



Comments on Draft Energy Master Plan Submitted to the Board of Public Utilities

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New Jersey Future hereby submits comments on the Board of Public Utilities' draft Energy Master Plan (EMP), as well as some supporting material elaborating on the relationship between greenhouse gas emissions, travel behavior, and land-development patterns.

As of 2015, the transportation sector is responsible for 46 percent of New Jersey's total greenhouse gas (GHG) emissions (from [NJDEP Greenhouse Gas Emissions Inventory](#)). GHG emissions from the transportation sector derive from the movement of people and goods by vehicles that generate GHG emissions as a byproduct of their operation. Total emissions is the product of total vehicle miles traveled (VMT) and the amount of GHG emitted for each mile of movement (emissions per mile). Total emissions can be reduced by reducing either or both of these factors. For example, Goal 1.1.1 of the EMP calls for the deployment of 330,000 light-duty electric vehicles on the road by 2025. If achieved today, this would represent 5.4 percent of New Jersey's current fleet of just over 6 million vehicles and hence a 5.4 percent reduction in GHG emissions from vehicles; we could achieve identical GHG savings by reducing New Jersey's per-capita daily VMT by 5.4 percent, from 23.9 miles down to 22.6 miles, a seemingly modest reduction.

Electrification of the vehicle fleet and the adoption of clean energy sources are strategies for reducing the second factor, emissions per mile. Our comments focus largely on reducing the first component, total VMT.

As noted in the draft EMP, reducing vehicle-miles traveled (VMT) is an effective approach to reducing greenhouse gas (GHG) emissions "long before a critical mass of vehicle electrification takes hold." Yet, Section 1.2 of the EMP, "Decrease Vehicle Miles Traveled," lacks sufficient detail to result in meaningful impact." This section is short on hard targets and on state-level interventions and instead mostly relies on private actors to do the right thing. There is a lack of recognition of the many ways in which state agency decisions and actions can and do influence travel behavior. Hard targets and state-level interventions, as provided in Goal 1.1, are necessary to ensure VMT reduction is achieved, as surely as they are needed to track progress toward cleaner energy sources and vehicle electrification.

VMT reduction has ancillary benefits that make this approach attractive both for GHG emission reductions as well as to improve the overall health and vibrancy of NJ's communities. Lower VMT is associated with more compact developments that have quality public spaces leading to local economic development and economic growth, reduced traffic congestion, and public health and safety improvements. In addition, this sort of compact growth reinforces the goals of the EMP by encouraging the development of duplexes, tri-plexes, and mixed-use buildings that are more energy efficient than single-family and other standalone structures.

New Jersey Future submits the following five recommendations to reduce GHG through a reduction in VMT:

1) Establish a statewide target for reduction in vehicle miles traveled (VMT).

- Set a concrete, quantitative target for VMT reduction, to parallel the setting of targets for electric vehicle (EV) adoption. California is one state that realized that it would not be able to meet its GHG reduction goals by relying solely on electrification, and through the California Air Resources Board, targeted a 15 percent reduction in VMT by 2050.
- Start measuring VMT in a way that allows it to be linked to the driver, rather than to the road segment where the travel is occurring. The link between land-use patterns (density, mix of uses, connectivity of the street network) and travel behavior (how much and how far people need to drive) would become much more obvious if VMT can be linked to where the driver lives. This can be accomplished by collecting odometer readings when vehicle registrations are renewed, as is the practice in Pennsylvania, and use vehicle registration addresses to associate annual VMT with where the vehicle owner lives. Tracking and measuring VMT at the vehicle level would also have the ancillary benefit of creating the opportunity to tax it. As vehicles become more and more fuel efficient, the gas tax becomes an increasingly unreliable source of revenue for paying for transportation projects, as noted in Goal 1.1.1 of the draft EMP. Taxing VMT instead of (or in addition to) fuels would ensure that EVs and other highly fuel efficient vehicles continue to pay their fair share of the funds required to build and repair the roads that all vehicles are using. EVs still contribute to traffic congestion, road deterioration, and other things the gas tax was designed to raise money to address, even if they're not burning gasoline, so drivers of those vehicles should still be required to contribute to the management of the road network.
- Track separately how much VMT is attributable to local delivery trucks, to monitor how changes in shopping habits (more people ordering more things online rather than shopping at brick-and-mortar locations) may be contributing to overall vehicular travel, and more local air pollution.

