Op-Ed: Transit Electrification & Community Engagement in Philadelphia

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## Intro: Present Transit Plans & Community Perceptions

The city of Philadelphia is home to roughly 500,000 daily commuters via public bus transit,1 and in this present moment, planned changes are underway to drastically alter the ways in which Philadelphians access and traverse their city.

Local citizens were made aware of plans the Southeastern Pennsylvania Transportation Authority (SEPTA) initially laid out during the last Fall to redraw their transit network – the first such effort since SEPTA’s founding in 1964. During a hearing this January, Philadelphians voiced their frustrations at the imminent consolidation of the present 125 routes to 99.2 The new bus lines are designed to improve commuter wait times by streamlining the paths taken by busses and reducing the overall number of stops along the route – decisions that would also force commuters to alter how they navigate their city. Decisions made largely to the discontent of both suburban and urban commuters who felt shock and frustration at being subject to SEPTA’s choices and their lack of control in the matter. While SEPTA has claimed to be considerate of the vocal comments and criticisms of the people, it seems probable that they will change the bus routes as they deem necessary, which SEPTA CEO Leslie Richards partly attributes to the pending depletion of federal COVID-19 support, “We can make targeted changes, together, on our own terms, now … Or we can face the certainty in several years of being forced to make service cuts.”3

## SEPTA’s Zero Emission Playbook & Public Health

Concurrently, in a similar fashion to the rest of the nation, Philadelphia aims to reduce its carbon footprint and modernize its transit systems. SEPTA is amid a multi-decade effort to accommodate the replacement of their bus fleet with “zero emission” vehicles (utilizing a mixture of battery electric busses (BEBs) and Hydrogen fuel cell electric busses (FCEBs)); using several federal grants (primarily enabled via the Infrastructure Investment and Jobs Act) SEPTA has conducted various pilot programs and studies to examine the feasibility, logistic and technical challenges, and various costs across multiple fleet transition and equipment upgrade scenarios as detailed within their Zero Emission Playbook.4

Among the many prongs of this playbook, the subject of distributed charging infrastructure may be ripe for local government intervention and help address both the present reliability concerns of Philadelphian commuters, as it intersects with SEPTA’s presently stated network redesign schemes while furthering the city’s overarching goals of reducing harmful NOx, CO2 and other greenhouse gas emissions5 (e.g. SEPTA cites CO2 equivalent emissions for their diesel-electric hybrid busses and BEBs at 2,592 grams/mile and 622 grams/mile respectively); it should also be noted low-income/minority populations (who constitute a large portion of Philadelphians) are disproportionally more at risk of harm due to air pollutants.6

Within part of one of their studies, SEPTA modeled the on-route charging infrastructure needed to reliably support typical transit demand within their suburban and urban regions of service. One interesting note from the playbook is compatibility of a route assignment with BEBs is increased in scenarios that utilized *additional* charging stations *presently owned by non-SEPTA entities* at layover stations or along designated routes (thus achieving greater transit schedule reliability). This is where city government can intervene.

## Leveraging IRA Funding

Among its many facets, the Inflation Reduction Act of 2022 allows for the provision of federal funds to states and municipalities for both electric vehicle (EV) procurement and electric charging infrastructure installation. Now, city government can step in to request these funds via the Clean Heavy-Duty Vehicle Program.7 If granted, these funds could be used to organize a coalition of city council members, SEPTA representatives, and community members to strategically fund and plan the installation of distributed, on-route charging stations based upon routes designed to best satisfy the needs of the community and support the dependability of SEPTA’s growing bus fleet. This method allows for flexibility in implementation (funding structure, infrastructure choice, scope, etc.). For example, should the city prefer to invest in its own EV charging infrastructure, funded assets could be loaned to SEPTA for use: the precedent exists in the form of subway station assets within the Broad Street Line and Market Frankford Line.8 Of course, oversight (likely by the Office of Transportation, Infrastructure, and Sustainability (OTIS)) should be present to ensure the impact of the coalition meets benchmark criteria (commuter satisfaction, safety, emissions reduction, etc.).

## Recounting Potential Benefits

Permutations of this are worth exploring because they could help expedite the transition of SEPTA’s diesel-hybrid fleet to BEBs, paving the way for a transit system that is better equipped to support the reliable use of the existing BEBs and the use of those acquired in the future, which as previously stated generate roughly a quarter of the emitted CO2 as their hybrid counterparts. Furthermore, because the funds would be rendered following the decisions of this coalition, the citizens of Philadelphia would directly benefit from the increased agency in determining the structure of their city’s transit network.

## Citations

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