Technical Appendix

Documentation of GHG Assumptions

For the Electric Lawn mowers:

- Model used: AFLEET Online (anl.gov) (US Department of Energy)
    - Department of Energy Tool
    - Electric lawn mowers run on electricity, but do not use any gasoline. This eliminates certain local air pollutants in our parks and communities. It also reduces noise pollution.
    - Data on hours from Department of Public Works – Parks Division. Estimated 120 hours per year per mower, so 1200 hours per year for 10 mowers.
    - Excel sheet attached: GHGcalcs_NewCastleCounty
    - Energy mix determined by PJM website: https://www.pjm.com/markets-and-operations

For Electric Leaf Blowers:

- Model used: AFLEET Online (anl.gov) (US Department of Energy)
    - Department of Energy Tool
    - Electric lawn mowers run on electricity, but do not use any gasoline. This eliminates local air pollutants in our parks and communities. It also reduces noise pollution.
    - Excel sheet attached:
    - Energy mix determined by PJM website: https://www.pjm.com/markets-and-operations
    - Annual Hourly Usage was estimated based on parks crew assumptions.

For Electric Fleet vehicles

- Model Used: www.fueleconomy.gov (US Department of Energy)
    - This model was used to compare Total GHG Emissions from an Electric Vehicle in the zip code 19720 and an Average New Gasoline Vehicle. The difference between the two was converted from grams/mile to metric tons/year.
    - Emissions reduced from the charging stations built to support these new fleet vehicles were not calculated because it was assumed the emissions reductions come mainly from the vehicles purchased.

Total GHG emission reductions were calculated in the Summary tab. For the mowers, leaf blowers, and EV Fleet, the EV emissions were subtracted from the gasoline powered vehicle emissions, then added to the emissions reductions from charging stations. This gave us emissions reduced per year. Then we multiplied those numbers by 5 and 25 to get magnitude of GHG Reductions from 2025 through 2030 and magnitude of GHG Reductions from 2025 through 2050.

New Castle County acknowledges that some of these estimates might contain errors, but they were put together with the best information and tools available.

These estimates also do not include the wind RECs the county purchased in our estimation of percent renewable energy.

- NCC procured a 3-year eREC purchase deal for wind-powered energy, equating to approximately 77% of the total required electricity at all county-owned facilities and 24,425,369 kWh per year.

Additionally, one of the locations for the charging stations, Appoquinimink Library utilizes rooftop solar, and all EV charging stations would run on renewable energy.