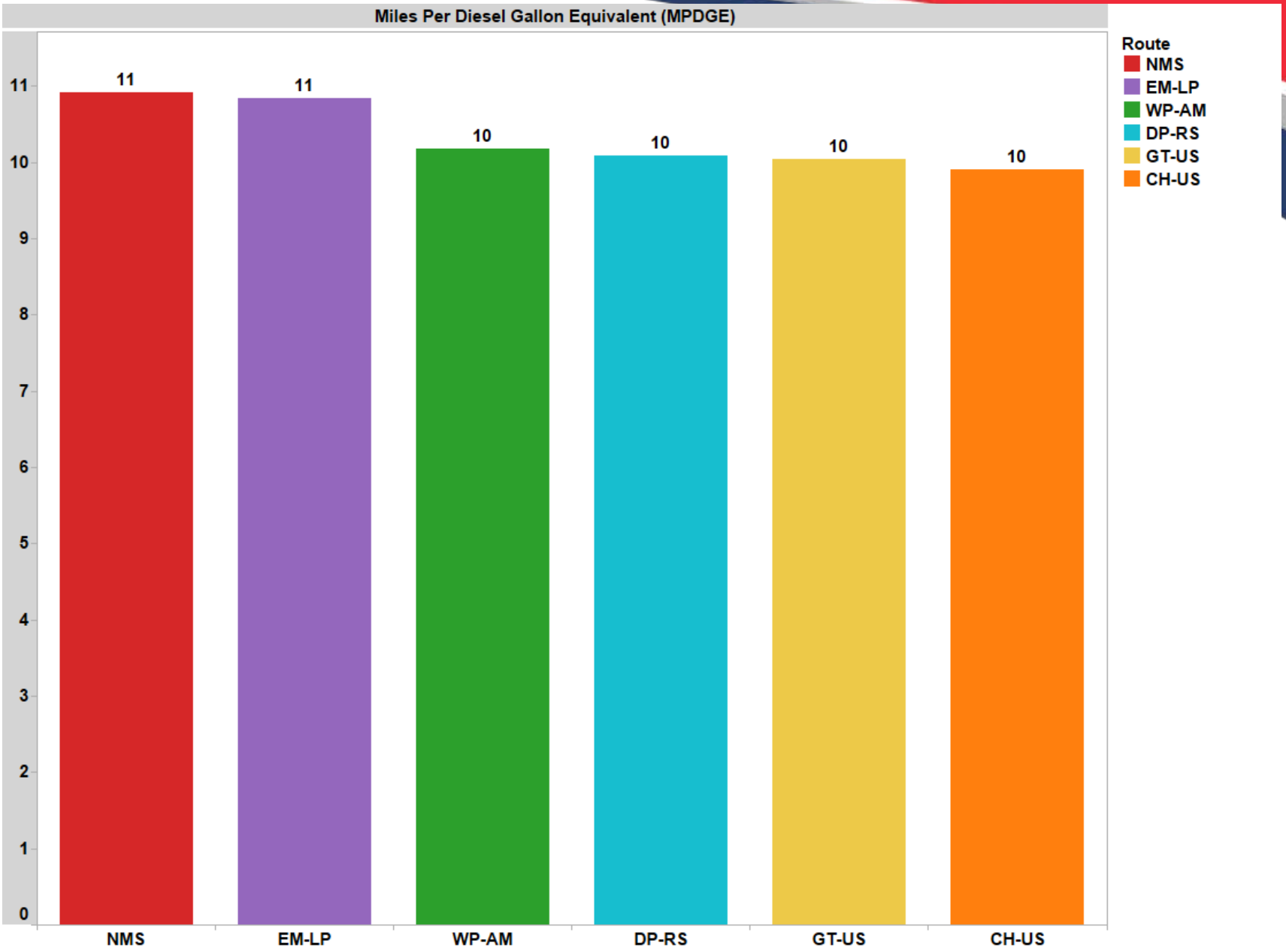
Initial Pilot Finding – Average Range by Month



