Private Provision of Public Pedestrian and Bicycle Access Ways: Public Policy Rationale and the Nature of Public and Private Benefits

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The preparation and implementation of a system of access ways throughout the community will result in economic improvements that will benefit the entire community. Private property owners will benefit, especially for commercial property that allows access to nearby customer bases in residential areas and employment centers. At the same time, the provision of access ways will reduce the magnitude of the public's subsidies to and adverse externalities that result from automobile dependency. Separating pedestrian and bicycle traffic from streets and providing pedestrian and bicycle access ways will make travel easier for all who access such ways. Public benefits include reduced congestion, reduced air and noise pollution, reduced public costs associated with highway construction and maintenance, reduced energy consumption, improved pedestrian and bicyclist safety, and overall improvements in environmental and social quality of life factors. Private benefits include reduced driving costs, increased investment in downtowns, and increased private property values.

The vitality of urban areas depends on the provision of multiple access ways. In modern American cities, those ways include roads, sidewalks, and bicycle pathways—the latter two often designed to accommodate all nonmotorized transport modes. Planners and analysts are learning that if any one of these three access ways is lacking, the quality of the urban environment is compromised, with adverse effects not only on the community at-large, but on the value of individual private property.

This study presents a framework for viewing multiple access ways as not only necessary for the public health, safety, and general welfare but necessary for the economic vitality of communities and privately owned property therein. It begins by reviewing the conflict created in communities with insufficiently diverse access ways. The public and private benefits of multiple access ways are then reviewed. It concludes with a discussion on the role of comprehensive planning and implementation of planning through exaction in providing multiple access ways that benefit public and private property owners.

THE CONFLICT

The interaction between pedestrians and vehicles places pedestrians at a distinct disadvantage (*1*). One obvious result is the annual pedestrian accident toll of more than 85,000 in 1992 (*2*). The nature of the pedestrian-vehicle conflict includes spatial, environmental, and sociological dimensions (*1*).

The spatial conflict is the competition for the same urban space. Vehicles require large amounts of space for movement and storage, and demand priority in traffic. Such space requirements for vehicles thereby determines urban form, typically making it more sprawled and less interconnected (*1*).

As for environmental effects, vehicles produce noise, dust, fumes, and visual pollution (*1*). Together, highways and vehicles obscure scenic views and disrupt the aesthetic features of the cityscape (*1*). Traffic control devices, parking meters, and other types of street furniture connected with vehicles create visual clutter (*3*).

On the sociological dimension, heavy volumes of vehicular traffic affect community identity, individual desires to maintain property, and the nature of social interaction (*4*).

The following passage illustrates how problems associated with the pedestrian-vehicle conflict are intensified in downtowns of all sizes because of their more intense development.

> The typical downtown is a regional center for business, shopping, cultural, social, and governmental activities served by a tributary transportation network. There is a basic functional differentiation between the transportation feeder systems required to support a downtown area, and the distributor systems within the downtown area. Traffic in and out of downtowns is comprised of concentrated through movements radiating from the central core. Traffic within downtown is dispersed and comprised of many short, irregular, multi-purpose trip linkages. Trip patterns of this type are most efficiently accommodated by walking, and in terms of total trips, walking is the predominant means of movement within all downtown areas (*1*).

Oddly, many downtown areas are experiencing business declines because of competition from suburban shopping malls (*1*). Shopping malls are exclusively pedestrian-oriented and free of vehicular traffic (*1*). Because the conflict between pedestrians and vehicles has been removed, significant improvements are made in the physical and visual environment (*1*). The result is that shopping malls are more sensitive to the human requirements of security, convenience, comfort, and social-interaction than downtowns (*1*).

If public officials wish to make downtown areas more attractive as commercial centers they must recognize the importance of the pedestrian function (*1*). The pedestrian function also extends to bicycling pathways. Bicycle riding in many American towns and cities, like walking, is neither enjoyable nor safe because of the

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dominance of the automobile (*5*). Simply put, the automobile and the bicycle are not compatible (*6*). Yet bicycles are an important transportation mode, especially when used to connect residential and commercial areas (*6*).

THE BENEFITS

Private property owners in downtowns benefit from pedestrian and bicycling improvements. Historically the center of activity, downtowns were originally structured to serve pedestrians. The concentrated, mixed-use physical layout of downtowns fostered walking. Sidewalks connected stores to one another and to residential areas where many customers live (*5*).

