Regional Parking Fee: A Potential Funding Source for Transit?

by
Jodie Mercer Misiak
BA in International Studies
The Johns Hopkins University, 2001

Submitted to the Department of Urban Studies and Planning
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Signature of Author_____
Department of Urban Studies and Planning
Department of Civil and Environmental Engineering
May 19, 2005

Certified by_____
David Geltner
Professor of Real Estate Finance
Thesis Supervisor

Certified by_____
Frederick Salvucci
Senior Lecturer of Civil and Environmental Engineering
Thesis Supervisor

Accepted By_____
Dennis Frenchman
Chair, MCP Committee
Department of Urban Studies and Planning

Accepted By_____
Andrew Whittle
Chair, Committee for Graduate Students
Department of Civil and Environmental Engineering

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Submitted to the Department of Urban Studies and Planning and to the Department of Civil and Environmental Engineering on May 18, 2005, in partial fulfillment of the requirements for the Degrees of
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ABSTRACT
From a regional mobility perspective, Chicagoland is in serious trouble. The current Chicago Transit Authority (CTA) funding shortfall is just the most recent evidence of major flaws in the region's transit governance and finance structures. Over the past two decades, there have been numerous reasons and opportunities to modify the regional approach to public transportation provision. Yet the Regional Transportation Authority (RTA), the area's transit oversight entity, never initiated a critical re-evaluation of its role.

Ideally, the central goal of the RTA would be to enable ample transport options throughout the region. However, rather than fostering enhanced service and increased ridership levels, the RTA funding process has resulted in performance declines and has encouraged a divisive political environment. This is ultimately damaging to both the economic health and the global competitiveness of the region.

Now, as Chicagoland faces a particularly severe budget crisis, it is time to finally begin the discussion that should have commenced two decades ago. The region must alter its approach to transit finance and an additional operations funding source must be identified immediately. The implementation of a region-wide, non-residential parking fee could help achieve both of these goals. When compared with the option of a sales tax increase, the advantages of a parking fee include:

- It would encourage a greater sense of regionalism
- It would have a rational nexus to auto mode externalities
- The statutory incidence would not be on the general public and the magnitude would be minimal
- It would serve as the impetus for a more merit-based approach to regional transit finance

Thesis Supervisor: Frederick Salvucci
Title: Senior Lecture of Civil and Environmental Engineering
Thesis Supervisor: David Geltner
Title: Professor of Real Estate Finance

Acknowledgments

"Why CANDLES?" objected Daisy, frowning. She snapped them out with her fingers. "In two weeks it'll be the longest day in the year." She looked at us all radiantly. "Do you always watch for the longest day of the year and then miss it? I always watch for the longest day in the year and then miss it."

Anticipation is a dangerous thing; it is all too easy to spend valuable time watching for the next BIG moment. In high school, we look forward to the glorious freedom of college. In college, we look forward to the instant when we are finally taken seriously as adults. For those of us in graduate school, it is tempting to spend every waking moment looking forward to thesis completion and the beginning of our careers. But as we wait for the ultimate justification of our hard work, we risk missing the things that make the graduate experience so enjoyable. For me, these have included…

My wonderful team of advisors: David Geltner, Mikel Murga, and Fred Salvucci. I can't imagine a more perfect combination of minds and personalities. Research meetings were always enlightening…and thoroughly terrifying. Hours spent enthralled by their ideas on transportation, finance, land-use, and politics would then be followed by the horrifying thought, "How do I fit it all in my thesis?"

My sponsors: The Department of Urban Studies & Planning and the Department of Civil & Environmental Engineering provided generous financial support throughout my stay at MIT, thus lifting a tremendous burden off my shoulders. During the thesis year, the Chicago Transit Authority provided both financial support and the opportunity to help solve a truly fascinating problem.

The Chicago Transit Authority: Frank Kruesi and his dedicated team of professional, including but certainly not limited to: Jeff Busby, Michael Connelly, Paul Fish, Linda Fuller, Jason Lee, Mark Patzloff, Jeff Sriver
I thank them for creating an ideal research setting during my stay in Chicago and for providing technical support once I returned to Boston.

As I explored the wonderful world of parking, valuable information was provided by the following individuals: George Brown, Richard Dye, Damian Kulash, and Donald Shoup

The people of MIT: The organizers and members of the Transit Group, for creating such a rich research environment. My officemates, for putting up with the frequent cries of distress (and of joy) coming from my corner of the room. Ed Holzwarth, for starting the mapping efforts. Carl Martland and the members of the 1.011 classes of 2004 & 2005, for introducing me to an abundance of potential case studies and for teaching me the importance of clear, simple explanation. And, of course, Ginny Siggia, for helping to keep all the plates spinning.

My parents, who always set the highest standards of dedication and integrity. From them I learned that the pursuit of excellence should always be enjoyed.

"We ought to plan something," yawned Miss Baker, sitting down at the table as if she were getting into bed.
"All right," said Daisy. "What'll we plan?" She turned to me helplessly: "What do people plan?"

Finally, thanks to the very patient Michael Hickin for helping me plan, both for the longest day of the year and beyond....

* Quotes courtesy of Fitzgerald, F. Scott. "The Great Gatsby," 1925

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1 Introduction

The purpose of this research is to examine the political & technical feasibility of a regional, non-residential parking fee and to establish it as an alternative transit operations funding source, specifically for Chicagoland's Regional Transportation Authority (RTA). In addition to generating much-needed cash flow, the fee should be viewed as part of a long overdue effort to reframe the regional approach to transit finance.

1.1 Objectives

- Determine whether a region-wide parking fee is an appropriate source of funding for public transit within the Chicagoland context

- Identify the most common public misconceptions about parking fees and provide proper clarification

- Analyze the incidence and actual magnitude, in an effort to gauge the potential sources and intensity of opposition

- Anticipate logistical challenges and prepare implementation strategies accordingly

- Demonstrate how the parking fee can act as the impetus for a more performance-based approach to regional transit finance

1.2 Motivation

1.2.1 The Benefits of A Healthy Regional Transit Network

While initially intended to enable greater mobility, the nation's automobile infrastructure is now characterized by growing travel delays, particularly in urbanized areas. In the Chicago Metropolitan area (popularly referred to as Chicagoland), total costs caused by congestion delays were estimated to reach $4.27 billion in 2003 (Texas Transportation Institute [TTI], 2005). The annual per capita congestion cost equivalent is $526 (and $976 per peak traveler). Given ongoing increases in roadway traffic, an additional 114 lane-miles[1] are needed annually to simply prevent congestion levels from becoming any worse. The actual expansion rates for the years 1995 through 2002 have fallen far short of this target, with an average of only 29 lane-miles constructed per year. Furthermore, most roadway expansions in recent years have been on the arterial network while major freeway expansions have lagged behind with an average of

[1] The lane-mile figures include both freeway and arterial street construction.

5 lane-miles constructed *annually* between 1995 and 2002. Consequently, there the ratio of available lane-miles to vehicle miles traveled (VMT) is steadily decreasing. In other words, roadway construction is not keeping pace with the steady growth in traffic.

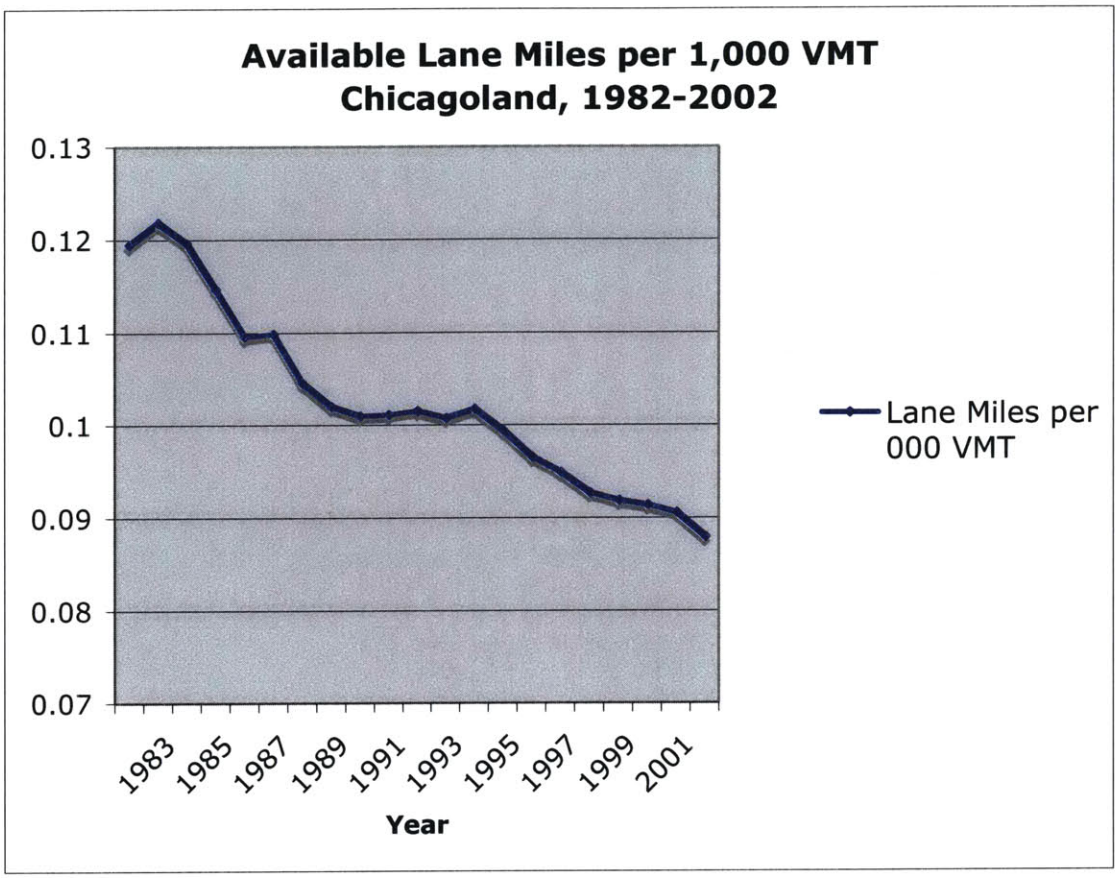

Figure 1.2.1: Available lane-miles per 1,000 vehicle miles traveled (TTI)

Although $4.27 billion is already quite high, the congestion costs could have been as much as $1.58 billion more if the region did not have such an extensive transit network. The entire RTA system carried approximately 582 million passengers during the year 2003[2] at a total public cost of approximately $907 million.[3] On average, this is the equivalent of 1.6 million unlinked trips per day. As an alternative to the extensive roadway construction mentioned above, existing congestion levels could be maintained by attracting an additional 182,000 transit riders daily, equaling a ridership increase of 11%. (TTI, 2005)

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[2] There are slight differences between the TTI estimate of 582 million unlinked trips and the estimates provided by the service boards.

