SB 360 Article Series: Factors to be Considered in Transitioning from a Road Impact Fee to a Mobility Fee

Contributing Authors: Steven A. Tindale, P.E., AICP
                    Robert P. Wallace, P.E., AICP
                    William E. Oliver, P.E., PTOE
                    Marlo Chavarria

Disclaimer: The contents of this article represent thoughts gathered from the experience of engineers and planners at TOA who are practitioners of growth management in Florida. TOA is not a law firm, and the contributors are not attorneys; therefore, the contents should not be considered legal opinions or advice.

Purpose/Background/Overview

The purpose of this paper is to focus on the transition from a transportation impact fee to a mobility fee and is intended for a more technical audience. To understand that transition, it is helpful to review the history and basis for transportation impacts fees in Florida.

Overview of Impact Fee History

Impact fees, which have been in place in Florida for the last 20 years, are a charge made to new development that is equivalent to the cost for construction or expansion of off-site capital improvements necessitated by and of benefit to the new development. These fees, unlike taxes, must meet the “rational nexus” and “rough proportionality” tests. Rational nexus requires that there be a reasonable connection between the “need” for the additional facilities and the new development and that the new development benefit in some way from the new facilities. Rough proportionality requires that the calculation of the fee be based on the approximate amount of system it consumes—the new development cannot be charged for more infrastructure than it will consume.

Impact fees can be, and historically have been, charged to fund the capital infrastructure necessary to support services such as libraries, parks and recreation, schools, fire and emergency medical services, law enforcement, government administration, correctional facilities, public utilities, and transportation. While many communities have adopted one or more impact fee programs, this paper focuses specifically on the transition from a transportation impact fee to a mobility fee.

In Florida, 49 of 67 counties have adopted transportation impact fees. Most of these fees are calculated on the basis of roadways and sidewalks only and do not consider other modes. Only a few Florida communities (i.e. Broward County, the City of Aventura, and the City of Destin) have considered a multi-modal approach or have based their transportation impact fee calculation on the provision of transit services. As communities consider the need to provide increased mobility options, interest has shifted away from roadway-based transportation impact fees to a multi-modal fee that accounts for roadways, transit, and bicycle/pedestrian facilities.

SB 360—Mobility Fees as a Replacement for Transportation Concurrency

The passage of SB 360, also known as the Community Renewal Act, on June 1, 2009, created a requirement that the State “evaluate and consider” a mobility fee concept to replace the existing transportation concurrency system. The fee is to “provide for mobility needs, ensure that development mitigates its impacts on the system in approximate proportionality to those impacts, fairly distribute the fee among the governmental entities responsible for maintaining the impacted roadways, and promote compact, mixed-use, and energy-efficient development” (Section 13(1)(a), (b) and (2), F.S. Chapter 2009-96). Irrespective of whether concurrency (and all it entails) can, or should, be replaced by a fee, this paper explores the differences between a traditional roadway transportation impact fee and a mobility fee and addresses factors to be considered when transitioning to a multi-modal fee.

Recently, the Center for Urban Transportation Research (CUTR) at the University of South Florida reviewed the mobility fee concept for the Florida Department of Community Affairs (DCA) and published interim documents.
Overview of Asset-Based Concept

Service Standard

To provide a basis for an asset-based mobility fee, it is important to consider current practices related to transportation impact fees and identify factors that will influence the transition from a roadway-based calculation to a multi-modal calculation that takes into account all modes (e.g., roadways, transit, and bicycle/pedestrian facilities).

Transportation impact fees primarily have been roadway-based in terms of the impact fee formula. The fees have been tied to an adopted level-of-service (LOS) standard that measures the average speed of free-flowing traffic in a given community on the functionally-classified system. Communities typically adopt a roadway LOS standard (ranging from LOS “A” to LOS “F”) pursuant to the FDOT’s Quality/Level of Service Handbook. This standard is used to estimate average roadway capacity as an input variable in the impact fee equation. All else held constant, the higher the adopted LOS standard (higher average speed), the higher the transportation impact fee.

