ELECTRIC VEHICLE CHARGING ORDINANCE

BERKELEY HEIGHTS ENVIRONMENTAL COMMISSION

ELECTRIC VEHICLES =

Plan Mindfully for the Future

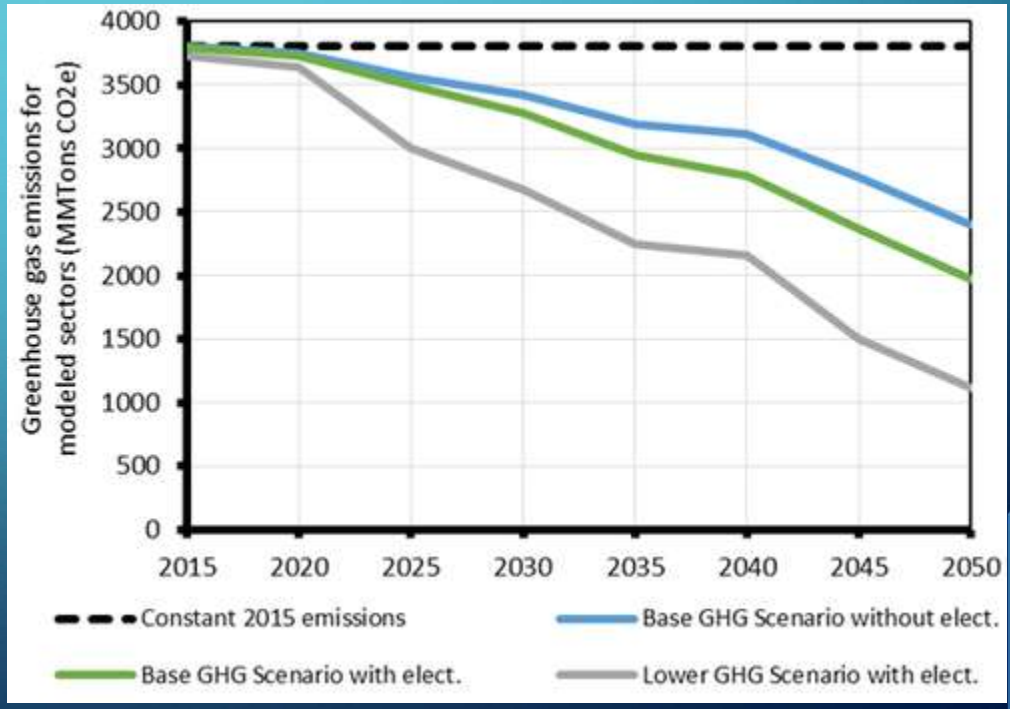
- Look at:
  - Climate and health impacts
  - State mandates
  - Future trends
- Enact measures that are:
  - Forward-looking
  - Cost-effective

Benefits of Electric Vehicles (EVs) from a Climate Perspective

- Climate – GHG Emissions Reduction
  - Direct/Tailpipe Emissions, Fueling
    - Nitrogen oxide (NO_X)
    - Carbon dioxide (CO_2)
  - Indirect/Lifecycle -
    - Petroleum extraction
    - Refinement/conversion to gasoline
    - Transport to gas stations

https://www.energy.gov/eere/electricvehicles/reducing-pollution-electric-vehicles

- Low Carbon Pathway with EVs



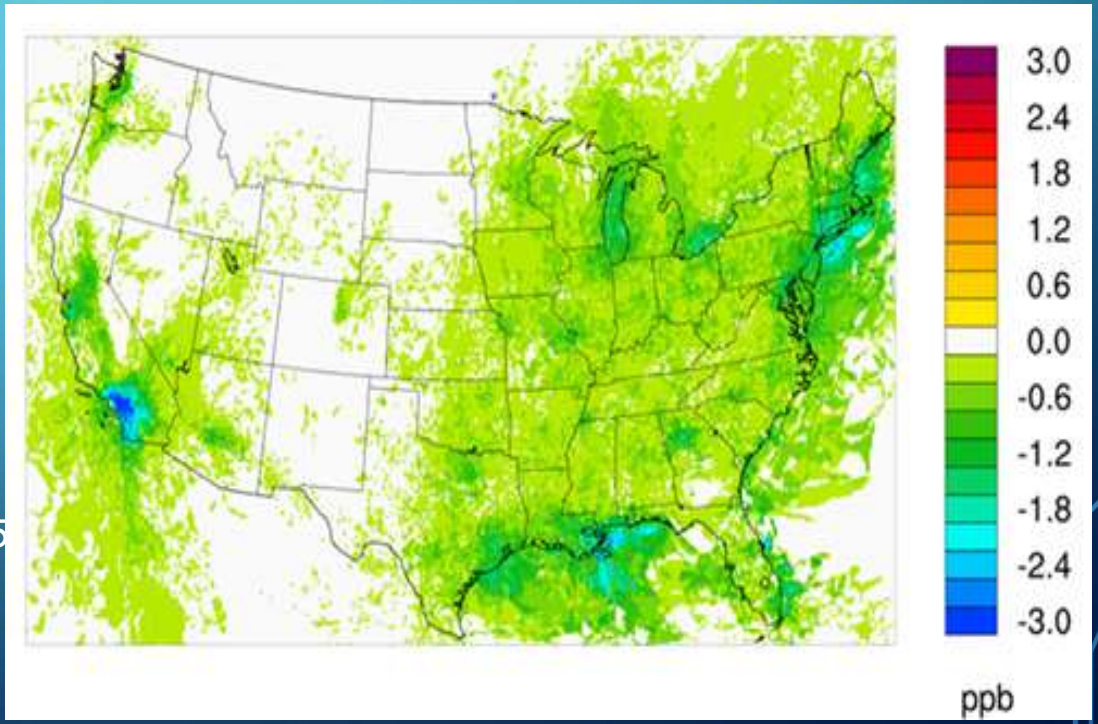
https://www.nrdc.org/experts/luke-tonachel/study-electric-vehicles-can-dramatically-reduce-carbon-pollution

