# TECHNICAL MEMORANDUM

Model Mobility Strategy
Patricia C. Tice, PE, AICP, LEED AP
President, CREWS, LLC
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***Purpose***

The State of Florida has been considering a statewide mobility fee as one strategy to provide for adequate transportation services in lieu of the concurrency system that has been attempted for the last several decades. It is clear that the concurrency system has had significant unintended consequences, despite its original intentions to maintain quality transportation conditions. Ultimately the primary issue that transportation concurrency has failed to address is the orderly transition between rural towns to urban cities. The only thing that concurrency was able to guarantee was a congested town and higher development costs in urban areas. It had no tools to support the transition from a vehicle oriented town to a multimodal city. Indeed, concurrency indirectly required that densities remain low to keep the traffic intensity at levels supported by the available roadway capacity. The flight of capital investment fed the disinvestment in the inner cities and first tier residential areas. Many traditional towns throughout Florida were initially laid out in an urban form with pedestrian scale features that were conducive to serving multiple transportation modes. This form and its benefits can be reclaimed.

***Two Pronged Strategy***

If a community is aiming to successfully evolve from a driver oriented town to a multi-modal city, two components are necessary. **First, the urban street form and pedestrian scale must be regained**. Transit systems cannot thrive in places where pedestrians are not welcome, because the moment riders disembark, **all** transit users are pedestrians.

**Second, the transportation cost for a development should be tied to the quantity of its vehicular use, preferably on a time-value basis**. Many high speed, long distance roadway connections in Florida have their own additional cost through the toll system and therefore do not need additional financial penalty. If the policy desire is to shift people to alternate modes in congested areas, then time should be the metric to use for financial accountability. As an added benefit, tying financial consequences to vehicular time will better approximate the impact of greenhouse gas emissions and fuel consumption and therefore is an appropriate strategy to meet the new GHG strategy requirements for all comprehensive plans. The greenhouse gases emitted may be different for long distance, high speed travel than for shorter congested travel, but using time as the metric captures both effects as well as the social impacts of “being stuck in a car.”

***Urban Form Strategy***

To address the first component, a community should generate a plan for land use and transportation integration to best serve that community. Ideally, this well integrated system should have the following characteristics:

- Environmentally important lands should be clearly identified and strongly protected as a system.

- Within urban areas, the traditional roadway functional classification hierarchy should be respected with truly major arterials spaced approximately one (1) mile apart, collectors spaced around ½ mile apart and local street systems connecting to these systems frequently and in all cardinal directions. In essence, a theoretical future roadway network is determined by the community as a framework for future development.

- Transportation connectivity should be strongly encouraged with pedestrian connections more frequent than roadway connections. Strategies to open up additional connectivity within existing developments should be aggressively explored. In a traditionally suburban area, one inexpensive strategy is to offer property tax credits or waivers for pedestrian easements and subdivision wall openings so that internal pedestrian paths can be connected to external pedestrian or trail systems.

- Mixed-use development should be encouraged wherever possible and transit supportive elements (shelters, bus stops, park & ride lots, etc.) should be as common to development as parking spaces or garages. Transit amenities should be addressed at the time of development and all projects should provide for the use of transit at an appropriate level.

- All streets should be constructed as complete streets including bicycle amenities consistent with the needs of the biking community within that city and shaded pedestrian paths on both sides of all roadways.

- Elementary and middle schools and parks should be co-located at the centers of neighborhoods to best serve the residents in those neighborhoods and should be sized accordingly. High Schools would be best located on collectors or arterials, but should have enhanced bicycle and pedestrian connectivity as well. Bicycle and pedestrian training should be as common as emergency services training in all grades. Many communities have bicycle clubs that would be delighted to do an presentation at a school to talk bicycle safety and use.

When an overall plan is generated, new development should be required to provide all connections to the roadway network that are necessary to serve that project and to provide the roadway connections envisioned to occur on or adjacent to the property to be developed. Credits toward a mobility fee should be provided for construction of any of the planned roadways as well as transit related improvements. The jurisdiction may cooperate with the acquisition of the land needed for any planned roadway connections, and could be reimbursed by the developer.

***Mobility Fee***

The second component of the mobility strategy is to generate a mobility fee for all new development that is tied to the amount of time the users of that development are expected to spend in their vehicles in the year the project is completed (similar to concurrency). The available FSUTMS/Cube models can be modified with a small post-processor to produce average trip time and vehicle hours traveled at a zonal level. To calculate the amount of fee per vehicle hour, a model would be generated for the plan horizon year that includes all of the transportation facilities and systems needed to serve the population expected in the horizon year. This model would be compared to an existing conditions model and the difference in vehicular travel time could be measured between the two scenarios. The fee per hour would be scaled to pay for the additional transportation connections, construction and capital purchases that would need to be generated by the horizon year to serve the projected population and land use.

Tying this fee to vehicular time would encourage projects that are transit supportive in congested areas and provide a dedicated capital funding source for whatever roadway and transit projects are needed to provide adequate mobility in that horizon year. The fee per vehicle hour would be calculated by dividing the estimated cost by the change in total daily vehicular travel time between the current year and the horizon year.

This time can be calculated in three ways:

- For small or typical projects, a base model projection for the entire area would be generated using the programmed network. Interim model runs could be generated using 5 year horizons. An average travel time per trip would be calculated for each zone within the model. The developer could then look up the average travel time per trip and multiply that by the anticipated trip generation of the proposed project to arrive at the amount of vehicle time used per day. Reductions in vehicle use could be provided due to available transit or documented pedestrian/bicycle usage in that area.

- Projects that believe that complementary land uses are available at closer locations could use a GIS analysis to identify average trip lengths to those complementary uses.

- Larger projects could be added to the model directly with their own internal roadway network and land use mix to assess their average trip time, and any impact the project will have on the overall average time per trip estimated by the model.

Factors that would reduce the travel time, and therefore reduce the mobility fee, would include:

Density
Proximity to the center of the area
Interconnectivity to the local street network
Land use mix/balance
Specific congestion management improvements
Additional roadway network interconnection (outside the project)

Factors that would increase the travel time would include:

Remote locations
Single use areas
Low densities
Poor roadway network connectivity

Travel time is a fairly easy concept to grasp. Time in vehicle means time away from families, work and other social connections. Furthermore, for most communities, transit is likely to initially mean a bus system and if the roadways are truly congested, transit becomes no more attractive than a passenger vehicle because both are stuck in the same traffic.

There are a few studies that have hinted that there may be a mental travel time budget that is unconsciously deemed as acceptable within an area and across modes. If transportation choices like transit, bicycle or walking can fit within this mental budget in a way that is less environmentally costly there is a much better chance that people will choose to utilize those modes.