[3] This amount includes sales tax revenues, local government contributions, and FTA paratransit funding. (Data submitted to State House Committee on Mass Transit, 2005)

Of course, since the cost of congestion is already high, the true goal should not simply be to maintain existing congestion levels. The Chicago area already has a travel time index of 1.57, making it the second worst in the nation. While a certain degree of congestion will always be present (Downs, 2004), more transportation alternatives are needed to provide at least some mobility relief. Since roadway expansion rates are so clearly inadequate, one would expect that transit has become a regional priority. Instead, Chicagoland's transit network continues to suffer from a chronic lack of political and financial support.

This is puzzling since, according to the figures cited above, justification of public transportation could be based on the congestion savings alone. Transit is a good value even without considering the likely environmental benefits.

1.2.2 Transit Operations Finance

All too often, there is a sizable mismatch between available funding levels and the operational needs of public transit.[4] While fare revenues may have been adequate to cover operational expenses during the first half of the twentieth century, thus sustaining a large number of private service providers, post-war transit budgets have required increasing levels of public subsidy. The reasons for this are not entirely straightforward. On one hand, transit farebox revenue levels are likely to have been impacted by increased automobile ownership, changes in urban land-use patterns, and construction of an extensive highway network. While the following details are specific to the Chicago case, they are representative of national phenomena:

- **Increased automobile ownership**: Over the period 1947-1997, the number of automobiles registered just in the city of Chicago increased by 75%. This was during a time when the population of the city actually *declined* by 25%.[5] As automobile ownership rose, the number of people relying upon transit for daily travel steadily declined.

- **Changes in urban land-use patterns:** A larger share of businesses & households are located outside of the urban core and property development patterns in these suburban areas are less amenable to transit usage. Over fifteen years ago, Cervero made the following observation about Chicago's suburban office parks:
"If a worker is motivated enough to patronize mass transit to work, typically he alights the bus off-site, facing long walking distances to his office, compounded by vast parking areas, wide boulevards, disconnected sidewalks, imposing freeway interchanges, and other physical barriers. Such physical settings create

[4] It is important to specify that this is entirely apart form the ongoing capital needs of a typical transit service provider; in most cases, completely separate annual budgets are developed for each.
[5] Chicago Transport Dataset, provided by Ian Savage of Northwestern University.

transit-hostile environments, dissuading even the staunchest transit advocates from busing to work." (Cervero, 1989)

- **Construction of extensive roadway network:** Over the period 1950-1975, at least 12 new freeways and tollways were constructed in the Chicago Metropolitan Area. These enabled more direct access, both to outlying parts of the region and beyond.

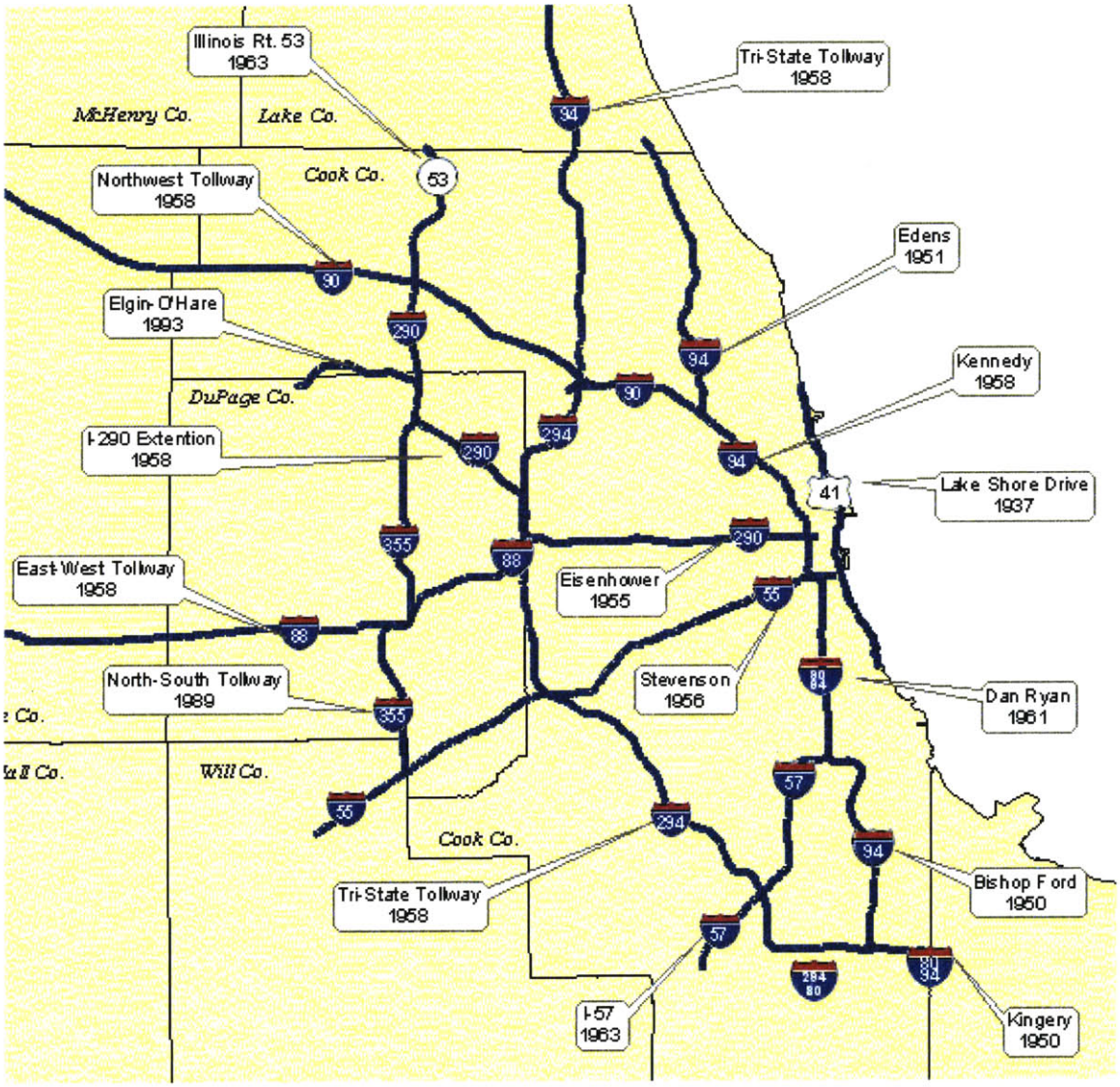

Figure 1.2.2: Major Chicago area expressways and date of construction (CATS MPO)

At the same time that ridership and farebox revenues were declining, transit deficits grew due to the gradual elimination of Federal operating subsidies, which

reached a peak of approximately $80 million in the late 1970s (equivalent to over $200 million in 2005 dollars). (CTA)

While the specific mix of causes is not entirely certain, there is no doubt that US transit agencies are currently unable to sustain service levels on fare revenues alone. Consequently, various sources are used to augment operating budgets, including annual subsidies from state and local governments. Additionally, dedicated local option tax funds, either generated directly by the transit agency or by the municipal government, are increasingly important to the survival of transit service.[6]

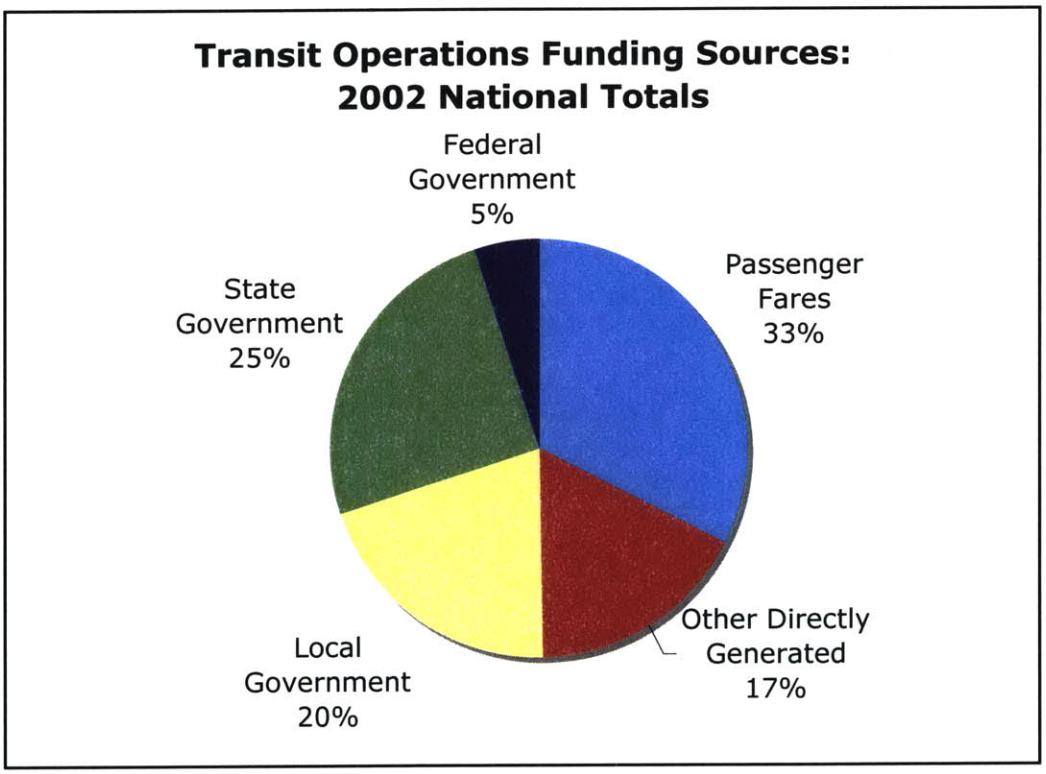

Figure 1.2.3: 2002 National transit operating funding sources (APTA)

Even with this mix of funding sources, many transit agencies throughout the county are still struggling to maintain existing service levels. A particularly dramatic case of this can be observed in the Chicago region.

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[6] In "Quiet Revolution," Goldman and Wachs define local option transportation tax as "a tax that varies within a state, with revenues controlled at the local or regional level, and earmarked for transportation-related purposes." In the specific area of operations financing, these have included sales taxes, motor vehicle registration fees, and gasoline taxes.

1.2.3 The Chicagoland Case

Transit finance has long been a contentious issue in Chicagoland, but the funding debate has received a great deal of public attention over the past year. The transit needs of the region are served by three public service providers: the Chicago Transit Authority (CTA, providing urban rail & bus), Metra (suburban commuter rail), and Pace (suburban bus). The service area for this regional network encompasses six counties along the southwestern shore of Lake Michigan. The RTA administers all operational subsidies for these three service boards. The RTA's operational funding sources include regional sales tax, State sales tax, municipal contributions, and a minimal amount of Federal paratransit funding.

During the annual allocation of funds, the RTA's primary concern is whether service boards have cumulatively achieved the mandated fare recovery ratio of 50%. If this one requirement is met and the budget proposals are acceptable, then most funding is automatically distributed between the service boards based on a twenty year old formula. This formula generally redirects most sales tax dollars back to location of origin of sale, i.e. most taxes raised in the suburbs are distributed to Pace & Metra while most taxes raised in the core are given to the CTA. A smaller portion of available funds is distributed at the discretion of the RTA board, primarily with an eye towards supporting capital projects or closing any funding gaps.