The mobility fee calculation can be based on LOS for the roadway component, consistent with roadway-based transportation impact fees. The transit component LOS standard can be measured and evaluated through the use of guidelines provided in the Transit Cooperative Research Program’s (TCRP’s) Report 100, Transit Capacity and Quality of Service Manual. These guidelines include variables such as reliability of service, service headways, travel time, system coverage, accessibility, and vehicle capacity that quantify the level of transit services being provided. The transit LOS, similar to roadway LOS, will be translated into person miles of travel (PMT) for purposes of calculating the transit component of the mobility fee with system capacity taken into account. The bicycle/pedestrian component typically is accounted for in the roadway-based calculation since most communities add sidewalks and bicycle paths as part of a roadway widening or new construction project. Therefore, there is no need to develop a separate level-of-service assessment or fee component calculation for bicycle and pedestrian facilities.

Asset-Value Concept

The asset-based methodology has been implemented in impact fee programs throughout Florida. Consumption-based impact fees rely on an asset-based methodology. The concept behind these consumption-based fees is that new growth is charged only for the value of the assets consumed,
and if the impact fees are used to construct new assets, the proof of benefit test is satisfied.

Using parks and recreation as an example, the assets included in the impact fee are generally land, buildings, recreational facilities, and equipment. If the value of the existing assets averages $500 per person, and the future value per person remains equal to or greater than $500 per person, then new growth will receive the proper benefit and is being charged fairly. Under this scenario, the mix of the assets (land, facilities, buildings, and equipment) can change as long as the value of the assets remains at or above the value of existing assets (in this case, $500 per person). For example, if impact fees were initially spent to purchase park land used by a community and then later used to construct playground equipment, the mix of assets will have changed; but if the value remains equal to or greater than $500 per person, the proof of benefit and proportionality is satisfied.

Using the logic of the parks example, the asset-based approach can be applied to the multi-modal assets, including the value of all roadway, transit, and bicycle/pedestrian facilities. Initially, for most communities, the total value of the assets will be heavily weighted towards roads. However, as a community urbanizes, the emphasis of future transportation system improvements shifts towards increasing the share of non-roadway assets within the overall mobility inventory.

The asset-based concept is developed by estimating the total original cost of existing transportation assets, including lane-miles of roadway, urban interchanges, bridges, buses, transit centers, transfer centers, bus shelters, bus stops, rail and bus rapid transit (BRT) facilities (if any), miles of bicycle paths, miles of sidewalk, and multi-use trails. Of these mobility assets, the roadway asset traditionally has represented most of the overall value, given the number of lane miles and the unit costs to construct a lane-mile of roadway.

For illustrative purposes, using a sample county with which TOA has worked in the past, the adopted transportation impact fee for new development was approximately $500 per person mile of travel (PMT) consumed on the county’s roadway network; however, the current asset value per PMT is approximately $1,100 (excluding interstate and toll facilities). The $500 cost per PMT represents a conservative estimate of the incremental cost of a typical lane widening or new road construction project. The typical project cost excludes any sample projects that have expensive right-of-way acquisition and unique construction features (drainage, utilities relocation, mitigation costs) that would inflate the overall project cost. As such, the County is charging new development at a rate that is 45 percent of the actual present day value of the existing system. The rate of $1,100 per PMT represents an “upset limit” that likely would not be charged to new development because it would impose a single-family impact fee of approximately $26,000 per unit. This demonstrates that the currently-adopted fees are conservative and inadequate to generate the revenues necessary to fully replace the infrastructure consumed by new development.