Communities set up for walking and bicycling reduce the cost of commuting, delivery of goods and services, and police and fire protection. Pedestrian improvements have revitalized many small community shopping areas, creating new jobs in what formerly appeared to be financial and community disasters. Most pedestrian-oriented districts have reported increases in private-sector building. For instance, Nicolete Mall in Minneapolis helped attract new buildings worth more than $1 billion. [(*6*) Note: Figures updated and adjusted to 1992 dollars from original.] Other savings, such as from reduced pollution and noise, increase property value for residential property and, as a result, for all downtown property (*7*).

These benefits are usually reflected in the private real estate market. Consider Peachtree City, Ga. Its comprehensive plan, which dates from the 1960s, includes a system of pedestrian-bicycle ways (called "cart paths") that was designed to connect all major land uses to one another, and especially connect commercial areas to residential areas to reduce congestion associated with short-haul convenience shopping trips. Its system is considered a model for suburban city planning (*8*).

Within Peachtree City (a planned new town), developers are required to reserve right-of-way (ROW) and construct cart paths in accordance with the *Peachtree City Comprehensive Plan* whether subdividing or applying for a building permit. Local commercial real estate brokers acknowledge cart paths' contribution to property value. J. Tate Godfrey, a commercial broker with Peachtree Brokerage Group, states that cart paths along all types of property have a positive effect on the value of such property, although the amount varies by kind of property (personal communication). Industrial property probably would not value access to cart paths as highly as residential and commercial properties. The greatest increase in value is seen in neighborhood commercial properties connected to residential areas. Likewise, Ralph McCurdy, a commercial broker with ReMax, states that the major factors in commercial property prices are visibility, access to highways, and access to cart paths (personal communication).

On the other hand, automobile-dependent property, including downtowns and commercial areas devoid of pedestrian and bicyclist facilities, enjoy considerable automobile subsidies proffered by society-at-large. These subsidies are not paid by benefiting property. As such, society is entitled to have these subsidies compensated through a variety of public-serving planning decisions, including dedications and improvements resulting in improved walking and bicycling activity.

From society's perspective, pedestrian and bicycle facilities are needed to offset subsidies to automobile-dependent property. The value of these subsidies can be measured by comparing the total costs of congestion, pollution, parking, driving costs, road maintenance, energy consumption, pedestrian safety, transportation capital investments, and general environmental and social effects to the costs attributable to walking and bicycling. The difference is the subsidy. These differences are quantified later. Some of this discussion is based on Todd Litman's previously cited work (*9*).

A review of trends is shown in Table 1. This table graphically shows national travel trends before 1970. The nation is becoming more automobile-dependent and less integrated economically and socially as people and their activities physically become much farther removed from one another (*10,11*). If this trend were efficient, that is, not induced by inefficient behavior such as explicit price subsidies and unpriced externalities, it may not be troublesome. However, this trend is fueled by explicit price subsidies and unpriced externalities which, if unchecked, could damage the economic foundation of the nation as other nations take action to correct such subsidies and unpriced externalities through public policy.

Congestion Reduction

Pedestrians and bicyclists occupying spaces reserved for walking, bicycling, or both contribute nothing to street congestion and actually remove potential vehicles from streets, resulting in an overall improvement in total transportation system flow. On the other hand, forcing pedestrians and bicyclists onto highways reduces highway capacity, as shown in Table 2. Where there is no facility for pedestrians and bicyclists (such as shoulders) highways are reduced to up to 70 percent of their capacity to accommodate vehicles. However, providing pedestrian and bicycle access ways will help reduce highway congestion. (The counter-argument is that such separation can lead to higher highway speeds that may threaten pedestrian and bicyclist safety. This is possible, but one major objective of separating motor vehicles from pedestrians and bicyclists is to improve overall safety.) Designating spaces for pedestrians and bicyclists should improve vehicular flow and improve air quality; however, these are qualitative outcomes that are not easily measured and would likely be short-lived as highway capacity is absorbed over time.