Recently, the loss of Federal operating subsidies plus the rising costs of federally mandated paratransit services has created a series of funding crises at CTA and Pace. At the same time, Metra has been increasing capital expenditures and is interested in more funding for operations. This has created new tensions over distribution of the limited RTA funding. Further fueling intraregional animosity is the fact that, under the 1983 RTA statute, recent regional population shifts would decrease Chicago representation on the RTA board.

At the core of the debate are CTA claims that the existing RTA funding procedure and governance is inherently flawed, essentially favoring suburban service at the expense of urban service. The CTA has repeatedly called for a formal re-evaluation of the out-dated distribution process, which was originally to have been scheduled for 1988. Understandably, suburban interests are passionately opposed to all policy alternatives that would direct fewer regional dollars to their budgets. At the time of this writing, the region had reached a point of political deadlock.

This most recent conflict has served to illustrate the true nature of transit provision in Chicago. Typically, more energy is spent on interagency & intraregional politics and significantly less on ensuring the health & interconnectivity of the larger network. Ideally, there should be more of a focus on providing fast, safe, reliable transit service for the entire region. However, beside the consideration of fare recovery, the RTA board is not required to pay

attention to the actual performance of the transit services. Since the establishment of the RTA funding structure, there has been a large increase in regional population (overall increase of 14% between 1983 and 2002) even larger increases in the regional number of households (overall increase of 17% between 1980 and 2000), and a national trend of more women entering the workforce.

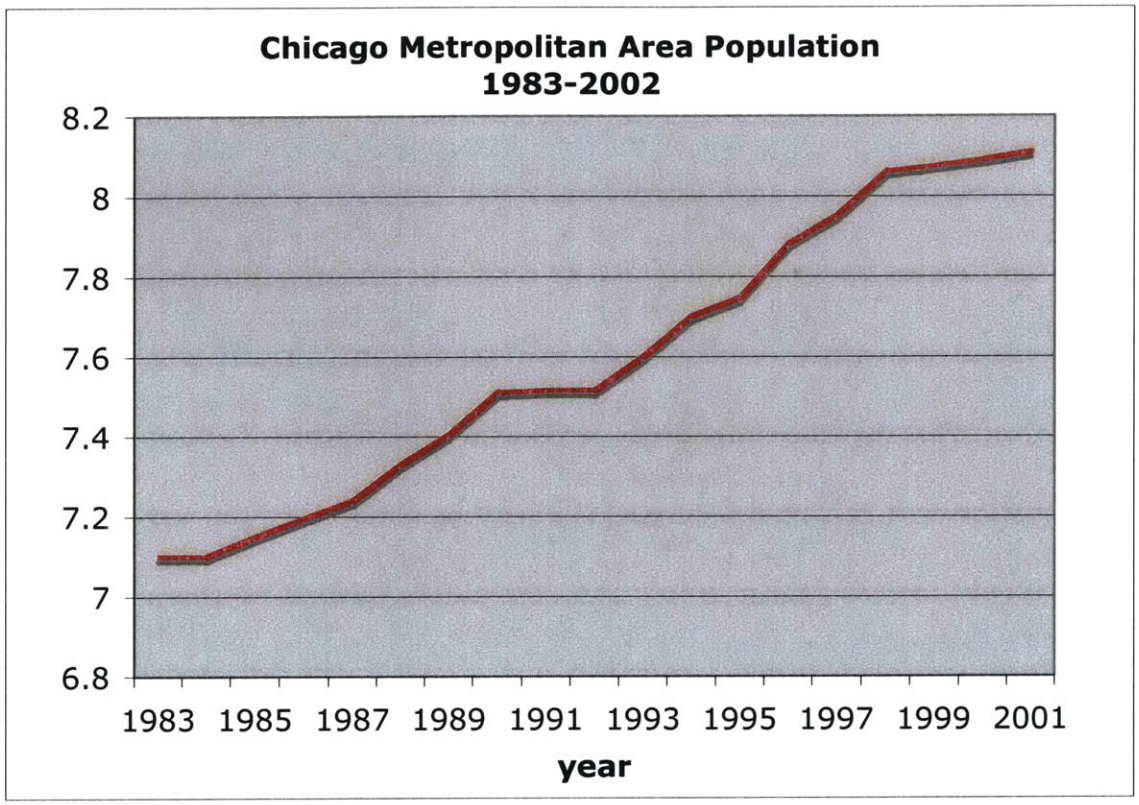

Figure 1.2.4: Regional population growth, 1983-2002 (TTI)[7]

[7] While the period 1980-2000 had an approximate population increase of 14%, the number of households in the 6 county region actually increased by 17%. It is likely that the number of households is a better measure of transit usage. (US Census)

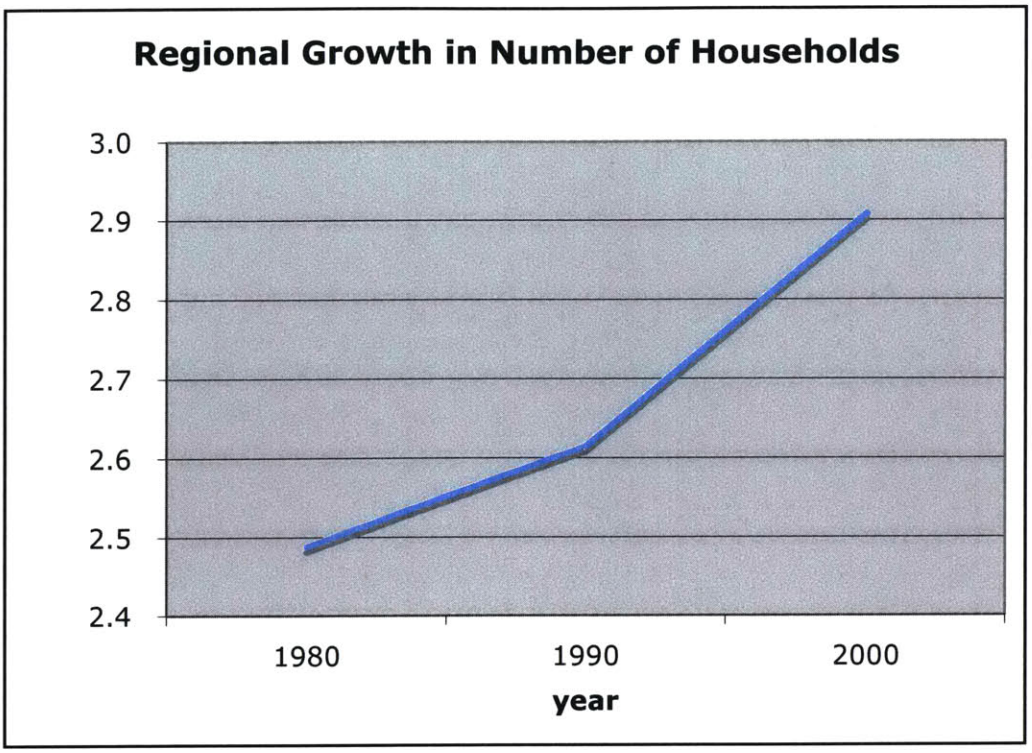

Figure 1.2.5: Regional Growth in Number of Households, 1980-2000

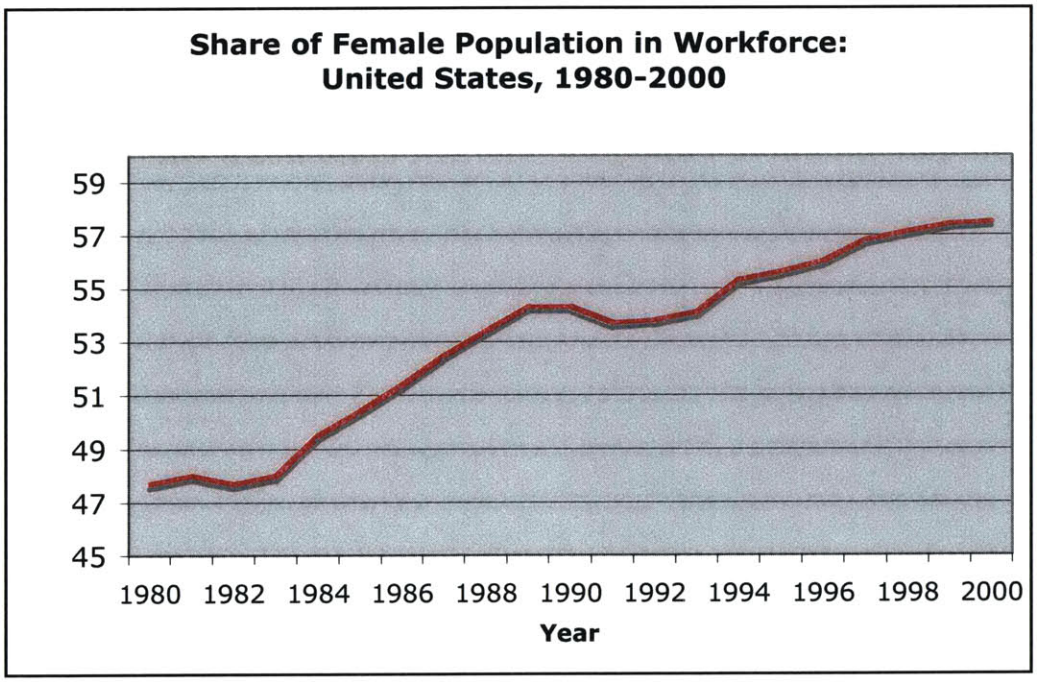

Figure 1.2.6: National trend of female workforce participation (US Department of Labor)

Consequently, it is reasonable to conclude that the demand for workplace access has increased significantly over the past two decades. Furthermore, it is equally reasonable to believe that transit could have captured at least a portion of this growing customer market. Although the number of suburb-to-suburb commutes has grown in recent years, a full 60% of the region's workforce still commute to central country locations (either from suburbs to Cook County or from one part of Cook County to another), showing a potentially untapped market for transit riders. (McGuckin & Srinivasan, 2003).