Using the same example, the asset value of transit facilities, based on the existing inventory of buses, stops, and shelters, is approximately $1 per PMT. This equates to 1/1,100 of the roadway asset value per PMT. Figure 1 on the following page presents a graphic depicting a scenario with a primarily roadway-based mix of assets. The figure shows that the current asset value reflects primarily a roadway-based transportation system, given the tremendous historical investment associated with accommodating single occupancy vehicle travel.

Again, using this example, the asset value of transit facilities, based on the existing inventory of buses, stops, and shelters, is approximately $1 per person mile of travel, or 0.1 percent of the existing transportation asset. The current transit system consists of local fixed-route services, but planning efforts are under way to support bus rapid transit and light-rail services; those services have not been realized to date. The impact of such a significant level of transit investment would result in a transit infrastructure accounting for approximately 4 percent of the total transportation asset value.

A middle ground approach, given the uncertainty of such significant advancements to transit within the mobility-fee planning horizon, is to base the transit portion of the fee calculation only on planned new fixed-route services to serve anticipated growth (which involves adding new buses, stops, and shelters). Under this alternative, the transit share of the total transportation asset value would increase from 0.1 percent to 1 percent. The “mobility” fee calculation, then, will not create a significant change in the order of magnitude of existing roadway impact fees by including transit assets and, therefore, will not generate significant additional revenues. The mobility fee will, however, provide for flexibility in investments between transportation modes and create the opportunity for re-allocation of the total value of the transportation asset.

Likewise, the value of existing sidewalk and trail facilities is similarly insignificant compared with the existing roadway asset. In this example, the existing sidewalk, bicycle, and trail facilities account for approximately 2 percent the total transportation asset, which is within a typical calculation margin of error. As mentioned previously, the roadway
component incorporates, by valuation of the existing system, the cost associated with bicycle paths/lanes and sidewalks.

It is generally not advisable to impose a separate impact fee, because a separate fee would necessarily be very low in order to survive the two-pronged legal test, due to the limited value of the existing non-roadway assets.

**Asset-Value Concept Offers Greater Flexibility**

While some jurisdictions may elect to spend a small component of roadway impact fee revenues on transit facilities, this is usually limited to the percent mode share of total travel expected to be achieved by these facilities. In all but the most mature multi-modal habitats, the combined mode share of non-roadway modes rarely exceeds 5 percent of total travel demand, thereby limiting the defensible use of roadway impact fee revenue to a relatively small portion of the total.

By using an asset/availability approach as the basis for both the roadway and non-roadway components of a mobility fee, the implementing agency can show that the charge to new development for the bundle of transportation assets does not exceed the “upset limit” on a per-vehicle or person-mile-of-travel basis, even though the mix of assets in terms of value may transition from a primarily road-based asset to a more multi-modal system over time based on the priorities of the jurisdiction.

Typically, as a community urbanizes and experiences new growth, there will be additional demands on the transportation system. Communities traditionally have relied on construction of new lane miles of road as a solution to mitigate these impacts and maintain existing levels of service. As roadways become more congested, especially during peak hours, a more balanced approach is necessary to maintain an acceptable level of mobility. In Florida, for example, densely-populated urban centers such as Tampa, Miami, and Orlando have substantial local bus services and are discussing transitioning to BRT and even light rail in peak travel corridors.

As the transition from a roadway-based to a multi-modal transportation system occurs, the value and composition of the transportation system changes, although the roadway asset remains that most valuable part of the system. Figure 2 presents the future mix of assets that will result from the transition current roadway asset to “Mixed-Asset” fee.
transition to a multi-modal transportation system over a longer-term period for a system that will be enhancing its local fixed-route service only. As previously noted, the transit share of the transportation asset value could be higher if greater investments are made in premium transit services (BRT and light rail). The multi-modal approach also creates opportunities for alternative travel patterns that shift traffic away from peak travel, as well as for less dependency on the single occupant vehicle as the use of public transportation increases.

