Reforming Infrastructure Financing with 2020 Vision

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THE UNITED STATES IS HEADING FOR AN INFRASTRUCTURE TRAIN WRECK. Consider that in 2001, the American Society of Civil Engineers (ASCE) estimated America's infrastructure maintenance backlog at $1.6 trillion,[1] and by 2009 it had risen to $2.2 trillion.[2] At this pace, America's infrastructure backlog will hit $4.6 trillion by 2040.[3] Indeed, the ASCE has downgraded the quality of America's infrastructure from D+ to D between 2001 and 2009.[4] Consider further that between 2010 and 2040, the U.S. will add another 100 million people[5] living in 40 million more homes[6] and working in 60 million more jobs than now.[7] The cost for new infrastructure to meet new growth needs will top $1.2 trillion, yet only about $400 billion may be available to fund growth-related needs.[8] Maybe the train wreck is already here.

In this article, and in tribute to Professor Julian Conrad Juergensmeyer, I review the infrastructure financing challenge ahead—which I characterize as a train wreck, summarize the leading options and why they will not solve the problem, and outline a method for reforming infrastructure finance in the United States.

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1. In inflation-adjusted 2010 dollars. *See* AM. SOC'Y FOR CIVIL ENG'RS, REPORT CARD FOR AMERICA'S INFRASTRUCTURE (2001), *available at* http://apps.asce.org/reportcard/pdf/reportcard.pdf [hereinafter ASCE 2001 REPORT CARD].

2. *See* AM. SOC'Y FOR CIVIL ENGINEERS, REPORT CARD FOR AMERICA'S INFRASTRUCTURE 2 (2009), *available at* http://www.infrastructurereportcard.org/sites/default/files/RC2009_full_report.pdf [hereinafter ASCE 2009 REPORT CARD].

3. Compounded average annual rate of change between 2001 and 2009 in 2010 constant dollars.

4. *See* ASCE 2001 REPORT CARD, *supra* note 1; ASCE 2009 REPORT CARD, *supra* note 2.

5. *See* U.S. CENSUS BUREAU, U.S. POPULATION PROJECTIONS: PROJECTIONS OF THE POPULATION AND COMPONENTS OF CHANGE FOR THE UNITED STATES: 2010 TO 2050 (2008), *available at* http://www.census.gov/population/www/projections/files/nation/summary/np2008-t1.xls. Rounded, based on Census Projections to 2040. *See id.*

6. *See* COMPLETE U.S. DATABASE 2010 (Woods & Poole Economics CD-ROM, 2010). Assuming about 2.5 persons per household (rounded). *See id.*

7. *See id.* Assuming about 0.6 jobs per person (rounded). *See id.*

8. *See infra* Part I.

I. The Infrastructure Train Wreck

The United States will add 100 million people faster than any other country on the planet except India and Pakistan, and perhaps even China.[9] While it is anyone's guess how much it will cost to support this new population, an estimate can be hazarded anyway, which is done in Table 1.

Infrastructure expansion costs come to about $12,000 per new resident but the trouble is that capital expenditures per new resident average only about $4,000 per new resident.[10] The result is a continually degrading level of service such as congestion, multiple school shifts, increasing public safety response time, and so forth. Indeed, as reported earlier, over the period from 2001 to 2009, the ASCE reports the cost to upgrade facilities to meet current needs increased by about $600 billion.[11] About half this amount may be attributable to the inability of federal, state and local governments to finance infrastructure needs to meet the demand of new development.[12]

By about 2040, or about when the next 100 million Americans are added, the train wreck we have will grow to:

- $4.6 trillion in infrastructure backlog[13]
- $0.8 trillion in unfunded capacity expansion[14]

9. *See* United Nations, World Population Prospects: The 2008 Revision Population Database, http://esa.un.org/unpp/ (last visited Nov. 24, 2010).

10. There are no authoritative estimates of the actual expenditures incurred per new resident for infrastructure expansion. This estimate is based on the average annual change in public sector capital expenditures over the period 2000 through 2007 from the Census "Construction Spending" (Value put in Place) divided by total population change. *See* U.S. Census Bureau, Construction Spending: September 2010, http://www.census.gov/mcd/index.html (last visited Nov. 24, 2010) (detailing construction spending); U.S. Census Bureau, Population Estimates, http://www.census.gov/popest/states/NST-ann-est.html (last visited Nov. 24, 2010) (detailing total population change).