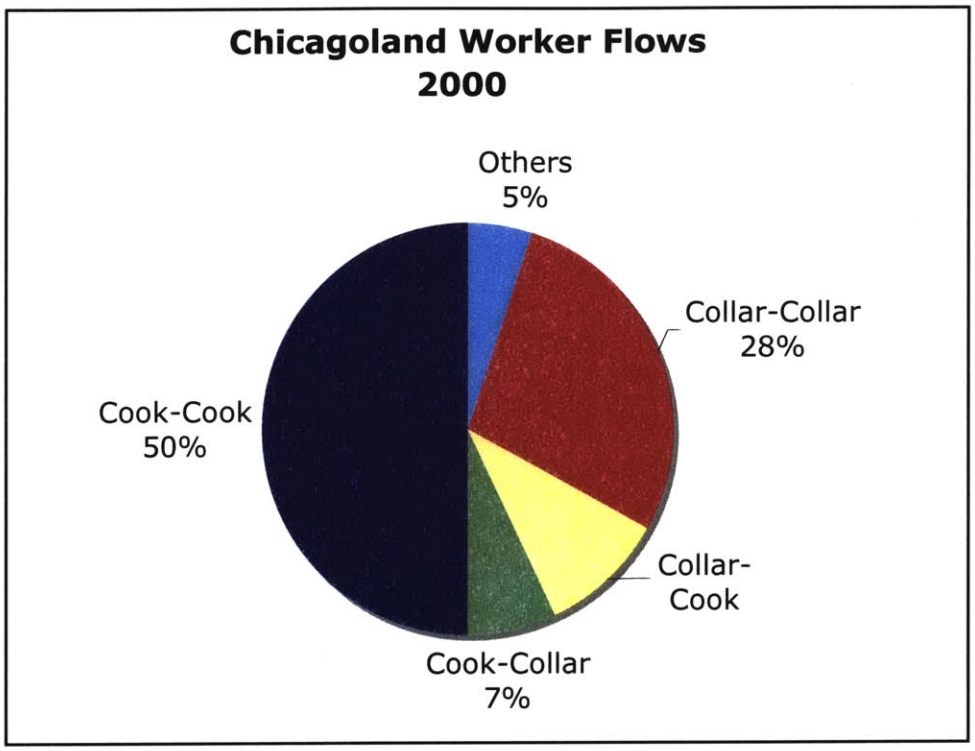

Figure 1.2.7: Chicagoland Worker Flows Between Cook and Collar Counties, 2000 (McGuckin & Srinivasan, 2003)

While the RTA is the nation's second largest system in terms of ridership,[8] only 17.7% of workers employed in the central county (Cook) actually rely upon transit for their daily commutes. (US Census, 2000)

[8] APTA, 75 Largest Transit Agencies, Fiscal Year 2002, Ranked by Passenger Miles (Thousands)

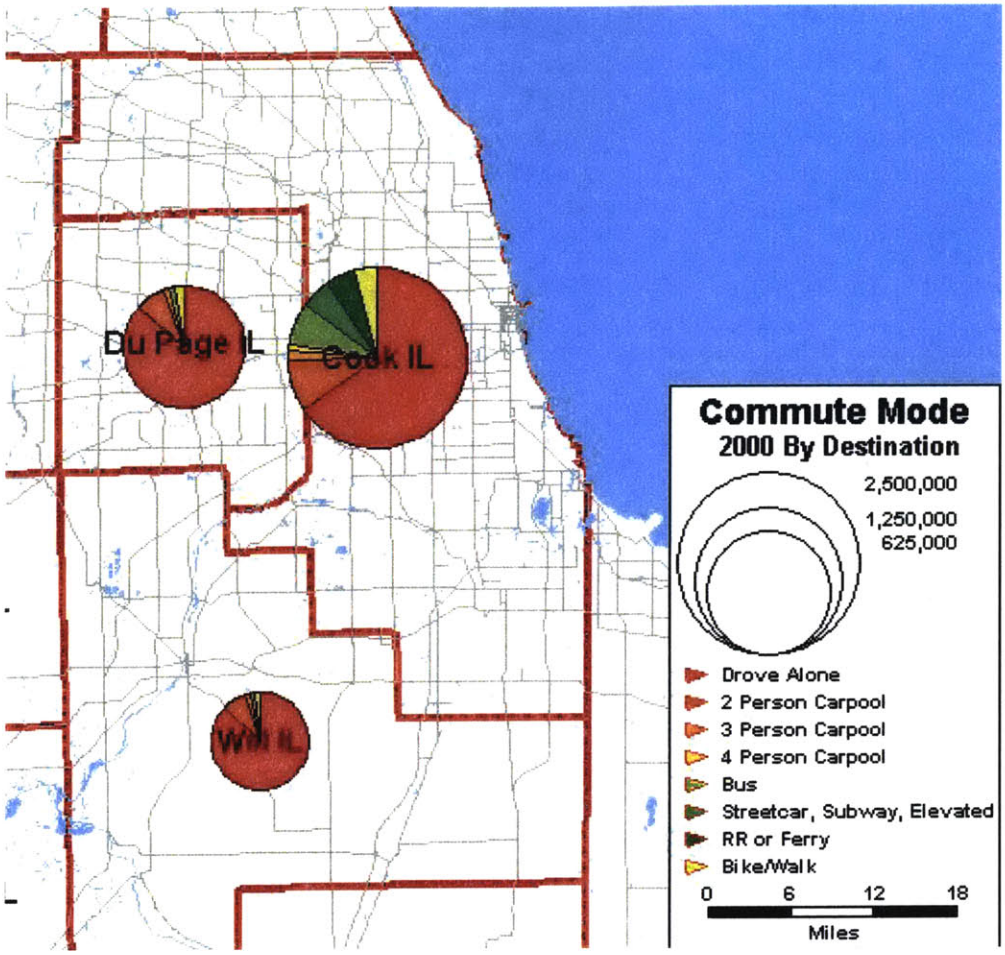

Figure 1.2.8: Cook County Modal Split (US Census, 2000)

National statistics indicate that other transit agencies throughout the country have experienced ridership growth during the same period. However, Chicagoland transit service has stagnated over the past two decades and regional ridership in 2003 was actually over 30% *lower* than it was in 1980.

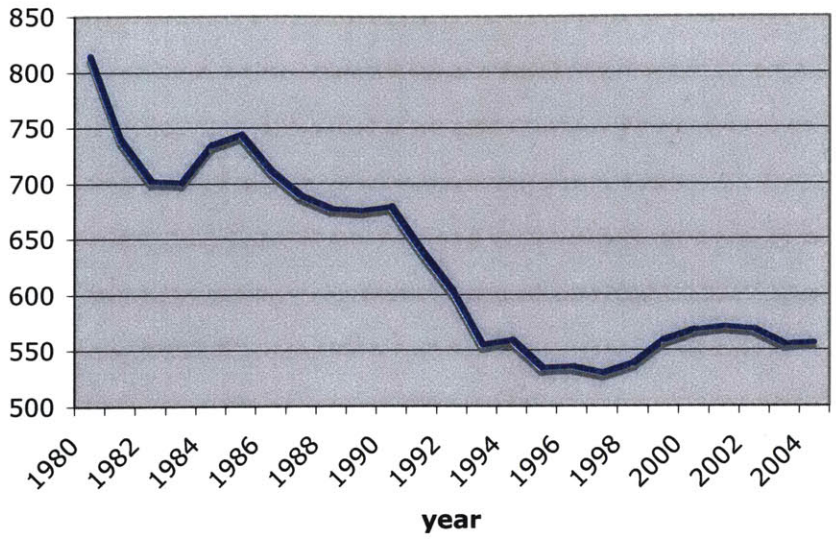

Figure 1.2.9: Chicagoland Regional Ridership Declines, 1980-2004 (CTA)

A private firm experiencing such disappointing performance would certainly reconsider its core strategies. The RTA, on the other hand, has continued with business as usual for the past two decades. This is despite the fact that a number of important factors have changed during this period. Since 1983, the transit funding context has changed in the following ways:

1) **Decline, and eventual elimination, of Federal operations subsidies**: The RTA had been receiving substantial operations subsidies from the Federal government since the 1970s. After reaching a peak of over $80 million in 1979 (over $200 million in 2005 dollars), Federal operations funding gradually declined until disappearing completely in the late 1990s. When the 1983 RTA reforms were drafted, the federal subsidy was still a major component of total regional transit funds. As the declines became more evident, it would have been logical for the RTA to formally consider how regional transit finance would be impacted and to adjust its procedures accordingly.

2) **Federal unfunded mandate for paratransit provision**: The passage of the Americans with Disabilities Act in 1990 marked a turning point in transit provision. On the capital side, all new vehicles and stations would have to meet accessibility guidelines, including the provision of elevators and lifts. This led to increases in both capital and operating costs. Additionally, transit agencies were required to provide complementary paratransit service for individuals that were unable to make use of fixed route service. In 2005 alone, regional paratransit provision is expected to create operating expenses of $52.2 million for CTA and $10 million for Pace (Metra currently does not provide paratransit service). Again, the RTA should have recognized the growth of paratransit responsibilities with a reconsideration of the existing funding process.

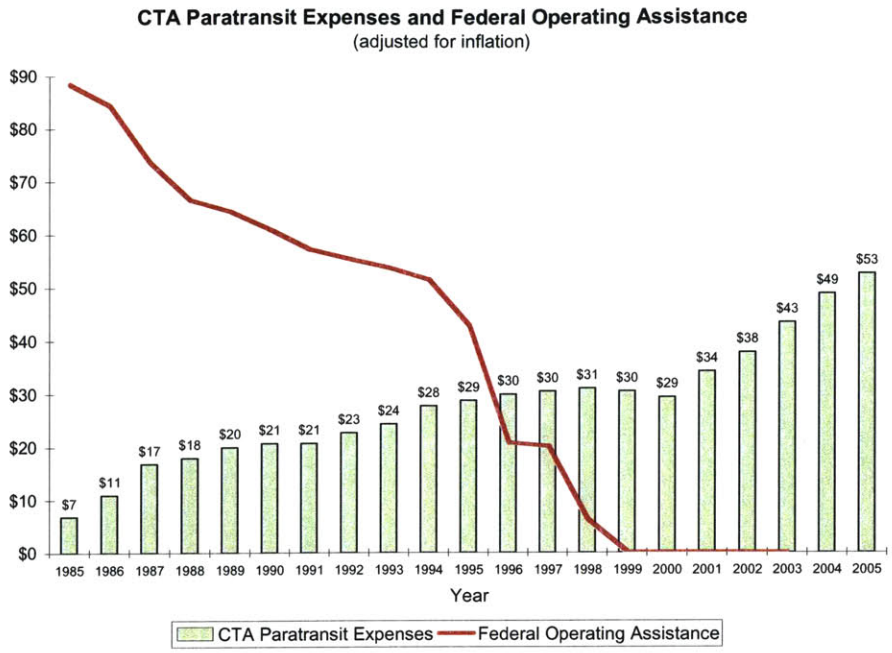

Figure 1.2.10: Comparison of paratransit expenses and federal operating assistance, 1985-2005 (CTA)

3) **Intermodal Surface Transportation Efficiency Act (ISTEA)**: In 1991, the Federal government passed legislation that provided regions with greater flexibility in the allocation of transportation capital dollars. The enhanced national approach to regional mobility was a perfect opportunity for the RTA to reevaluate its own role in the provision of capital and to shift its focus to operational concerns.

4) **Introduction of Illinois FIRST**: in 1999, the state established the Illinois Fund for Infrastructure, Roads, Schools, and Transit (FIRST). This was a five-year, $6.3 billion package of which $2.1 billion was devoted to public transit. This was largely used to leverage Federal funding for capital projects, thus reducing regional reliance on RTA funds for capital. Again, this provided an opportunity for the RTA to shift its focus away from capital and toward the challenges of operations finance.