**Determination of Transportation System Asset Value**

The roadway component of the total transportation asset includes the value of all City-, County-, and State-classified roadways as well as Interstate and toll facilities, urban interchanges, and bridges in the jurisdiction. Figure 3 presents a flow chart of how this part of the mobility fee calculation is completed. The unit cost per centerline mile of roadway and for interchange and bridge facilities can be obtained from the FDOT’s Long Range Estimates System (LRE), which provides planning level costs for typical roadway projects. It also would be prudent to compare LRE costs to recent bids in the jurisdiction for State roadways and to other planning-level cost estimates developed for Five-Year Capital Improvement Plans. The transit component of the total asset includes the value of all transit buses, bus stops, bus shelters, park-and-ride lots, transfer stations, and transit stations in the jurisdiction.

The unit cost for each asset can be estimated using FDOT’s Transit Costs and validated with recent asset acquisition costs in the jurisdiction being evaluated. Similarly, the total asset of the miles of bicycle and pedestrian facilities and multi-use trails can be estimated using FDOT LRE cost information and local bids (if available) on a cost-per-square-foot basis. To test the changes in the value of the “mix of assets,” using either a 10- or 25-year planning horizon, the value of existing and programmed transportation improvements for all modes (roadway, bicycle, pedestrian) can be calculated. Many jurisdictions will focus more on implementing premium transit to shift travel away from vehicles towards local bus service, BRT, and even light rail. The future asset value calculation based on programmed transportation improvements will serve as a test to make sure that the existing and future transportation systems are equivalent in value, ensuring that new development is not overcharged.

The next part of the calculation of the asset-based methodology is estimating the demand per unit of development. Figure 4 presents a flow chart of how this part of the mobility fee calculation is completed.

**Determination of Demand per Unit of Development**

The demand per unit of development for prior consumption-
Based roadway transportation impact fee studies has been based on vehicle miles of travel (VMT). This concept is integrated into a multi-modal mobility fee approach that converts VMT to PMT, accounting for average vehicle occupancy of 1.1 persons per vehicle from the U.S. Census Bureau. After adjustment of VMT to PMT, mode share data from the U.S. Census Journey-to-Work and Florida Standard Urban Transportation Model Structure (FSUTMS) models for each jurisdiction are used to assign PMT between the roadway and transit modes.

Using the results of the multi-modal transportation asset calculation and the demand per unit of development, ratios are calculated per unit of demand (i.e., roadway asset per PMT and transit asset per PMT). These ratios are compared to ratios based on the 10- and 25-year planning horizon multi-modal assets values to examine the dynamic changes to the level of the cost per asset in the jurisdiction.

**Determination of Credit per Unit of Development**

Credit per unit of development is based on a review of the historical, current, and projected revenues being used to fund transportation capital projects that add capacity or infrastructure assets to the jurisdiction’s multi-modal transportation system. This credit is calculated as the present value of the portion of equivalent federal, state, and local gasoline taxes, and other revenues generated by a new development over a 25-year period that is projected to be expended on transportation capacity expansion projects (e.g., lane additions, new road construction, intersection improvements, traffic signal additions, purchase of new buses, new bus stops, new bus shelters, new transit stations, new transfer stations, new sidewalks, new multi-use trails, and new bicycle paths). The credit will be predicated upon the level of existing federal, state, and local funds committed to transportation capacity expansion projects. The resulting credit per unit of development is per PMT for the roadway and transit components. Figure 5 presents a flow chart of how this part of the mobility fee calculation is completed.

**Asset-Based Mobility Fee per Unit of Development**

The results of the calculation of the transportation asset-value per PMT and the credit per PMT are used to estimate the net asset-value per PMT. The following equation, used in consumption-based transportation impact fee studies, applies similarly to the calculation of the mobility fee per unit of development that will be stratified for each mode of travel. For example, for the roadway net asset fee per unit of development, the following variation of the equation is used in the calculation, where demand is measured as the total PMT for the respective land use on a per unit of development basis:

\[
[\text{Demand} \times \text{Asset-Value per PMT}] - \text{Credit per PMT} = \text{Fee per Unit of Development}
\]

Figure 6 presents a flow chart of how this part of the mobility fee calculation is completed. As shown in the figure, this calculation is stratified for each mode of travel such that the total mobility fee is the sum of roadway and transit net asset value per unit of development.