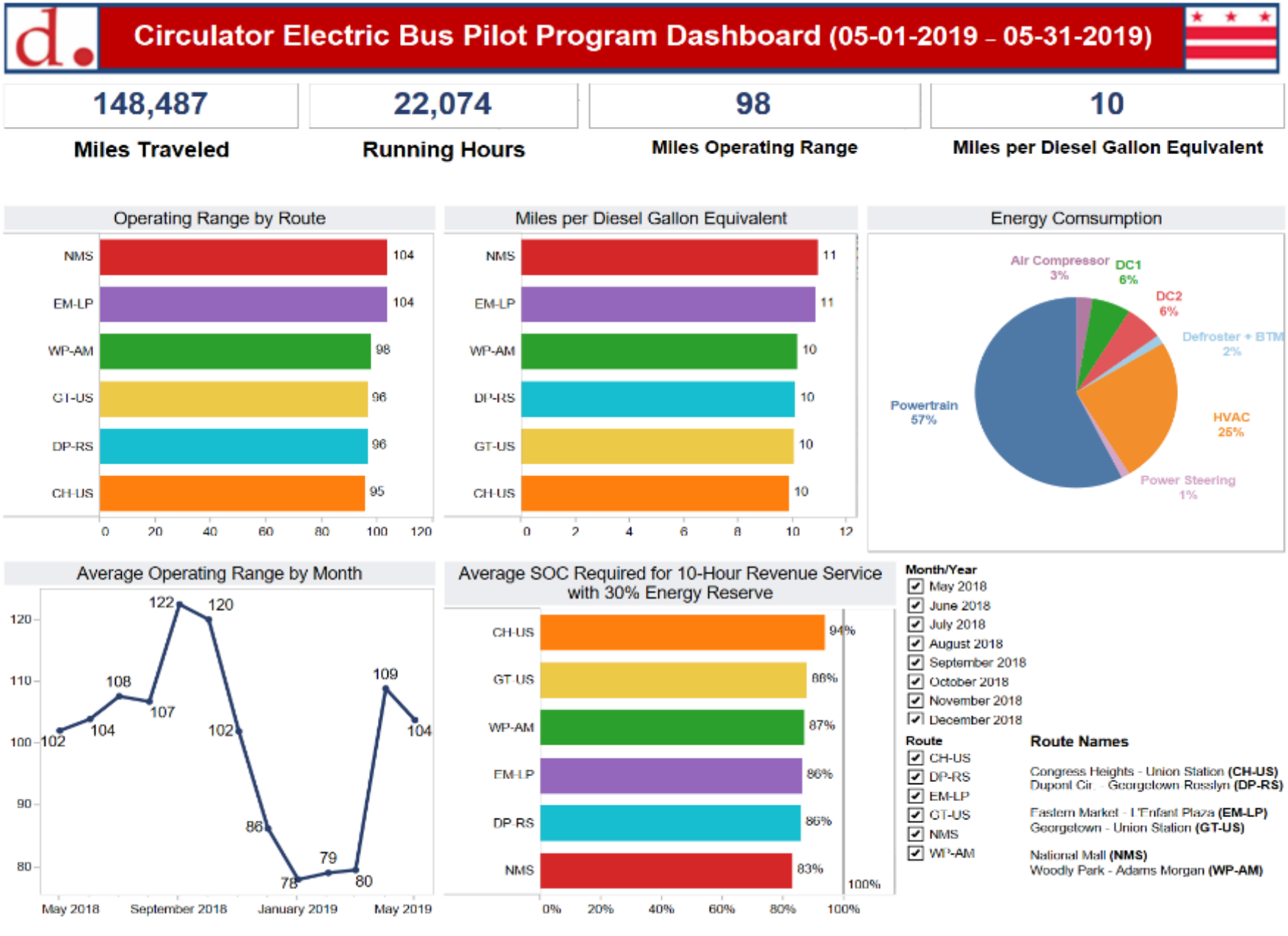
Initial Pilot Finding – Temperature's Impact