5) **Evidence of Regional Mobility Declines:** Every year since the early 1980s, the Texas Transportation Institute (TTI) has produced its Urban Mobility Report, which compares the congestion levels of major US metropolitan areas. While this has shown consistent worsening of national congestion levels, it is particularly striking that the Chicago region has moved from seventh worst to second worst over the past 20 years.[9] Out of the worst seven metropolitan areas of 1983,

[9] These rankings are based on the travel time index measure, which is the ratio of peak-period travel time to the time that it would take to complete the same trip

Chicagoland was the only one to not have experienced ridership gains during the period 1983-2003.

6) **2005 CTA Budget Crisis:** The CTA's most recent funding crisis involves a shortfall of $82.5 million. According to the latest RTA Budget Review, this amount is required just to maintain current levels of service. If sufficient funding is not identified, the service board faces a combination of service cuts and fare increases.

Each event created a window of opportunity for the RTA to reconsider its approach to transit finance. Yet, no alterations were ever made and the region remains reliant upon a structure that does not adequately address mobility needs. The current funding crisis is a direct result of these failings.

Few transit finance stakeholders seem to believe that a win-win situation is possible. The limited supply of funding and political control is viewed as a sign that there will be some regional losers. As expected, the most vulnerable stakeholder groups are fighting to ensure that they do not fall within this category. However, if this adversarial mentality persists, a situation in which everyone loses is the most probable outcome. In order to foster a high level of mobility throughout Chicagoland, a more coordinated approach is necessary. This must include both the pursuit of new funding sources and a reconsideration of RTA priorities.

1.2.4 Prior Research

The financial challenges faced by Chicago area transit have been the focus of two recent theses by degree candidates in MIT's Master of Science in Transportation program.

"Evaluating the Costs and Benefits of Increased Funding for Public Transportation in Chicago" by Mark Schofield examined a variety of different operational funding scenarios for the CTA, with an eye toward the potential long-term, regional impacts of insufficient funding levels. He found that, given the looming possibility of fare increases and service cuts, there is sufficient justification for increased funding. The various direct and external costs[10] associated with ridership loss are estimated to exceed the actual costs of maintaining baseline service levels and fares. While the author does not focus specifically on the potential funding mechanisms, it is suggested that vehicle

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at free-flow speeds. Chicagoland's current travel time index value is 1.57, meaning that a trip that would take 20 minutes at free flow speeds would take over 31 minutes during peak travel periods.

[10] In his analysis. Schofield focused on both the direct loss in consumer benefit as well as the region-wide congestion and air pollution costs generated by trips shifted to auto.

registration fees, parking fees, and congestion charging could have greater public cost advantages than the existing sales tax.

"Paying for Transit Operations: Challenges and Solutions for the Chicago Transit Authority," by Julie Kirschbaum examined specific funding alternatives in light of their revenue potential, incidence, side effects, and political feasibility. It was recommended that alterations be made to the existing RTA funding distribution formula and that the sales tax rates in the region's wealthiest counties be increased.[11] In addition to these main policy measures, Kirschbaum also explored the revenue potential of (1) including a transit pass with all vehicle registrations and (2) imposing an off-street commercial parking fee throughout the region. While the transit pass was found to be a realistic option, data on the parking fee was not as readily available. In the end, it was acknowledged that more analysis would be needed before a solid conclusion could be reached.

It is my intention to build upon the work of my predecessors with a more focused examination of a specific funding option: a per-space fee levied on all non-residential parking facilities throughout the region. It is hypothesized that this type of local option funding may be the most appropriate solution given both the regional context and immediate transit finance needs.

1.3 Methodology

1.3.1 Identifying Solutions: A True Regional Mentality

This section presents the Chicago transit funding case within a regional context. Using recent census data and drawing upon regional development literature, it is demonstrated that the urban/suburban divide oversimplifies the reality. This supports the idea that the funding crisis can be most appropriately handled on a regional scale, preferably in a manner that does not exacerbate pre-existing intraregional tensions. Such policy conditions eliminate some of the most well known – and fiercely debated - funding options. Through this regional-level analysis, the parking fee emerges as an option that may be politically feasible and could achieve desired funding levels.

1.3.2 Common Misperceptions of a Parking Fee

This section provides a more in-depth examination of political feasibility. Four of the most likely parking fee misconceptions are identified and logical counter-arguments are developed. If broad political support is to be attained, these arguments should be part of a regional public awareness campaign. The four misconceptions are:

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[11] Currently, the distribution formula is designed to direct most sales tax revenues generated in the outer suburbs towards Metra & Pace. At the same time, consumers the suburbs pay a lower sales tax rate (0.25%) than the rate faced by consumers in the City of Chicago.

- The parking fee will primarily affect the outer counties
- The parking fee will force business activity relocation
- The most effective and appropriate use for a parking fee is roadway expansion
- The parking fee will serve as a travel demand management tool

1.3.3 Incidence & Magnitude: Property Level Impact

One of the advantages of the parking fee is the fact that the statutory incidence is not directly on the general public. Rather, the fee would be levied directly on commercial property parking facilities. Since commercial property owners will be the ones actually receiving the annual bill, the real estate sector is expected be the most vocal opponent of the policy. It is probable that this particular group will argue that the fee will (1) cause serious harm to property-level income and (2) the property owner will be forced to pass a major financial burden along to tenants, customers, and employees.

First, the theoretical foundation for these claims is reviewed. From an economic perspective, it is possible that the owner will pass the fee along, but he must also deal with the market response. Due to short-run shifts in demand and long-run changes in property supply, the ultimate market equilibrium is expected to be one in which at least a portion of the parking fee is absorbed.

Next, the actual magnitude of increased real estate expenses is determined and examined within the context of several property cases, including:

- Urban Core Commercial Facility
- Urban Fringe Retail Property
- Suburban Office Property
- Suburban Retail Property

The property-level costs and revenues for each of these cases are based upon market-wide data from CB Richard Ellis and details available through Chicago-area market listings.

First, assuming that the parking fee costs will be completely absorbed by the property owner, the impact on net operating income (NOI) is determined. Then, assuming that the costs may be at least partially passed along to leaseholders, the impact on rental rates is then calculated. Finally, assuming that a portion may be passed along to customers, there is a consideration of the actual impact on the costs of retail goods. Increases in retail prices are then compared with the impacts of potential sales tax increases.

This analysis, based on the perspective of existing property owners, is then used to make predictions about the possible behavior of those seeking to develop property in the future. In addition to the actual parking fee cost, the market impacts of associated transportation improvements are considered. In this part of

the analysis, it is assumed that the parking fee could eventually result in greatly enhanced public transportation alternatives and considerable improvements in congestion levels. This is expected to have implications for both property values and location decisions.

1.3.4 Implementation Challenges

Efforts to (1) counter general misperceptions and (2) clarify the fee's actual incidence & magnitude will help boost its profile as an implementable option. However, the implementation stage will involve its own specific set of challenges. These include:

Legal

It is possible that the fee will be challenged on the legal grounds that it violates Fifth Amendment restrictions on takings. Specifically, the transit authority may be required to prove that there is both logical nexus and proportionality between the fee and the actual act of providing parking spaces. The legal details will first be defined through a review of relevant court findings. Then, an argument for both logical nexus and proportionality will be developed based on a comparison between the total unaccounted societal costs of commercial development and the actual parking fee rate levels. It is notable that, in the case of a tax, the transit authority does not have to demonstrate such a connection. Yet, this added complication of a fee is more than justified by the fact that it (a) infuses the funding strategy with greater public legitimacy and (b) enables a much broader application of the fee, resulting in a larger revenue stream at lower rates.

Political

The way in which parking fee revenues are distributed will likely cause numerous debates. Although it would be easiest to channel all revenues (including both the parking fee and the existing sales tax) into the same general fund and continue use the existing RTA distribution formula, this approach is shown to be flawed in two distinct ways:

- While the method of revenue collection would be rationally connected with the negative mobility externalities of auto-oriented development, the existing RTA distribution formula has no logical association with actual mobility goals.
- An extremely high parking fee rate would be required just to ensure that the CTA's share is large enough to avoid cutbacks and would not be nearly enough to support service improvements. At the same time, Metra would get more than it can realistically use.

Since reliance on the existing formula would be ineffective, two alternate options are considered:

Channel all revenues (parking fee and existing sales tax) into the same general fund, but completely overhaul the RTA distribution formula.

OR

Channel the parking fee revenues and the sales tax revenues into separate funds. While the sales tax revenues continue to be distributed based on the existing RTA formula, the parking fee revenues would be distributed based on a new performance-based formula. This could include distribution based on:

- Absolute annual values of performance measures such as ridership, vehicle miles traveled, or vehicle hours for each of the three service boards.
- Relative increases in key performance measures for each of the three service boards.

Additionally, a portion of parking fee revenues could be reserved for a special regional mobility fund that provides funding to counties and municipalities for specific mobility-enhancement projects.

The financial and political implications of these two options are explored.

Institutional

Assuming that the RTA administers the parking fee using a more performance-based distribution formula, certain institutional changes will be necessary. Whereas the RTA has previously had little interest in each service board's actual performance levels, the new distribution approach would require greater accountability. Amendments to the RTA's governing statute will be necessary to reflect this added responsibility for regional mobility. The potential long-run implications of this will be explored.

Additionally, it will be important to find the most efficient and inexpensive way to implement the fee. Through an examination of the existing Perth case study, a basic implementation approach is determined.

1.4 Overview of Report Structure

Chapter 1: Introduction
Chapter 2: Regional Transit Finance: Identifying the Problems
Chapter 3: Identifying Solutions: A True Regional Mentality
Chapter 4: Common Misconceptions
Chapter 5: Incidence & Magnitude: Property-Level Impact
Chapter 6: Implementation Challenges
Chapter 7: Conclusion

1.5 Chapter Summary

Chicagoland is currently facing a combination of high roadway congestion and a pending transit finance crisis, which will ultimately lead to even greater congestion levels. Rather than just a one-time event, the crisis is just the latest evidence of a deeply flawed regional approach to operations finance. The region needs both an additional operations funding source and a fresh approach to transit finance. It is possible that a regional, non-residential parking fee can serve both of these needs.