The effect of bicycles within travel lanes of otherwise free-flowing highways is shown in Table 3. For example, suppose an intersection has capacity for 500 vehicles per hour (vph). The effect of bicycles on the automobile capacity of travel lanes less than 4.27 m (14 ft) wide can be estimated using the following formula (*12*):

$$vph_{\text{Auto}} = \text{Capacity}_{\text{Auto}} - (\text{Bicycles} \times \text{Adjustment Factor})$$

For example, suppose an intersection averages 100 bicycles per hour, one-half of which are opposed, and the travel lanes are 3.66 m (12 ft) wide. The resulting vph for automobiles is calculated as follows:

$$vph_{\text{Auto}} = 500 - ((100 \times 0.5 \times 0.5) + (100 \times 0.5 \times 0.2)) = 465$$

While pedestrians and bicyclists can reduce highway capacity if not separated from vehicular traffic, separated pedestrian and bicycling facilities can induce drivers to walk or cycle, thereby improving overall highway capacity (*13–16*). When one considers that at least 50 percent of all automobile trips, including a large share of work trips, are less than 5 mi, it should become obvious that there is great potential for pedestrian and bicycle access ways to reduce congestion of highway facilities (*6*).

Suppose a lengthy, but not unreasonable, walk or a moderate bicycle trip is 4 km (2.5 mi), which is equivalent to roughly one-

TABLE 1 Travel Trends in the United States—1969–1990

Measure	1969	1977	1990	Percent Change 1969-90
Population[10]	202,677,000	220,239,000	249,924,000	23%
Average Annual Vehicle Kilometers (Miles) Traveled Per Household[11]	1,496 (929)	2,151 (1,336)	2,523 (1,567)	88%
Average Annual Vehicle Trips Per Household[2]	213	268	345	62%
Average Vehicle Trip Length in Meters (Miles)[2]	7.1 (4.4)	8.1 (5.0)	8.2 (5.1)	16%

Sources
1 *[10]*
2 *[11]*

TABLE 2 Effect of Pedestrian/Bicycle Clearance on 3,66-m (12-ft) Lane Capacity for Automobiles [*12*]

Usable Shoulder Width for Pedestrians and Bicyclists	Capacity Effect Where 1.0 = Maximum Lane Capacity	
	Level of Service A to D	Level of Service E
1.83+ Meters (6+ Feet)	1.00	1.00
1.22 Meters (4 Feet)	0.92	0.97
0.61 Meters (2 Feet)	0.81	0.93
0 Meters (0 Feet)	0.70	0.88

TABLE 3 Effects of Bicycles on Lane Capacity for Automobiles [*12*]

Bicycle Direction (Movement)	Lane Width in Meters (Feet)		
	Less than 3.36 Meters (11 Feet)	3.36 to 4.27 Meters (11 to 14 Feet)	More than 4.27 Meters (14 Feet)
Opposed (Interferes with traffic)	1.2	0.5	0.0
Unopposed (Does not interfere with traffic)	1.0	0.2	0.0

quarter of all automobile trips (*11*). For each 1.61 km (1 mi) during commuting periods, the congestion cost savings can be up to $0.32 per 4 km (2.5 mi) urban commute trip and $0.03 per 4 km (2.5 mi) urban noncommute trip (*9*).

Air and Noise Pollution Reduction

Walking and bicycling produce virtually no air or noise pollution. Because walking and bicycling replace short-haul trips, which cause the most pollution when done by automobile, pollution savings can be substantial. Cost savings attributable to walking and bicycling are estimated to be about $0.40 per 4-km (2.5-mi) urban commute trip and $0.24 for all other 4-km (2.5-mi) urban trips (*9,16,17*). Noise pollution savings range from $0.02 per 4-km (2.5-mi) urban commute trip and $0.01 per 4-km (2.5-mi) urban noncommute trip (*9,14,15,17,18*).

Parking Reduction

Commuters and shoppers alike receive free parking, a cost that is subsidized by all workers and shoppers who do not use automobiles (*7*). Free parking also results in environmental costs associated with greater impervious areas than would occur without parking spaces. Typical urban and suburban parking facilities range from $50 to $100 per month (*16,19,20*), or about $2.50 to $5.00 per urban commute trip and $0.25 to $0.50 per urban shopping trip. But at up to 20 bicycles per equivalent parking stall, the monthly cost is one-tenth that of commute and shopping trips done by automobile. Savings attributable to bicycling trips replacing automobile trips are $2.25 per 4-km (2.5-mi) urban commute trip and $0.225 per 4-km (2.5-mi) urban noncommute trip.

Driving Costs Savings

Driving or "user" costs of automobiles include insurance, gasoline, maintenance and repairs, and depreciation. Savings of $0.60 per 4-km (2.5-mi) urban commute trip and $0.40 per 4-km (2.5-mi) noncommute trip are estimated when walking or bicycling substitutes for automobiles (*9,21*).