Benefits of Electric Vehicles (EVs) from a Health Perspective

- Health
  - Reduce Smog in the Environment
    - Electrification lessens ground-level ozone
    - Reduces emissions of:
      - Nitrogen oxide (NO_X)
      - volatile organic compounds (VOC)
    - Lessens hidden costs - asthma
  - Net Benefit by Changes to Energy on Electric Grid
    - Offshore wind (7,500 MW by 2035 & solar
    - Not increased fossil fuels (oil, coal, and gas)

https://www.nj.gov/bpu/newsroom/2021/approved/20210415.html

NRDC Study Shows:



https://www.nrdc.org/experts/luke-tonachel/study-electric-vehicles-can-dramatically-reduce-carbon-pollution

NJ State Mandates

- S-2252 – Jan. 17, 2020
  - Gov. Murphy signed into law comprehensive legislation
- Codified goal of 330,000 registered EVs by 2025
- Goal of reaching 100% clean energy by 2050

https://www.nj.gov/governor/news/news/562020/20200117b.shtml

BPU Granted Authority to Establish EV Rebate Program for In-Home Vehicle Charging

- Incentivizes people to purchase electric vehicles
- Means the number of EVs will be growing in NJ and in Berkeley Heights in the near future
- Need to plan for this in our commercial real estate construction projects

https://www.nj.gov/governor/news/news/562020/20200117b.shtml

Future Trends for EVs and Hybrid Electric Vehicles (HEVs)

- JPMorgan Study (Oct. 2018) ("Driving into 2025: The Future of Electric Vehicles")
  - Phase-out of cars being powered solely by internal combustion engines (ICEs)
  - **By 2025, EVs and HEVs will count for 30% of all vehicle sales globally**
    - This means 8.4 million vehicles, or a 7.7% market share by 2025
    - Compare to 2016, when EV and HEV sales accounted for just under 1 million vehicles, or 1% of auto sales

https://www.jpmorgan.com/insights/research/electric-vehicles

https://www.businessinsider.com/tesla-car-dealerships-georgia-2014-9

How All of This Impacts Berkeley Heights

AS A PRACTICAL MATTER:

- More BH residents will own EVs in the future
- More non-residents/visitors to BH will drive EVs
- We want to attract residents and visitors, and accommodate their vehicle needs going forward
- We should prepare for this now

FROM AN INNOVATIVE LEADER VIEW:

- We will be implementing "Smart City" measures
- Other nearby towns are looking to us as an innovation leader by virtue of this ordinance
  - Morris Township
    - Improved upon its contents
  - Chatham Borough, Westfield
    - Looking to this ordinance as their model

Build Infrastructure Now, Save Costs Later

- According to our Township Engineer, "future-proofing" is the greatest concern for commercial construction
- Non-residential and multi-family parking facilities – new OR expansions
- Means installing wire conduits now, rather than later to save $$$
  - Will cost more $$$ to rip up pavement and install conduits at a later time
- A "pull wire" can be run through the conduit now, to allow for the electrical wiring at the time of expansion

https://xconomy.com/wisconsin/2015/05/28/neuwave-grabs-25m-to-amplify-overseas-sales-of-tumor-zapping-tech/attachment/pile-of-money-stock-image/

https://www.flexconduit.com/plastic-flexible-conduit-history/

Requirements for Minimum Number of EV Charging Stations

- Our Township Planner (from Phillips Preiss Grygiel Leheny Hughs LLC) has assisted with the drafting of this ordinance; reviewd by Township Engineer
- Figures based on experience of what is standard across the industry, particularly in NJ at this time
- Similar to figures that Chatham Borough has introduced to its governing body
- Morris Township enacted similar ordinance

Number of Parking Spaces Required	Minimum Number of Electric Vehicle Charging Stations Required

Proposed Ordinance is Forward-Looking, Cost-Effective, and Positions Us for the Future

- Ordinance Addresses:
  - Permitted locations for Level 1, Level 2, and DCFC charging stations
  - Design, installation, and general charging station standards (including a conduit requirement)
  - Signage for each charging station
  - Permitting and approval process
  - Restrictions and enforcement procedures
  - Training requirements for applicable municipal staff

Thank You

BERKELEY HEIGHTS ENVIRONMENTAL COMMISSION

EC@bhtwp.com