2 Regional Transit Finance: Identifying the Problems

"I believe in the next 18 months, we also have to engage the entire region in some consensus building to really think through the kind of revenues we need to support transit in the future, and also to make sure that the wonderful expansions that are to be planned everywhere really have an opportunity to be implemented." – Illinois State Representative Julie Hamos (Seidenberg, 2005)

An angry Metra chairman Jeffrey Ladd said his agency will refuse to work with the Chicago Transit Authority to seek more transit dollars from Springfield. Instead, Metra will focus on making 'sure that what we have isn't taken away.'" (Groark, 2004)

2.1 Background on the Budget Crisis

2.1.1 An Historical Overview of the CTA's Operating Budget

Created in 1947 through a consolidation of Chicago Surface Lines and Chicago Rapid Transit (and, in 1952, the addition of Chicago Motor Coach), the CTA was intended as a public reform of the declining private transit companies. In its early years, the CTA was expected to cover all expenses through transit revenues. However, this became increasingly difficult in the post-War years as transit demand declined and the basic costs of system operations grew, due at least in part to rapid increases in national wage rates.[12] During this time, the CTA was also covering debt service on the bonds used to finance the original private transit consolidations. A more serious budgetary situation was likely averted due to greater efficiencies through both technological improvements (enabling the agency to reduce per vehicle staffing requirements) and elimination of less productive routes. However, despite these efforts, the CTA found in 1957 that a $0.05 fare increase (from $0.20 to $0.25) would be required to avoid a budget deficit. Mayor Richard J. Daley endorsed a proposal to avoid this increase through the use of state gasoline taxes, but state politics did not work in the CTA's favor.

The CTA continued to face deficits through the late 1960s and responded with a combination of fare increases and service reductions. By 1970, another fare increase (from $0.40 to $0.45) was under consideration and, once again, the possibility of supplementing the operating budget with gasoline tax revenues was discussed. As before, Mayor Daley was a supporter of this scheme, but this time the governor also issued a strong endorsement (the 1957 proposal had only lukewarm gubernatorial support). However, as was the case 13 years prior, the plan was rejected by the legislature. Without a more stable dedicated funding

[12] During the period 1948-1957, real wage rates rose 30% nationally. (Savage, p. 189)

source, the CTA continued to rely on state subsidies to deal with frequent funding gaps. (Allen, p.115) Since such subsidies were not guaranteed and relatively small, the long-term sustainability of services was constantly in question and, by necessity, the occasional fare increase was still a major component of the CTA's finance strategy.

By the early 1970s, a task force had been appointed to study the transit problems and ultimately issued a report entitled "Crisis and Solution: Public Transportation in Northeastern Illinois." This led to the establishment of the Regional Transportation Authority (RTA), which was designed to solve the chronic problems of both the CTA and the private regional commuter services throughout the six Chicagoland counties. Any future State or Federal assistance to the CTA would be directed through this new layer of government. With the creation of the RTA, the following funding sources became available to the region's transit providers:

- 3/32nd of the net revenue from state sales tax collected in the region
- $14 of each motor vehicle registration fee in the City of Chicago
- municipal contributions of at least $5 million annually (primarily from City of Chicago and Cook County)

(Tecson, 1974)

The new structure also created options for two additional funding sources, to be implemented at the discretion of the RTA: an off-street commercial parking tax and a 5% gasoline tax. Ultimately, only the gasoline tax option was exercised, amidst much controversy in 1977. Shortly after RTA was created, the Federal government also began to offer Section 5 funds, which were intended to provide operational assistance to transit providers throughout the country. On the surface, this combination of funding had the potential for giving the CTA the financial stability it had lacked in previous decades. However, RTA was plagued by institutional problems and there seemed to be little regard for cost-effective management. As major subsidies flowed into the organization, large amounts were spent to support failing suburban services (Allen, 1996) and enhance labor compensation (Savage, 2004).

In 1979, the gasoline tax was eliminated and the sales tax structure was altered to resemble its current form: the RTA levied a 1% sales tax on the City of Chicago & Cook County and a 0.25% sales tax on the collar counties. At that time, the 3/32nd state sales tax subsidy was eliminated. Officially, the switch from a uniform regional sales tax contribution (3/32nd for all 6 counties) to a tiered structure (in which collar counties contribute significantly lower proportions) was intended to account for differentials between urban and suburban usage of the transit system. However, rather than being a simple practical matter, this decision was politically charged and set the stage for future urban-suburban conflicts.

Since initial sales projections were incorrect, the new structure actually resulted in lower revenue than under the earlier funding structure, forcing several increases in CTA's base fare and major service cuts during the early 1980s. [13]

In 1983, a regional movement for more drastic transit reforms resulted in a legislative decision to decentralize operations amongst three major service boards:

CTA: Structure of the CTA remained unchanged. Continued to provide urban rail and bus service.
Metra: New provider of suburban commuter rail services.
Pace: New provider of suburban commuter bus services.

	Chicago	Suburban Cook	Collar Counties
CTA	100%	30%	0%
METRA	0%	55%	70%
PACE	0%	15%	30%

Figure 2.1.1: 85% sales tax distribution formula (RTA)

With the creation of two new transit boards, it was necessary to determine a framework for the division of annual RTA subsidies. CTA's portion of regional sales tax revenues was based on a fixed formula that effectively made the CTA budget highly dependent on the economic health of the region's core (City of Chicago and Cook County). In theory, this would yield reasonable revenues as long as sales in the city and inner suburbs remained consistently strong. While 85% of the sales tax revenue was divided based on the formula outlined in Figure 2.1.1, the remaining 15%, after covering RTA administrative expenses, was intended to be distributed at the discretion of the RTA board. Furthermore, the State would match 25% of regional sales tax revenues with subsidies from the State's General Revenue Fund (this transfer from the State to the RTA is referred to as the Public Transportation Fund). This funding was also to be distributed at the discretion of the RTA. Originally, this restructuring was to be reviewed after six years, but such an analysis never occurred.

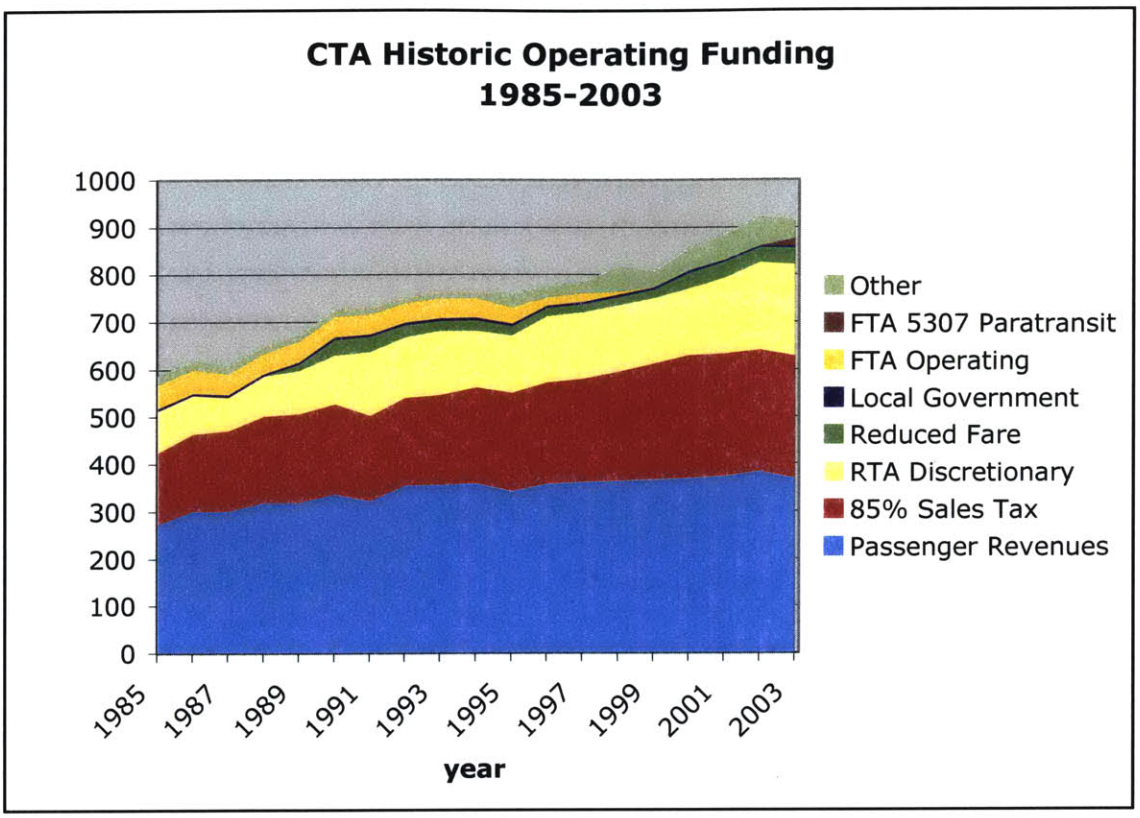


Figure 2.1.2: CTA Historical operating funding (House Committee on Mass Transit, 2004)

In the beginning, the new formula seemed to work, but it was actually constructed upon an unstable and unpredictable foundation. An often-overlooked aspect of the finance debate was that, during the early years of the modified RTA structure, the Urban Mass Transit Administration (UMTA)[14] provided a portion of the CTA's operating budget. In 1985, this amounted to approximately 8.6% of total CTA revenue (which was equivalent to 58% of the RTA discretionary funds to CTA for that year or 33% of the total sales tax revenues distributed to CTA). However, the Federal operating component steadily declined over the next decade until, in 1999, it were completely eliminated. So, for at least a brief time, the combination of federal subsidies and RTA discretionary funds served to fill the CTA's financial gap left by the poorly constructed distribution formula. However, declines in Federal subsidies and poor returns from City and Collar County sales tax gradually revealed the true weaknesses in the formula. At the same time, ridership was declining and paratransit & other federal requirements to improve accessibility were becoming major expenses.

[14] In 1991, the Urban Mass Transit Administration was renamed the Federal Transit Administration (FTA).

When adjusted for inflation, the Federal subsidies received in 1979 (the peak of subsidy levels) would be equivalent to over $200 million in 2005 dollars (CTA). If the Federal program had actually continued at these levels, CTA's budget could cover current operating needs and provide improved service.

The discretionary funding was officially intended to fill budgetary gaps for any of the three service boards, not just the CTA. However, in practice, a large portion has always gone directly to the CTA since the formula funds never sufficiently covered its financial needs. (Figure 2.1.3) At the same time, Metra has received operating subsidies beyond its needs, which it has converted to capital improvements.