Road Maintenance Cost Savings

Roads need to be maintained, but in most states and local areas road maintenance costs are borne by taxpayers through income, sales, and property taxes and not through road use taxes or fees. Some estimate this cost at about $0.02 per 4-km (2.5-mi) urban commute trip and $0.01 per 4-km (2.5-mi) urban noncommute trip (*9,14,16,17*).

Energy Consumption Reduction

By one estimate, 14 to 23 percent of the energy consumed in the United States is used by the automobile (*6*). Greater energy is consumed by automobiles in short-haul trips, typically done for shopping purposes (*22*). By some estimates, energy costs range from about $0.12 per 4-km (2.5-mi) urban commute trip to $0.10 per 4-km (2.5-mi) urban noncommute trip (*9,16,23,24*).

Pedestrian Safety Improvement

In the absence of separated pedestrian and automobile facilities, pedestrian casualties rise. In commercial areas, pedestrians and bicyclists using pedestrian ways face the highest risk of accidents, as shown in Table 4 (*25*). As seen in Table 5, in the absence of sidewalks and pathways, the risk of pedestrian accidents increases by 72 percent.

Cost-Effective in Transportation Investment Gains

The capital costs of new transportation facilities are rarely paid by users in relation to the amount of use, location, cost characteristics, or nature of use. Instead, transportation facilities are often paid through general taxation, such as income taxes, property taxes, and sales taxes. Those who use roads heavily, for example, are subsidized by those who do not use roads as much. The comparative capital costs of four types of roads are compared with such costs for bicycle ways and pedestrian ways in Table 6.

TABLE 4 Distribution of Pedestrian Exposure to Accidents by Land Use Type [25]

Land Use	Distribution of Pedestrian Exposure to Accidents
100% Residential	6.5%
Commercial	71.8%
Mixed Land Use	21.6%

TABLE 5 Relative Accident Rates Between Sidewalk/Pathway Provision and No Such Provision [25]

Environmental Characteristic	Relative Accident Weight
Pedestrian Accommodation	
No Sidewalks/Pathways	2.17
Sidewalk/Pathway	0.87

General Environmental and Social Cost Reductions

Automobile dependency leads to other environmental and social costs characterized as urban sprawl (*26*), degradation of neighborhoods (*27*), reduced residential and certain commercial property values (*7*), and decreased mobility for nondrivers including the poor (*28,29*), among other potential costs. At least one estimate conservatively places this cost at $0.23 per 4-km (2.5-mi) urban trip of any kind, which would be saved with walking or bicycling (*9*).

Summary of Savings Attributable to Walking and Bicycling

Table 7 summarizes many, but not all, of the costs that could be saved for each automobile trip that is replaced with walking or bicycling.

THE PLANNING POLICY FRAMEWORK

In effect, Table 7 shows the nature of subsidies accruing to private property relative to walking and bicycling. By not having motorists face these expenses, the costs are borne by the public and the avoidance of such costs are internalized as benefits by private property. If these costs were accounted for, land use patterns would change to reflect the true cost of automobile use relative to alternative modes. Public agencies need to devise ways to offset this inefficient outcome. A logical method is to exact the provision of pedestrian and bicycle access ways from new development. Such an exaction

TABLE 6 Comparative Costs Per Trip Mile Capacity of Transportation Facilities

Facility	Cost/1.61 Kilometers (Mile)[1]	Maximum Capacity Per 1.61 Kilometers (Mile) Per Hour[2]	Cost Per 1.61 Kilometer (Mile) to nearest $
Freeway Four Lanes	$11,143,000	7,600	$1,466
Secondary Highway Two Lanes	$1,393,000	2,800	$498
Bikeway Two 4-foot Lanes	$67,000	2,000	$34
Sidewalk Four-foot Path	$33,000	6,000	$6

[1] Cost per mile excluding right-of-way, California Department of Transportation 1972 figures adjusted to 1992 dollars [*1*].