11. *See supra* notes 2-3 and accompanying text.

12. The 2007 total value of the nation's state and local infrastructure in place was $7.5 trillion which, at an assumed average 35-year useful life for all structures, depreciates about $215 billion annually or about $1.7 trillion over the period 2001-2009. *See* U.S. Dep't of Commerce, Bureau of Economic Analysis, Fixed Asset Table, http://www.bea.gov/national/FA2004/TableView.asp?SelectedTable=30&FirstYear=2003&LastYear=2008&Freq=Year (last visited Nov. 24, 2010). Census construction figures indicate that total public sector infrastructure investments came to just about $1.7 trillion over the period. *See* U.S. Census Bureau, Total Construction, http://www.census.gov/const/www/ototpage.html (last visited Nov. 24, 2010). Yet, the cost for accommodating new development over the period would come to about $300 billion or about half the increase of the infrastructure backlog estimated by ASCE. *See* ASCE 2009 REPORT CARD, *supra* note 2.

13. *See supra* note 3 and accompanying text.

14. *See supra* tbl.1.

Table 1. Estimate of Costs to Support 100 Million New Americans, 2010-2040

Facility	Imputed Level of Service	Unit Cost	Unit	Total for 100M People ($Billions)
Parks and Recreation	5 acres per 1,000 residents	$100,000	Acre	$10
Police	2 officers per 1,000 residents	$70,000	Officer	$14
Fire/Emergency medical	2 officers per 1,000 residents	$100,000	Officer	$20
Water	100 gallons per capita per day	$5	Gallon	$50
Sewer	75 gallons per capita per day	$10	Gallon	$100
Stormwater	500 square feet impervious surface per capita	$1	Square foot	$50
Public Buildings	0.5 square feet per capita	$300	Square foot	$15
Courts and Justice	0.5 square feet per capita	$500	Square foot	$25
Libraries	0.5 square feet per capita	$400	Square foot	$20
Schools	0.4 students per household	$20,000	Student	$320
Roads	35 vehicle miles traveled daily per capita @ 9,000 trips per mile	$1,500,000	Lane mile	$583
Total Cost, $Billions				$1,207
Total Cost Per Capita				$12,073

Source: Arthur C. Nelson, Metropolitan Research Center, University of Utah. The levels of service and costs per units are based on the author's experience with calculating more than 100 development impact fees for communities across the nation, and in assisting in long-range capital financing planning for dozens of other communities. The levels of service standards can be considered composite or prototypical and subject to considerable local variation. The costs are usually composed of land, construction, design, and a variety of other costs; they are also subject to considerable local variation. Nonetheless, the levels of service and costs per unit are considered low to moderate estimates based on experience. Figures are in 2010 dollars.

- $5.4 trillion in total unfunded infrastructure needs[15]
- $13,500 per person[16]

II. Criteria for Proper Infrastructure Financing

The problem with our current system of financing new and maintaining existing infrastructure is that, for the most part, there is no dedicated, predictable funding source for either purpose. The federal government provides infrastructure expansion in fits and starts, such as with the "stimulus" funding Congress passed in 2009[17] that will take about a decade to spend out $111 billion set aside for infrastructure (excluding energy).[18] Even the venerable federal gas tax fund is broke[19] because (a) the tax rate is not keeping pace with inflation,[20] (b) needs outstrip revenues,[21] and (c) fuel-efficient vehicles consume less gasoline.[22]

For the most part, local government infrastructure is financed from local taxes. In particular, the Census of Government Finance shows that more than sixty percent of all "own source" revenue for local governments comes from locally imposed taxes of all kinds.[23] Yet, reliance on general taxes is not sustainable for reasons noted earlier in the case of the gas tax,[24] but also more generally with the reluctance of citizens to impose higher taxes on themselves.[25]

15. Total of infrastructure backlog and unfunded capacity expansion needs by 2040 or about the year when the United States reaches 400 million population.