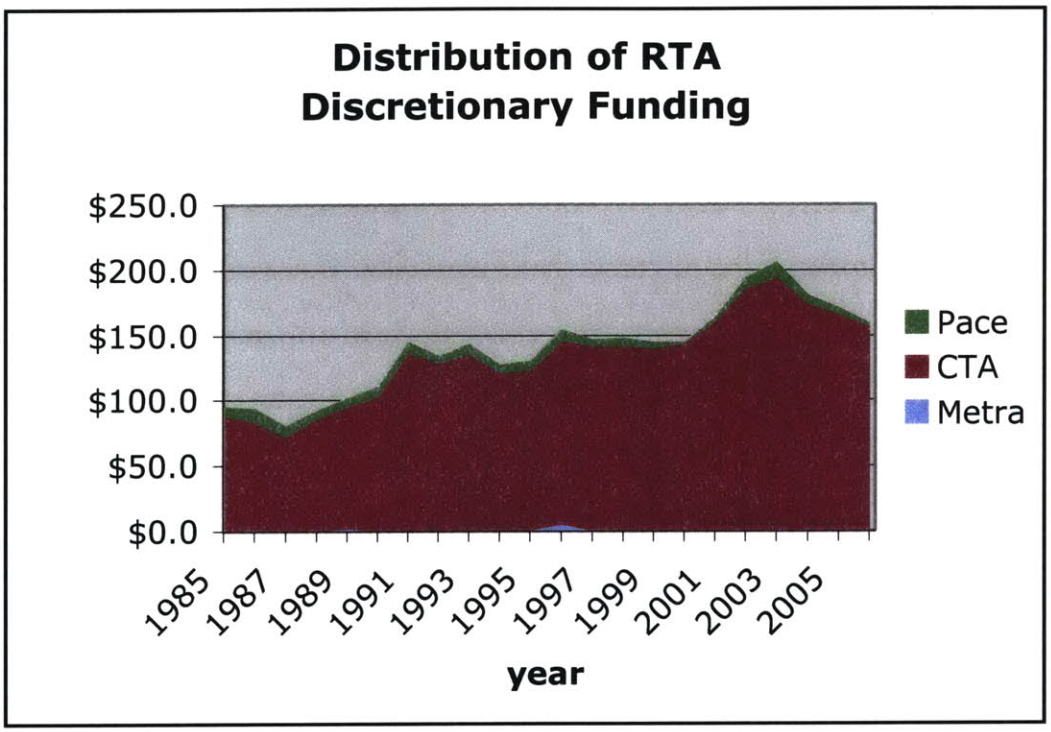


Figure 2.1.3: Distribution of 15% Discretionary Funding (CTA)

On the surface, this seems like a reasonable system. Although the dedicated funding has proven to be chronically inadequate, the discretionary funds ensure that CTA ultimately receives a sufficient amount of funding. However, the fact that so much of the discretionary funding is needed just for one of the service boards is a clear indication that there are fundamental flaws in the base distribution formula. Overall, the CTA depends heavily upon a very unreliable combination of funding sources. While its share of formula funds is guaranteed (100% collected in the City and 30% collected in Suburban Cook), the actual amount of tax revenue collected is not. While it appears that the share has been experiencing steady growth, the purchasing power of these funds had historically shown significant declines (Figure 2.1.4). A recent upturn in CTA's sales tax

component should have been a welcome development, but instead it meant declines in the discretionary funding. Between 2004-2006, it is projected that CTA discretionary funding will be reduced from $194 million to $156 million, offsetting expected increases in sales tax revenue. Since Metra does not rely on discretionary operating funding, its total funding will continue to increase during this time.

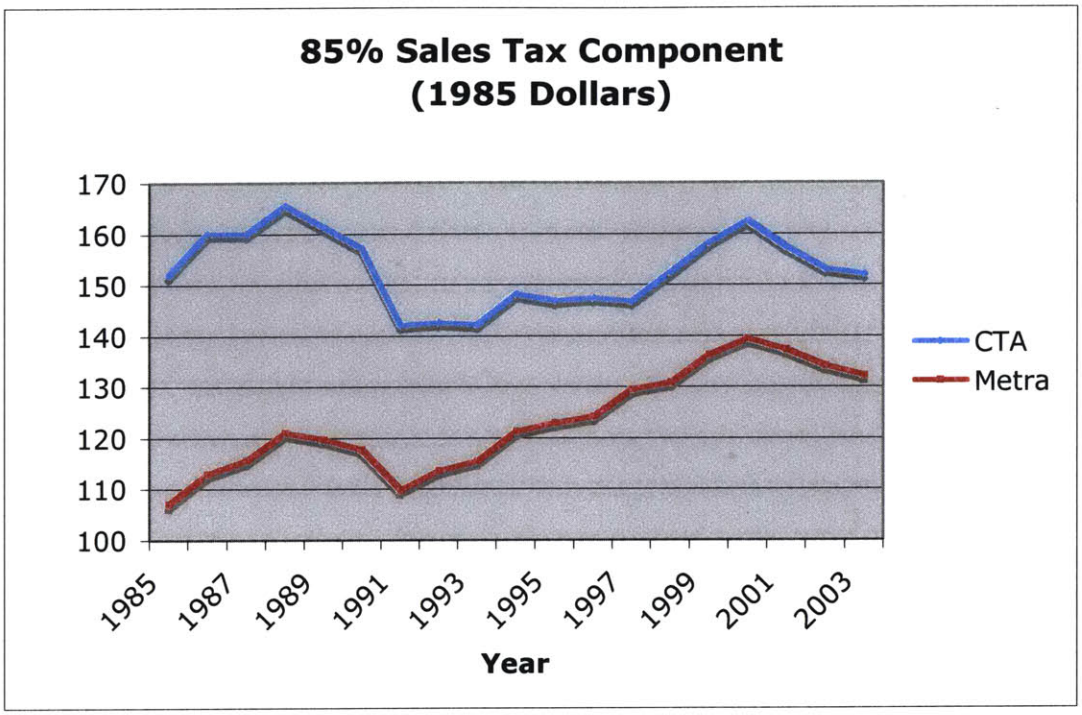
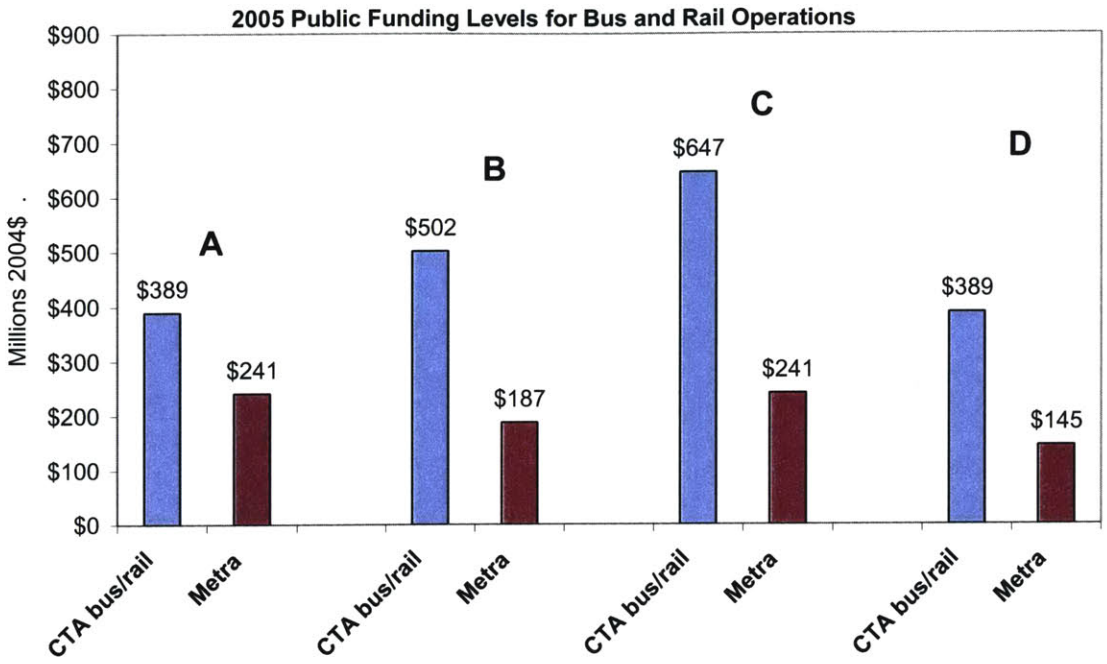


Figure 2.1.4: Comparison of 85% sales tax component of operating funds in 1985 dollars (House Committed on Mass Transit, 2004)

When taken as a whole, the CTA's budget growth has not kept pace with either inflation or the rate of growth experienced by Metra. According to the CTA, the actual funding need is closer to $250 million annually.[15] This estimate is based on the idea that CTA's budget would be this much larger if had historically grown at the same rate as Metra's. Additionally, if the CTA's fares had grown at the same rate as Metra's, they would currently be $1.10 instead of $1.75. (CTA, 2004) This combination of more modest fares and increases service funding could have prevented at least a portion of the ridership loss that occurred since 1983.

[15] Even if CTA's budget had simply kept pace with inflation, there would be at least $100 million more in the current budget.



Key:

A – Actual
B- If funding had grown at the rate of inflation since 1985
C- If funding had grown at the same rate as Metra's funding since 1985
D- if funding had grown at the same rate as CTA's total funding since 1985

Figure 2.1.5: 2005 Public Funding Scenarios for CTA & Metra (CTA)[16]

For most of its history, the financial security of CTA's operations has never truly been guaranteed. Most efforts to establish reliable funding flows have been generally unsuccessful. Thus, it is not surprising that, at least in recent years, the CTA so frequently seems to be in "crisis mode." Last year's fare increase was just the latest attempt to counter the effects of budgetary erosion. Even more threatening, the current RTA statute requires that the membership of the RTA board be adjusted to reflect population, regardless of local tax contribution levels, ridership, or fare contribution. If Chicago loses a member from the RTA board, it will lose its ability to block a supermajority vote. In such a case, the discretionary funds that have been so essential to the CTA could be shifted elsewhere. This is a solid threat since the RTA has publicly proposed that CTA's share of regional

[16] Includes federal, state and local operating assistance. CTA figures are for bus and rail services. CTA does not receive any dedicated funding for special services such as paratransit. Metra experienced an inflation-adjusted increase of 32% between 1985 and 2004; CTA bus and rail experienced an inflation-adjusted loss of 21%.

funds (69% in 1983, 58% today) should be reduced to 43%. From the CTA's perspective, systemic change is long overdue.

2.1.2 The Suburban Perspective

While the previous section focused specifically on the history of the CTA's operating finances, this section broadens the view with an examination of what has typically been considered the suburban perspective on transit finance.

For most of the 20th century, the suburban counties adjacent to Chicago bore no more responsibility for urban transit than did the rest of Illinois. Even after the CTA was established, suburban residents faced the straightforward choice between using the system and not using the system. Those that opted to conduct most of their travel by automobile, a segment of the population that grew rapidly during the post-War years, had ready access to subsidized roadways and could simply ignore the increasingly worsening condition of the transit network

However, with the creation of the RTA in 1973, the CTA's budget problems were suddenly transformed into a regional concern. This was, in part, intended to lift some of the burden off distant Illinois counties that did not directly benefit from the existence of transit.

"One of the fundamental principals which the RTA established was that transit in Chicagoland was a problem to be resolved within the metropolitan area. This meant that, except for small subsidies from the state, almost all of the costs of building, operating, upgrading, and running transit would come from taxpayers within the six counties of northeastern Illinois." (Allen, 1996, p. 161)

However, many residents of these six counties were not convinced that the transit system benefited them any more than it did the downstate counties. The 1974 RTA referendum results showed that only 34.2% of suburban voters were in favor of establishing the organization.[17] Opposition to the use of funds generated in the suburbs (such as sales tax or gasoline revenues) for urban transit was high, especially in the areas farther away from the urban core. Consequently, a large number of people within the RTA service area were predisposed to intense dislike of the organization.