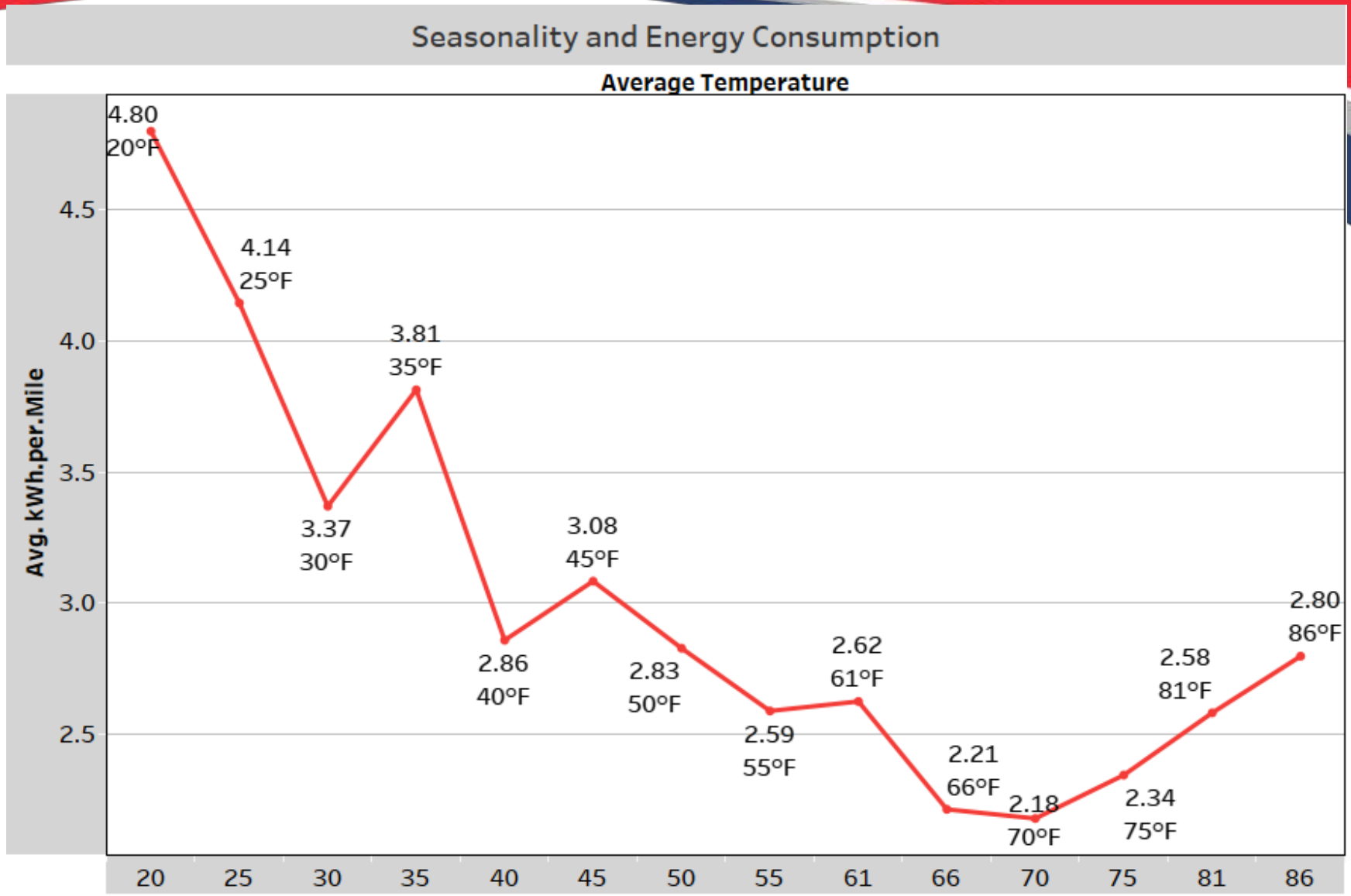
Initial Pilot Finding – MPDGE



Initial Pilot Findings – Dashboard



Tipping Point Temperature



Snow Events


Energy Consumed During Snow and Non-Snow Events
Avg. kWh.per.Mile
4.3
4.2
4.1
4.0
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
4.3
4.2
3.6
3.6
3.7
3.7
3.7
3.9
3.5
3.9
4.0
4.1
4.1
3.8
3.7
3.1
30
31
32
33
34
35
36
37
38
39
Tavg
Snow Event/Non-Snow Event
Snow Event
Non-Snow Event

OPPORTUNITIES AND LESSONS LEARNED

Lessons Learned

- Data collection and its implications are an evolutionary process
- Determine if you “need to” purchase electric buses or “want to” purchase electric buses
- Plan the procurement tool you will use
- Assemble a support team that understands the type of technology under consideration
- Ensure close coordination with the manufacturer
- Infrastructure installation is complex, ensure to work with your power company, environmental agency, and licensing division
- Electric bus acceptance is unique, ensure the expertise are there
- Carefully plan training for maintenance and operations staff
- Closely monitor charging infrastructure performance
- Plan for winter
- Carefully select the source of your data

Future Projects

Current Projects

Circulator Sustainability Plan

Electric Bus Procurement

d.

District Department of Transportation