[2] Based on level of service E for all facilities. [*14*]

TABLE 7 Estimated Savings Per 4-km (2.5-mi) Automobile Trip Reduced by Walking or Bicycling [9]

Cost Factor	Urban Commuting Trip	Urban Noncommuting Trip
Congestion Costs	$0.32	$0.03
Air Pollution Costs	$0.40	$0.24
Noise Pollution Costs	$0.02	$0.02
Parking	$2.25	$0.23
Driving Costs	$0.60	$0.40
Road Maintenance Costs	$0.02	$0.02
Energy Costs	$0.12	$0.10
Environmental/Social Costs	$0.23	$0.23
TOTAL	$3.42	$1.27

Source - Adapted from Reference [9]. Does not include facility capital costs or pedestrian and bicyclist casualty costs.

would have at least three important positive outcomes. First, congestion, pollution, and other adverse effects of automobile-dependency are reduced. Second, private development is made somewhat more responsible for otherwise contributing to the adverse effects of automobile-dependency. Third, improving access to property increases its value. In this regard, commercial and residential property would likely have the largest gains in value attributable to the provision of pedestrian and bicycle ways, although all property value is likely to gain in some respect (personal communication, Godfrey and McCurdy).

Providing multiple access ways requires comprehensive planning. Unfortunately, in most modern city planning since the Industrial Revolution, coordinated pedestrian and bicycle planning has been lacking. For the past generation, however this has been changing (*30*). Now, national planning organizations recommend pedestrian and bicycle access way planning as part of a community's comprehensive planning efforts (*5*). Many states require its consideration if not its outright provision (*31–35*). It has become commonplace to plan and develop pedestrian and bicycle routes that connect homes with schools, parks, shopping, bus stops, places of work, and community services (*5*). Whether or not it is explicitly stated, the city planning rationale for providing multiple access ways include:

- Improving interconnectness among land uses;
- Reducing negative environmental, social, and fiscal effects associated with automobile dependency; and
- Correcting inefficiencies associated with subsidies to automobile transportation facilities and modes.

Although there is no formal accounting of the trend, anecdotal evidence suggests that hundreds if not thousands of communities have plans that integrate automobile, public transit, pedestrian ways, and bicycle ways into an overall transportation scheme designed to maximize means of access to all parts of the community. Because of the Intermodal Surface Transportation Efficiency Act and the Clear Air Act amendments of the early 1990s, many more communities will prepare such plans.

The major obstacle to achieving good city form is not planning, but implementation (*36*). Implementation is achieved in two ways: (*a*) dedication of resources by the public through governmental agencies and (*b*) exactions from private property. If governments possessed all resources, no exactions would be needed from private property. The U.S. government does not have all the resources, nor does it need all the resources, to implement its plans. Actions taken by the government often improve the value of private property. Often, this value is not recaptured by government except in small increments (such as taxes) that do not recover any meaningful share of the value government creates. For example, the construction of a new highway serving landlocked property will usually increase the value of such property immensely, and the property owners may not have invested anything close to the cost of the highway. Other taxpayers have paid for the highway. It is not unreasonable, then, to secure an easement or dedication of ROW from benefiting property because the value of the remaining land attributed to the highway investment likely exceeds the prehighway value of the land dedicated.

Thus, local governments often require developers to dedicate part of their land to widen existing streets or create new ones. Moreover, developers are often required to pay for necessary on-street and off-street improvements (*37*). Sometimes dedication means maintenance of a facility. For example, it is common practice among many major cities to not only require private property owners to construct sidewalks, but to maintain them as well (*27,38*).

The constitutionality of such dedications has been challenged typically on due process grounds (*37*). In general, the courts have upheld the legality of dedications authorized by state statutes. The rationale is that such laws fall within the state's police power and are reasonably related to the public welfare (*37*).

Local government fails to meet important constitutional tests when private property is "taken" for public purpose and is thereby deprived of reasonable economic use, or when it receives no reasonable benefit from the exaction. Generally speaking, if property can be used to produce goods or services that are economically viable after the exaction, there probably is no constitutional taking.

Of more interest to city planners is the relationship between the exaction and the benefit. The easiest way to meet this test is to employ a rational nexus test, derived from development impact fee case law and statutes. The rational nexus test is met when (*39*):

- New development creates a need for new or expanded facilities, services, or other public good;
- The net cost of accommodating new development is determined; and
- New development is not assessed more than its proportionate share of the cost of the new or expanded facilities it is reasonably expected to use.

Development impact fees are applicable only to a small share of total development requirements imposed on new development. For example, a city wishes to create a bicycle pathway system that connects residential neighborhoods and commercial centers. A portion of the proposed path passes along a creek—a typical bicycle path location—on property proposed for commercial development. The city's comprehensive plan provides for the dedication of pathway ROW upon development of property in its path. Finally, because the city intends to construct the path after the ROW is acquired, it has not devised a development impact fee program and, instead, intends to acquire ROW through exactions. What should city planners do?