16. $5.4 Trillion divided by 400 million population.

17. *See* Recovery.gov, The Recovery Act, http://www.recovery.gov/About/Pages/The_Act.aspx (last visited Nov. 24, 2010).

18. *See, e.g.*, Legislative Servs. Group, TRANSP. WEEKLY 4, Jan. 21, 2009 (estimating that the spend-out period of the transportation element of the 2009 stimulus package indicating total expenditures should be completed by about 2019).

19. *See* NAT'L SURFACE TRANSP. INFRASTRUCTURE FIN. COMM'N, PAVING OUR WAY: A NEW FRAMEWORK FOR TRANSPORTATION FINANCE 2 (2009), *available at* http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09FNL.pdf [hereinafter NSTIF REPORT].

20. *See id.*

21. *See id.*; Robert W. Poole, Jr., *Federal dollars for federal roads*, WASH. TIMES, Mar. 1, 2010, *available at* http://www.washingtontimes.com/news/2010/mar/01/federal-dollars-for-federal-roads/ (declaring that one reason needs are outstripping demand is that about a quarter of the federal gas tax goes for non-road items such as sidewalks, bicycle pathways, and transit). Poole does not acknowledge that those investments reduce highway demand or the extent to which those investments save more than their cost. *See id.*

22. *See* NSTIF REPORT, *supra* note 19, at 2.

23. *See* U.S. Census Bureau, State and Local Government Finance, http://www.census.gov/govs/estimate/ (last visited Nov. 24, 2010) (detailing 2008 data).

24. *See supra* notes 19-22 and accompanying text.

25. *See, e.g.*, Andrew Chamberlain, *New Poll on U.S. Tax Attitudes*, TAX POL'Y BLOG, Apr. 5, 2006, http://www.taxfoundation.org/blog/show/1418.html.

And why should they? After all, taxes, as a rule, need not be tied to benefits received in exchange for taxes paid and may thus be viewed by some as unfair, especially when some may benefit more than others.[26] A more equitable financing scheme would be one in which people pay in proportion to benefits received; but how can such a system be designed? Fortunately, reasonably straightforward criteria exist by which to design a non-tax system.[27] Moreover, shifting reliance on infrastructure finance from taxes to non-tax approaches may reduce costs. Let us explore this.

A goal of any public finance scheme should be to achieve "efficiency," which occurs when "marginal benefits" equals "marginal costs."[28] For instance, if the benefit of flying the next ("marginal") airplane to Europe is $1,000 per ticket and the cost is also $1,000, the transaction is efficient. If the benefit is $1,000 but the cost of providing the next ("marginal") flight to Europe is $2,000 per ticket, the outcome is inefficient, and the flight would not be made.[29] Conversely, if the benefit were $1,000 and the cost just $500, many more people would fly and thus more flights would be made. In this simple example, the precise balance between marginal benefits and marginal costs would result in the right number of trans-Atlantic trips; no more and no less. However, if the source of payment is from general taxes one pays and one does not directly pay the price individually, the outcome may be more demand for flights regardless of cost, and if government meets that demand more taxes will be needed to subsidize the flights. The outcome could be considered inefficient.

Likewise, public facilities and services could be moved from a general tax approach to assessment or fees. If this can be done, people would consume only that amount of infrastructure needed to meet their needs, and infrastructure provision would be efficient. Consider this in the context of public sewer services. If the marginal cost to the public of extending the sewer system is $10,000 per house and the marginal benefit to the public (through fees received) $10,000 per house, the

26. For a review of the distinction between taxes and fees, *see* HOLLEY ULBRICH, PUBLIC FINANCE IN THEORY AND PRACTICE (South-Western 2003) (2002).

27. *See, e.g.*, RONALD C. FISHER, STATE AND LOCAL FINANCE 8, 12 (3d ed. 2006).

28. This is the standard definition offered in economics texts. *See, e.g.*, ROGER A. ARNOLD, ECONOMICS 9 (9th ed. 2010) (2000).