![Figure 5 – Determination of Credit Value Per PMT](image1)

![Figure 6 – Determination of Asset Per PMT](image2)
Sample Calculation

A sample calculation using the formula presented above for a single-family home per unit for roadways and transit is presented below using hypothetical figures. This calculation is for illustration purposes only and is built upon the concept of charging for the existing transportation assets including roadways and transit. For example, as previously presented, the roadway asset value per PMT is approximately $1,100. This calculation is intended to illustrate the actual existing transportation asset value; a healthy and meaningful debate should be facilitated to carry this discussion forward. Figure 7 presents a flow chart that shows the total mobility fee calculation including all components.

Roadway Component

\[
\text{[Demand x Asset-Value per PMT] – Credit per PMT = Fee per Unit of Development} \\
[25.85 \times $1,100] – $2,450 = $25,985
\]

Transit Component

\[
\text{[Demand x Asset-Value per PMT] – Credit per PMT = Fee per Unit of Development} \\
[25.85 \times $1] – $5 = $20.85
\]

Total Fee = Roadway Component + Transit Component
Total Fee = $25,985 + $20.85
Total Fee = $26,005.85 per dwelling unit (single family home)

Who Can Benefit from a Mobility Fee?

The mobility fee concept being applied in Florida will provide flexibility and a framework that accounts for the diversity in local conditions and needs in counties across the state. For example, urban service areas such as Orlando can transition into a more multi-modal transportation system that accounts for travel on all modes and can use mobility fee revenues to address roadway, transit, and bicycle/pedestrian facility needs necessitated by new growth. Urban areas are more likely to rapidly shift transportation investments away from traditional roadway-centered programs towards premium transit services and enhanced bicycle and pedestrian improvements, while transitioning communities such as Pasco County likely will seek to explore a multi-modal transportation system but over a more long-term planning horizon. More rural communities may be interested in using the mobility fee concept to continue a focus on constructing new roadways and widening existing collector roadways to provide transportation capacity for new growth. These areas may not have the supporting density and land use patterns to support transit services.

Conclusion

The asset-based mobility fee calculation can be applied in all communities. However, they will be particularly beneficial to communities that have taken a proactive approach to incorporating a multi-modal methodology in standard transportation impact fee studies because they provide greater flexibility in the use of these revenues.

The preliminary mobility fee calculations and results, as reflected in this paper, specifically with regard to roadway asset values, indicate that the cost per vehicle mile of travel being charged in the current impact fee equation is approximately 45 percent of the value of the existing roadway asset. Since roadway assets have been constructed and improved over the last 50 years, charging new development at a rate that is significantly less than the current value of the assets is, at best, a conservative approach. CUTR’s mobility fee study refines and confirms these calculations and develops the estimated asset values for transit and bicycle and pedestrian systems.

Another key factor to be considered is the concept of a one-time charge to new development for transit operating costs. The CUTR study included a review of this concept, and TOA will be exploring this in more detail in the third and final white paper, to be published in February 2010.
Contact
For additional information on TOA’s services, please contact:

Tampa Office
William E. Oliver, P.E., PTOE
Senior Vice President
(813) 224-8862  boliver@tindaleoliver.com

Bartow Office
Richard Dreyer, AICP
Senior Project Manager
(863) 533-8454  rdreyer@tindaleoliver.com

Orlando Office
Robert P. Wallace, P.E., AICP
Vice President
(407) 657-9210  bwallace@tindaleoliver.com

www.tindaleoliver.com  TOA is an equal opportunity employer.