First, planners need only demonstrate that a share of the potential bicycle pathway traffic will become customers of the commercial development. Indeed, this may be presumed because commercial development depends on traffic of all kinds. Even when an argument can be made that a particular commercial tenant has no use for bicycle traffic this relationship is reasonable because tenants come and go but commercial activity per se depends on all forms of traffic.

Second, when the pathway is to be located in areas not allowed for development because of underlying environmental or setback restrictions, construction of the pathway could be viewed as a pure net gain by such development in two respects: (*a*) it could not use the area being developed as a pathway because of underlying environmental or setback restrictions, and (*b*) it will improve its traffic and thereby its commercial trade.

Third, given that commercial development already receives considerable subsidies or externalities, any value lost by the dedication of a bicycle pathway not otherwise recovered by increased traffic is likely not to be offset by the value of such subsidies or externalities. Table 8 illustrates the magnitude of total costs incurred by the public to subsidize or incur the externalities of commercial development. This table estimates the total cost of subsidies and externalities society bears from a general retail operation during its economic useful life. Conservative assumptions are used, such as: (*a*) the lower noncommute trip costs from Table 7 instead of the commute trip costs; (*b*) 300 days of use instead of 365 over the course of a year; and (*c*) 10 percent capitalization rate instead of a lower rate that has been effective in years.

The magnitudes may appear startling. Over its economic useful life, 1860 m^2 (20,000 ft^2) of retail space will impose more than $3 million in subsidy and externality costs on society including its taxpayers. (The choice of this example was stimulated by the recent Supreme Court decision [*Florence Dolan v. City of Tigard, Oregon, —US—1994.*] The case involved, in part, plumbing store owner Florence Dolan's objection to the City of Tigard's (Oregon) conditioning a variance to allow expansion of an existing store into a flood plain on the dedication of a 15-ft ROW for a bicycle-pedestrian path that the city would build at its expense. Dolan wanted to expand a retail store in downtown Tigard and add more parking spaces. The pedestrian-bicycle way would connect a high-density residential area directly to the development, effectively making the site among the most accessible in the downtown area. Chief Justice Rehnquist, writing for the majority, found that since the city did not demonstrate a rough proportionality between the traffic impacts of store expansion and the mitigation of such impacts associated with the pathway, the condition amounted to an unconstitutional taking. Oddly, the Supreme Court admitted that the city could have denied Dolan's permit outright and there would have been no case.) It is in local government's interest on behalf of society to mitigate the magnitude of these costs through expansion of less costly means of transportation. A calculation that compares the exaction value to the magnitude of societal subsidies and externalities benefiting the center would likely show that the exaction is less than such subsidies and externalities.

SUMMARY

This study reviewed the need for and the historical basis of separating pedestrian and bicycle traffic from streets and showed that providing these access ways is beneficial to the public and to private property. To review, these benefits include:

- Reduced congestion;
- Reduced air and noise pollution;
- Reduced public subsidies of parking;
- Reduced private driving costs;
- Reduced public road construction and maintenance costs;
- Reduced public and private energy consumption;
- Improved pedestrian and bicyclist safety;
- Improved environmental and social quality of life;
- Increased private investment in downtowns; and
- Increased private property value.

Implementation of plans that systematically integrate a variety of access ways will lead to economic improvements benefiting all

TABLE 8 Total Subsidies and External Costs of Commercial Development Calculated Over Useful Life of New Development

Square Meters (Feet)	Noncommuting Trips @ 40.67 Per 93 Square Meters (1,000 Square Feet)[1]	Noncommuting Costs @ $1.27/Trip[2] 300 Days/Yr @ 10% Capitalization Rate
1,860 (20,000)	813	$3,097,530
4,650 (50,000)	2,034	$7,749,540
9,300 (100,000)	4,067	$15,495,270

Sources
1 "Specialty Retail Center" (including quality apparel, hard goods, real estate offices) [*40*].
2 From Table 7 and assumes the average trip is 4 km (2.5 mi) attributable to the center.

property, especially commercial property gaining access to nearby customer bases found in residential areas and employment centers. At the same time, the provision of such ways will reduce the magnitude of the public's subsidies to, and adverse externalities that result from, automobile dependency.

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