29. Airlines are enormously inefficient which is why they have been losing so much money over the past few years. *See* Thayer Watkins, San Jose State University, Marginal Cost Pricing, http://www.sjsu.edu/faculty/watkins/mcpricing.htm (last visited Jan. 10, 2011).

extension would be efficient. If the benefit is just $5,000 because that is what the fee is but the extension is made anyway, the result is inefficient. It could also be considered perverse if existing residents who are also lower income have to make up the difference to subsidize new, higher-income residents.[30]

There are important land use planning considerations as well. Underpriced infrastructure is a chief contributor to urban sprawl.[31] If development pays its full cost, land use patterns will be efficient. Unfortunately, under the current taxing schemes in most American local governments, less costly development (usually in closer-in, higher density locations) pays the same capital and maintenance costs as more costly development (usually in farther-out, lower density locations), resulting in less costly development subsidizing more costly development and thus stimulating even more inefficient development.[32] What is needed is an over-arching infrastructure financing system in which the costs of infrastructure are borne proportionately.

III. Professor Juergensmeyer's *Dual Rational Nexus* to the Rescue

Does this approach sound familiar? Professor Juergensmeyer pioneered just such a way to finance the capital costs of infrastructure through the mechanism called regulatory impact fees, which have since become known as development impact fees or, more simply, impact fees.[33] Impact fees are one-time charges applied to new developments to raise revenue for the construction or expansion of capital facilities needed to serve new development proportionate to its cost.[34] They normally are used to cover only capital costs and not operations and maintenance costs.[35] Based on Professor Juergensmeyer's pioneering legal advancements, impact fees have become legally defensible if they meet the

30. For an elaboration on infrastructure financing efficiency, see Douglass E. Lee, *Evaluation of Impact Fees Against Public Finance Criteria, in* DEVELOPMENT IMPACT FEES: POLICY RATIONALE, PRACTICE, THEORY, AND ISSUES (Arthur C. Nelson, ed., 1988).

31. *See* Richard Peiser, *Decomposing Urban Sprawl*, 72 TOWN PLAN. REV. 275, 280 (2001).

32. *See id.* at 280.

33. *See* Julian Conrad Juergensmeyer, *The Development of Regulatory Impact Fees: The Legal Issues, in* DEVELOPMENT IMPACT FEES: POLICY RATIONALE, PRACTICE, THEORY, AND ISSUES (Arthur C. Nelson, ed., 1988).

34. *See* JAMES C. NICHOLAS ET AL., A PRACTITIONER'S GUIDE TO DEVELOPMENT IMPACT FEES (1991).

35. For exceptions, see ARTHUR C. NELSON ET AL., IMPACT FEES: PRINCIPLES AND PRACTICE OF PROPORTIONATE-SHARE DEVELOPMENT FEES (2009).

"dual rational nexus" test.[36] The test is used by the courts to determine if there is a taking. The two prongs of the test are, specifically:

1. Is there a reasonable connection between the need for additional capital facilities and the growth of the population generated by new development; and
2. If a reasonable connection exists, is there a reasonable connection between the expenditure of funds collected through the impact fee and the benefits accruing to the development.[37]

The test could just as well apply to operations and maintenance. After all, public utility fees to recover operations and maintenance costs are based on these same rational nexus principles.[38] However, utility rates tend to be applied uniformly per unit of service consumed across large areas which has the same sprawl-inducing effect noted earlier. Aside from such details as needing state enabling legislation in most if not all states, let us explore how Professor Juergensmeyer's dual rational nexus test may solve all—well, perhaps most—infrastructure financing problems.

IV. The Transportation Utility Fee Model

One approach to addressing long-term facility operations and maintenance concerns is offered by accounting systems akin to enterprise funds. Such funds are customarily used for water, wastewater, and drainage systems.[39] Enterprise funds usually show the revenue collected from local residents and businesses for such public utilities as water and wastewater.[40] The revenue collected should be sufficient to operate treatment facilities, pay the staff, and maintain the distribution/collection network of pipes, pumps, and so forth. In theory, enterprise funds should be self-sustaining.[41] A key feature is that they internalize all

36. *See, e.g., Home Builders Ass'n v. City of Beavercreek*, 729 N.E.2d 349 (Ohio 2000).