2) Establish statewide targets for increasing transit ridership and for the percent of trips that are taken by transit.

- Goal 1.1.6 notes that public transportation moves people more efficiently than private automobiles do, from the standpoint of emissions per passenger-mile. The language about

transit's ability to reduce travel by private vehicle should be repeated and amplified in Section 1.2.

- The electrification of buses should take precedence over the electrification of light-duty or passenger vehicles, followed closely by the electrification of medium- and heavy-duty vehicles. New Jersey's environmental justice communities are the most likely to experience the negative effects of air pollution from trucks and buses and the least likely to purchase electric vehicles.
- Include a directive to increase transit ridership by improving existing transit service and by exploring opportunities to create new transit service.
- Set a concrete, quantitative target for increased transit ridership, as well as one for increasing the share of trips taken by transit. The description of the goal could include language about increasing development densities around transit stations, so as to increase the number of people for whom transit becomes a viable travel option.
- Section 1.2.2, about NJDOT's Transit Village program, should be strengthened to encourage a more proactive state agency role. NJDOT and New Jersey Transit could offer planning assistance to any municipality having neighborhoods within a half-mile radius of a transit station and could actively encourage all such areas to implement transit-oriented development (TOD) in their station-adjacent areas. Participation in the Transit Village program is voluntary and relies on a municipality approaching NJDOT about getting involved, rather than the other way around. Currently, only 33 transit-hosting municipalities participate in the program, compared to 153 municipalities that host at least one of the state's 244 transit stations (rail, ferry, and major bus terminals) and another 54 municipalities that do not host a transit station themselves but contain some neighborhoods that are within walking distance of a transit station in a neighboring municipality. Efforts to increase transit ridership and to improve the pedestrian environment and the mix of land uses around transit stations ought to target *all* of these areas, not just the few that seek Transit Village designation.

3) Develop land-use strategies designed to reduce VMT, and align state rules, regulations and infrastructure investments in accordance with these strategies.

- The key state agencies involved in preparing the draft EMP appear to be the Board of Public Utilities (BPU) and the Department of Environmental Protection (DEP). For the VMT section, input should also be solicited from (and guidance issued to) the Department of Transportation (DOT), the Department of Community Affairs (DCA), and the Economic Development Authority (EDA), at a minimum. These agencies make many decisions that influence what gets built where and the transportation network relative to these developments. In general, these key agencies should be asked to review all of their programs with the goal of identifying how their decisions affect land development patterns and travel behavior and how they can be aligned to encourage development that reduces the need to travel by private automobile.
- Taking a cue from the Urban Transit Hub Tax Credit (which began in 2008 and was later subsumed into another program when the state's economic incentive programs were consolidated by the Economic Opportunity Act of 2013), the Economic Development Authority

could tailor all its corporate recruitment programs to include incentives – or even requirements – for award recipients to locate in transit-accessible locations, so as to increase the number of employees who would be able to commute via transit.

- DOT could revive its “[NJFIT](#)” (Future In Transportation) program, the purpose of which was to encourage municipal leaders to think about their street networks more holistically and plan for increased travel demand from new developments by improving connectivity in the local network, rather than reflexively locating new development along state arterial roads and then relying on DOT to widen those roads to facilitate access to new developments.
- DOT could deny municipalities access points to state-maintained roads (by refusing to create driveways, traffic signals, etc.) for projects that lack sidewalks and would be accessible only by car. It could also use access points as leverage to encourage municipalities to build connectivity into their local street networks, by declining to enable access to state-maintained roads for projects that inhibit network connectivity by relying solely on access from the state road and failing to provide multiple access points to the project site from multiple directions.
- DOT could make municipal aid contingent on recipient municipalities building more connectivity into their local street networks, which has the benefit of offering multiple route options and thus keeping some local trips off of the state highway network. In general, municipalities should be incentivized to make their local networks more grid-like, which facilitates walking, creates multiple direct route options, shortens average trip lengths, and disperses traffic, in contrast to hierarchical, branching networks that offer only circuitous routes that force most trips to be taken by car and which further tend to funnel most car trips onto a few major arterial roads.
- Section 1.2 should mention the other benefits of development patterns that reduce the need to travel -- reduced need for road construction and widening; lower per-capita pavement areas and hence lower per-capita road maintenance costs; less time wasted in congestion on state highways; dispersion of traffic onto local routes where lanes are narrower, speeds are lower, and turning maneuvers are less complicated, resulting in improved safety for pedestrians and drivers alike. These things were important before anyone was talking about electrifying the vehicle fleet, and they haven't gone away. And none of them would be addressed by simply replacing all gasoline- and diesel-burning vehicles one-for-one with electric vehicles.