37. *See id.*

38. *See* JAMES C. BONBRIGHT ET AL., PRINCIPLES OF PUBLIC UTILITY RATES 399-401 (1988) (discussing correlation between public utilities' need of increased operations and maintenance and the increase in population).

39. *See* RONALD C. FISHER, STATE AND LOCAL PUBLIC FINANCE 461-90 (2006).

40. *See id.*

41. For a succinct description of enterprise funds, see Lindsay Moriarty, Self Sustaining Enterprise Funds: Challenges and Solutions, Community & Econ. Dev. in N. Carolina & Beyond (July 21, 2010), http://sogweb.sog.unc.edu/blogs/ced/?p=1705. Unfortunately, as this publication shows, enterprise funds sometimes are not financially self-sustaining and need other general tax revenue to cover funding shortfalls–or the facility incurs the kind of deferred maintenance identified by the ASCE. *See* ASCE 2009 REPORT CARD, *supra* note 2.

costs and revenues into a dedicated account which is separate from the general fund.[42] The example reviewed here is the Transportation Utility Fee (TUF). The fee itself is based substantially on the proportionate-share principles of the dual rational nexus test.

Interest in the TUF is driven by the mismatch between the costs of operating and maintaining transportation systems, and the revenues generated from general taxes made available for that purpose. Insufficient revenue means more potholes, failing signals, crumbling shoulders, and so forth. An enterprise-fund approach could offload road maintenance costs from the general fund to a self-funded, sustainable revenue stream. All development would be assessed on a proportionate-share basis.

An early model for calculating TUFs came out of one considered by Orlando, Florida, in the 1990s, using the following formula:[43]

Transportation Utility Fee5Unit Demand 3 Trip Generation Factor 3 Base Rate
Unit Demand=number of dwelling units, square feet, or hotel rooms on a particular parcel
Trip Generation Factor=Total Average Daily Trips
Base Rate=Average Yearly Costs based on Total Average Daily Trips

For example, in the 1990s, the Orlando TUF would have resulted in the following annual fees by land use:[44]

Average Yearly Costs @ $6,465,000=$3.07/annual trip
Total Average Daily Trips @ 2,108,443

The annual bill would be part of the annual property tax assessment, but it could also be made part of a water bill, or a separate bill altogether. In the Orlando example, the annual assessment for broad categories of land use would have been that shown in Table 2.

Alas, the TUF concept was ruled by the Florida Supreme Court as a tax and not a fee.[45]

42. *See* U.S. DEP'T OF HOUS. & URBAN DEV., PHA GAAP FLYER: GOVERNMENTAL VS. ENTERPRISE FUND ACCOUNTING (1999), *available at* www.ahacpa.org/ahacpadocs/guides/gaapflyer1.pdf.

43. MARIE YORK & CTR. FOR URBAN & ENVTL. PROBLEMS, ORLANDO TRANSPORTATION UTILITY FEE (1991).

44. The numbers and calculations that follow are from York. *See id.*

45. *See State v. City of Port Orange*, 650 So. 2d 1, 6 (Fla. 1994). The court distinguished between a user fee and a tax as follows:

> User fees are charges based upon the proprietary right of the governing body performing the use of the instrumentality involved. . . . [T]hey are charged in exchange for a particular governmental service which benefits the party paying the fee in a manner not shared by other members of society . . . and they are paid by choice, in

Table 2. Orlando Transportation Utility Fee Proposal

Land Use	Daily Trips	Cost @ $3.07/Trip
Single family	10.44	$32.06
Multi-family	6.33	$19.44
Hotel room	9.03	$27.72
1000 SF office	12.87	$39.52
1000 SF commercial	69.15	$212.30
1000 SF industrial	5.62	$17.24

Source: MARIE YORK, CENTER FOR URBAN AND ENVIRONMENTAL PROBLEMS ORLANDO TRANSPORTATION UTILITY FEE, CENTER FOR URBAN AND ENVIRONMENTAL PROBLEMS (1991)

Because of special enabling legislation, Oregon offers important lessons. In Oregon jurisdictions can assess a "street utility fee" which, like a water or wastewater fee, is a monthly fee collected on development based on its estimated use of the transportation system. (The fees are also known by other names such as Road Utility Fee, Road Maintenance Fee, and other variations.) The fee is based on the estimated number of trips a particular use generates.[46] In a handful of communities in Oregon, the street utility fee is included in the regular water and wastewater bill.[47] At this writing, those communities were Ashland, Eagle Point, Gresham, La Grande, Lake Oswego, Medford, Tigard, Tualatin, and Wilsonville.[48] Their populations range from under 10,000 to more than 100,000.[49]

that the party paying the fee has the option of not utilizing the governmental service and thereby avoiding the charge.

Id. at 3 (internal citations omitted).

However, in *Bloom v. City of Fort Collins*, 784 P.2d 304 (Colo. 1989) (en banc), a divided Colorado Supreme Court held that a "transportation utility fee" assessed on owners or occupants of developed lots to support street maintenance was not a property tax but rather a "special fee" related to the cost of maintaining city streets. *See id.* at 307-08.

To add further to confusion, in *Covell v. City of Seattle*, 905 P.2d 324 (1995) (en banc), a divided Supreme Court of Washington held that a municipal street utility charge was a property tax, though not an excise tax. *See id.* at 327-29.

46. *See, e.g.*, City of Lake Oswego, Street Fee Questions, http://www.ci.oswego.or.us/engineer/street%20fee/questions.htm (last visited Nov. 24, 2010).

47. *See* Mark Schoening, *Development of a Street Utility for Funding Street Maintenance*, PUBLIC WORKS, Aug. 2001, at 40.

48. *See id.*

49. *See* Oregon.com, Population by City Name, http://web.oregon.com/towns/population_alpha.cfm (last visited Nov. 24, 2010).

Lake Oswego, Oregon's "Street Maintenance Fee" is instructive.[50] The fee is a monthly fee based on use of the transportation system that is collected from residences and businesses within the city. It is based on the number of trips a particular land use generates and is collected through the city's regular water, wastewater and drainage utility bill. It is dedicated to the maintenance and repair of the city's transportation system.[51]

At the time of its fee calculation, Lake Oswego had about 172 miles of paved streets.[52] Much of the system was not designed for the type and volume of traffic now seen. Historically, the largest source of funds for maintenance was the state gas tax which, in constant dollar terms, was declining relative to need.[53] The city determined that a new, supplemental source of funds was needed to provide for an adequately operating street system.[54]

The fee is based on an inventory of all the existing uses parcels in the city.[55] Institute of Transportation Engineers (ITE) trip generation rates were used to determine trip generation values for each use.[56] Residential and non-residential groups were established to help generate a maintenance fee rate to be applied to each group. Adjustments were made to the trip generation rates to account for pass-by trips—which are intermediate stops on the way from an origin to a primary trip destination. The groupings take into account the net trip generation rates after factoring in pass-by trip information. The groups include the following:

- Single Family (Detached)
- Multi-family
- Group 1—Land uses with less than 29 vehicle-trip-miles per day per 1,000 square feet of building space
- Group 2—Land uses with more than 29, but less than 90, vehicle-trip-miles per day per 1,000 square feet of building space
- Group 3—Land uses with more than 90 vehicle-trip-miles per day per 1,000 square feet of building space[57]

50. *See* City of Lake Oswego, *supra* note 46.
51. *See* Schoening, *supra* note 47, at 38.
52. *See* City of Lake Oswego, *supra* note 46.
53. *See* Schoening, *supra* note 47, at 38; City of Lake Oswego, *supra* note 46.
54. *See* City of Lake Oswego, *supra* note 46.
55. *See id.*
56. *See id.;* INST. OF TRANSP. ENG'RS, TRIP GENERATION (8th ed. 2008).
57. *See* City of Lake Oswego, *supra* note 46.

The fee is based on the following formula:[58]

Street Maintenance Fee=*Street Maintenance Cost* − *Revenues* × (ITE Daily Trips/Group)

Where: Street Maintenance Cost is the budget for maintaining streets but not capital expansion (which is paid through a road impact fee called, in Oregon, a "system development charge"). The cost is calculated as the full cost necessary to maintain the street system properly and avoid deferred maintenance for lack of funds.