4) Offer incentives and assistance to local governments to create plans and zoning regulations that discourage spread-out, car-dependent sprawl and that instead foster development that offers travel options beyond the use of private vehicles.

- In Section 1.2.1, the statement that “Municipal land use law can be adapted to further encourage walkable and bike-able communities” is a significant understatement. Land-use decision-making is done at the municipal level, but this is because the state has explicitly delegated this authority to municipal governments. Municipalities have precisely as much control over land-use decisions as the state says they have. If the state legislature chose to do so, it could impose restrictions on municipalities’ latitude to prescribe certain land-use types and discourage others. Minneapolis recently banned single-family zoning, and Oregon’s legislature

just passed a bill to do the same in cities over a certain size. This may be an ambitious step for New Jersey, but the state could constrain municipalities from zoning for single-family detached housing in areas around transit stations or near existing downtowns or major employment centers. This way, the statewide goal of reducing vehicular travel is not undermined by local decisions that limit the number of households that can live within walking distance of transit or that force residential neighborhoods to be located beyond walking distance to jobs and retail.

- DCA could make tax credits and municipal aid programs like the Neighborhood Revitalization Tax Credit contingent on the receiving municipality's willingness to encourage mixed-use zoning and to increase the diversity of its housing stock.
- DCA -- and other state agencies -- could work with local governments to change their master plans and zoning to encourage more compact, walkable development in the future, similar to the way Goal 1.1.2 calls for the creation of an interagency "Partnership to Plug-In" to promote the building-out of electric vehicle charging infrastructure. If interagency coordination can be effective at getting municipalities to think about and plan for electric vehicle charging infrastructure, it can be effective at getting them to think about and plan for higher development density and mix of uses, a greater variety of housing types, and better pedestrian and biking infrastructure, all of which can reduce the need to drive, whether or not the vehicle is electric.
- In the section of the EMP on Strategy 4, "Reduce Energy Consumption and Emissions from the Building Sector," include a recognition that certain types of housing are inherently more energy-efficient than others. Specifically, townhouses, duplexes, apartment buildings, and other types of attached housing save money on heating and cooling costs by sharing walls, floors, and ceilings with other units in the same building, reducing the per-unit number of exterior-facing surfaces through which heated or cooled air can be lost to the outside. As such, this section could include a call for the removal of barriers to construction of attached housing types, up to and including the possibility of removing all zoning that prohibits the construction of anything other than single-family detached housing.

5) Design places where as much attention is given to alternative modes of transportation, including biking, walking, and public transit, as is given to automobiles.

- Incentivize municipalities to adopt "complete streets" policies that institutionalize the treatment of non-motorized transportation as being on the same level of importance as vehicular travel. NJDOT engineers can be trained to consider non-vehicular users of streets and sidewalks when designing new roads or repairing existing ones, so as to create opportunities to improve and expand pedestrian and bicycle facilities throughout the state, particularly in places where development densities are high enough that multiple land use types are already located within walking distance. In general, DOT should seek to change its internal culture from one focused on the movement of *vehicles* to one focused on improving accessibility for *people* (which can be accomplished by bringing destinations closer together as effectively as it can be accomplished by increasing vehicular speeds while traveling between destinations).

- Create and institutionalize metrics for measuring the extent of the state's pedestrian and bicycling infrastructure, including sidewalks, bike/pedestrian paths, and bike lanes, similar to the way NJDOT already maintains an inventory of the state's roads.
- Create and institutionalize metrics for measuring pedestrian and biking activity. Anonymized cell-phone location data offers the possibility of tracking pedestrian flows, just as it facilitates the collection of data on vehicular traffic speeds and volumes. More information about where people are or are not walking should provide more insight into what kinds of development characteristics make a place "walkable" and what kinds of characteristics discourage walking.
- NJDOT should re-evaluate its standards for lane widths, vehicle speeds, curb cuts, etc. in places where a state road serves as a town's main street. In such places, pedestrians should be prioritized over vehicles, and pedestrian safety and access should take precedence over vehicular throughput.
- Acknowledge the health benefits -- both physical and mental -- of development that allows people to spend less time sitting alone in a car and more time walking or bicycling and interacting with their fellow citizens in public spaces.