Revenues are projected revenues from state, regional, and local sources.

Estimated Trips is for year of analysis using the City's inventory of land uses multiplied by ITE's trip generation rates applicable to each group.

ITE Daily Trips/Group is the number of trips for each unit of land use (one dwelling for residential and 1,000 square feet for nonresidential). Lake Oswego's fee for each land-use group was thus:[59]

Single-family detached residential (per unit)	$4.00/month/unit
Multi-family residential (per unit)	$2.68/month/unit
Non-Residential Group 1	$2.45/month/1,000 square feet
Non-Residential Group 2	$5.51/month/1,000 square feet
Non-Residential Group 3	$20.58/month/1,000 square feet

For the most part, these innovations in transportation facility financing are not nearly as sophisticated as calculating impact fees. For instance, there is no variation by service area,[60] no accounting for whether levels of service should vary by location within the jurisdiction,[61] and the land use assessment schedule is very general.[62]

V. Extension to Other Facilities

It would not be difficult to extend the TUF concept to nearly all, if not all, other facilities with the aim to make every facility a self-sufficient enterprise. Conceptually, local taxes could be reduced greatly—though perhaps eliminated. Facility Maintenance Fees would be calculated based substantially on Professor Juergensmeyer's *dual rational nexus*

58. *See id.*
59. *See id.*
60. In all Oregon examples, see, for example, the Oswego example, *supra* notes 46-59 and accompanying text, and the ill-fated Orlando case, see *supra* note 45 and accompanying text, there is one citywide fee per unit of demand.
61. Though not common, impact fee calculations can depend on different levels of service standards for different parts of a jurisdiction called "service areas." For instance, a highway level of service standard could call for 10,000 vehicle trips per day per lane mile in an urban area and 6,000 trips per lane mile in a rural one, with associated cost differences.
62. Modern impact fee schedules can include twenty or more major land use categories, as opposed to the six proposed by Orlando and the five used in Lake Oswego.

criterion, and rather elegantly. For instance, for every facility for which a jurisdiction already has an impact fee, it would be a simple matter of changing the "numerator" (the net impact cost) to reflect annual operations and maintenance costs for a service area, but keeping the denominator the same. Consider the following possible extension, hypothetically, to police facility impact fees in Table 3.

Table 3. Comparable Impact Fee and Facility Maintenance Fee Calculations

Measure	Capital Cost	Annual Operations & Maintenance Cost
Level of Service	0.5 square feet per functional resident[63]	0.5 square feet per functional resident
Net Impact/O&M Cost[64]	$100/square foot	$10/square foot
Impact Fee/FMF	$50/functional resident	$5/functional resident/year

In other words, with thanks to the pioneering work of Professor Juergensmeyer, the foundation has been laid to reform infrastructure financing so that it may be off-loaded from general taxation, and the quality of life among Americans is sustained because there would be a sustainable source of revenue to do so.

VI. Legal Advancement

Where would we go from here to advance the dual rational nexus Facility Maintenance Fees? Perhaps an opinion on this subject from the Maryland Attorney General puts it best: "[W]here the fee is imposed for the purpose of regulation . . . such sum is a license proper, imposed by virtue of the police power. . . ."[65]

Now may be a good time for the states to broaden facility financing authority to include Facility Maintenance Fees earmarked for operations and maintenance costs for all facilities if calculated based on dual rational nexus principles.

63. "Functional resident" is a method to convert the apples-and-oranges challenge of assessing different land uses proportionately. *See* ARTHUR C. NELSON, JAMES C. NICHOLAS & JULIAN C. JUERGENSMEYER, IMPACT FEES: PRINCIPLES AND PRACTICE OF PROPORTIONATE SHARE DEVELOPMENT (2009).

64. Net impact cost means the total cost per functional resident less any external funds available such as federal and state funds, and less other revenues dedicated to the facility.

65. J. Joseph Curran, Jr., *Taxation: Municipality Lacks Authority to Impose "Street Utility Fee" Without Enabling Legislation from the General Assembly*, 91 OPINIONS OF THE ATT'Y GEN. 14, 19 (2006), *available at* www.oag.state.md.us/Opinions/2006/91oag14.pdf.