It was not until 1977 that the RTA actually acted on its power to impose a 5% gas tax, in the hopes that this additional dedicated revenue stream would alleviate lingering financial problems. As expected, most of the suburban RTA board members were opposed and authorization was only possible because the representative from the suburb of Evanston sided with urban interests (Allen). However, opposition remained strong and the gasoline tax was replaced in 1979 with a new sales tax structure that was much more favorable to the suburban

[17] This was balanced by an urban vote of 71.1% in favor of the RTA (28.9% opposed), resulting in an overall regional approval of only 50.6%.

counties. However, the adoption of the new funding structure actually resulted in a lower revenue stream, thus impacted all RTA service. Ironically, the suburbs may have suffered more from the gasoline tax elimination because both suburban rail & bus were forced to implement even greater service cuts than CTA.

By the early 1980s, it was clear that the RTA was not meeting the transportation needs of the region. A reform process was initiated at the state level and, in 1983, Metra and Pace were established as additional entities within the RTA. The RTA was charged with basic administrative and policy duties while CTA, Metra, and Pace handled all service provision within their respective jurisdictions. Additionally, the combined fare recovery ratio of the RTA system was required be at least 50%. As discussed earlier, the current funding distribution formula was also established at this time.

It is notable that the RTA reforms occurred within a political environment characterized by strong racial and regional tensions. The 1983 election of Democrat Harold Washington, the City's first black mayor, caused a rift in Chicago's powerful Democratic party. City Council resistance to Washington's administration forced significant delays in the RTA board appointment process. At the same time, an amendment to the state constitution led to alterations in the composition of the legislature. A reduced number of representatives from each district made it more likely that only Republicans would hail from suburban areas and only Democrats would hail from urban areas, thus reducing the future likelihood of bipartisan, suburban/urban, pro-transit coalitions.

When crafting the new RTA structure, very little attention was actually paid to the promotion of regional mobility. In general, most funding was redirected back to place of origin, with no consideration of actual service needs.

2.1.3 Continued Tensions

It has been suggested that the reforms of 1983 helped to alleviate the tremendous suburban-urban animosity that originally existed in the RTA. Some claim that there was a greater sense of purpose and the overall environment was much better suited to regional cooperation. According to one board member from the early 1980s:

" 'It used to be the RTA versus the CTA, so that the city-suburban issues were really the issues that were resolved on the board. After 1983, that was no longer true. It's the RTA and Metra and Pace and the CTA...You start forming a regional mentality in the agency.' " (Allen, 1996, p. 303, quote from Pastora Cafferty interview)

However, those familiar with recent public discourse between the three service boards would find the claim of a "regional mentality" somewhat doubtful. The new RTA structure certainly did not encourage the disparate interests to care

about the successes of others elsewhere in the region. If anything, it actually fostered an environment in which a "silo" mentality could easily flourish.

***RTA Financial Structure**:* As discussed earlier, the revenues generated under the 1983 funding formula never adequately covered the true cost of CTA operations. Consequently, both federal subsidies and RTA discretionary funds were required each year to keep urban transit afloat. At the same time, the suburbs enjoyed stable formula-based revenues that were largely linked to county of sales origin. As sales tax revenues in the suburbs grew, suburban constituents could rest assured that 70% of the formula funds originating in the collar counties would always go to Metra and the remaining 30% would always go directly to Pace.

The RTA Board can decide at any time that the discretionary funding should be divided more evenly between the service boards. Until recently, the composition of the RTA Board has ensured that this would be unlikely. However, as will be discussed in the next section, the stability of the RTA Board composition is also in question.

***RTA Administrative Structure**:* While the 1983 Reforms did not alter the population-based method for determining RTA board composition, it did change the level of suburban influence over regional transit provision. Prior to 1983, there was the sense that the CTA dominated regional transit issues. Through the restructuring, suburban county governments were placed in control of the Metra board while suburban mayors were granted control over the Pace board.

Balanced RTA board representation is most crucial when it comes to the annual budget approval process. Since they enable budget veto power, Chicago places a high value on the five RTA seats in its possession. However, this political security is not guaranteed since, every ten years, census data is used to re-evaluate the RTA board composition. The 2000 census tallies caused tremendous political tension by calling into question the CTA's 5-member presence on the board. If one of these urban seats is transferred to suburban control, there is nothing to prevent a more balanced allocation of RTA discretionary funds. As indicated earlier, the CTA has come to rely upon these funds for basic operational survival and would have even greater budgetary problems if its share were reduced.

During recent transit funding debates, stakeholder has often made a clear distinction between "urban" funds and "suburban" funds. For instance, a recent Chicago Tribune Commentary letter advocating the proposed STAR line states:

"The CTA's budget crisis (real or perceived) threatens to chip away at the funding needed to implement this creative project, and the funding for the STAR line needs to be preserved before any concessions are made to the CTA...The system does have problems, but our concern is that shortfalls at the CTA don't

affect the other providers." McHenry County Board Chairman Michael Tryon (Chicago Tribune, Oct 6, 2004)

In statements like this, the fact that the three service entities are all components of the same regional transit network is not even acknowledged. Rather than working to sustain high levels of mobility throughout the metropolitan area, there appears to be a much greater tendency to attack the perceived weakest links. Suburban interests have expressed the belief that the current funding structure is adequate and the CTA has simply not been doing enough to put its own finances in order.

2.2 The Current Budget

In July 2004, the Chicago Transit Authority estimated that the operating deficit for the upcoming fiscal year would be at least $75 million. Budgetary problems during the previous fiscal year had been mitigated by a base fare increase from $1.50 to $1.75, and it was suggested that further increases might be necessary. The Annual Budget Summary released in early Fall 2004 confirmed that mere maintenance of service levels would require a significant level of additional funding.

($ in 000's)	Gridlock Budget (FY 2005)	Regional Mobility Budget (FY2005)	Difference Inc/(Dec)
Operating Expenses	997,151	1,024,377	(27,226)
Operating Revenues	500,245	500,245	-
Public Funding Required	496,906	524,132	(27,226)
Public Funding Available	441,632	524,132	(82,500)
Net Deficit	(55,274)	-	(55,274)

Table 2.1.3-1: The two 2005 CTA budgetary scenarios (CTA Proposed 2005 Annual Budget Summary)

The budget introduced two potential scenarios:

Regional Mobility Budget: An additional $82 million in funding becomes available, thus enabling the CTA to properly meet the transit needs of its service area.

Gridlock Budget: There is no additional funding and, even with expense reductions of over $27 million, the CTA still faces a budget deficit of $55 million.

By October 2005, it was becoming clear that major CTA service cuts would be implemented if substantial increases in the operating budget did not occur. Public statements indicated that service changes, planned for January 1, 2005, would eliminate about 20% of the total services, affecting both bus and rail routes. (Chicago Tribune, Oct 4, 2004) However, such cuts were not permitted to occur. The CTA board approved a six-month postponement of major service changes when the State legislature made the December announcement that it would focus on transit funding solutions during the spring session. This means that the CTA's 2005 deficit is steadily increasing as it awaits a decision from the legislature. Consequently, if additional funding is not identified by July, even larger service cuts will be required. Five potential alternatives were released by the CTA in March 2005 and the specific cutback scenario was identified shortly after.

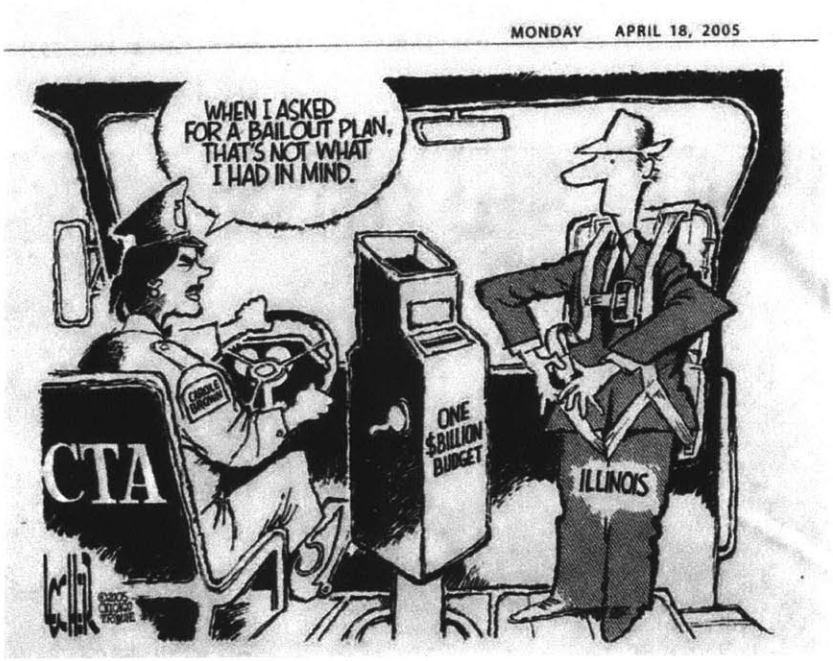


Figure 2.2.1: Political commentary on the recent CTA funding crisis, (Chicago Tribune, Monday April 18, 2005)

It is possible that the necessary funding could come in the form of direct subsidies from the state, although this is certainly not a preferred option. Illinois is facing its own financial difficulties and, even if possible, a stopgap infusion of State funding would do nothing to prevent future budget crises. Alternatively, the CTA has also requested that the state consider a revision to the existing RTA funding formula, which dates back to 1983. Such a revision could result in an allocation of regional transit funds in a manner that is more beneficial to the CTA.

2.2.1 What are the Alternatives?

In March 2005, the CTA prepared to balance its budget without new funds by identifying five potential cost reduction options. It was indicated that one would be required if additional funding sources were not identified by July. (CTA, 2005)

Option 1:

- Elimination of 65 weekday bus routes
- Elimination of late night (1-4AM) rail service
- Elimination of Purple Line/Evanston Express
- Reduction of operating hours for most bus routes

Option 2:

- Increase in waiting time by 110% on bus system
- Elimination of overnight service on Red/Blue Lines
- Elimination of Purple Line/Evanston Express

Option 3:

- Increase of base fare from $1.75 to $2.50
- Increase of transfer costs from $0.25 to $0.50
- Reduced fare increases from $0.85 to at least $1.25
- Increase in cost of 30-day pass from $75 to $105
- Increase in cost of one-day/seven-day passes

Option 4:

- Elimination of 29 weekday bus routes
- Reduction of service hours on approximately 1/3 of bus routes
- Reduction of service hours on all rail routes
- Increase in base fare from $1.75 to $2
- Increase in reduced fare from $0.85 to about $1.85

Option 5:

- Replace Saturday and weekday schedules with the more limited Sunday schedule
- Elimination of 54 bus routes

Any of these options could have severe implications for transit riders. Ultimately, the individual rider response will depend on specific sensitivities to increases in transit costs and declines in service quality & quantity. In the short-run, those that depend on transit for mobility will have no choice but to adjust their travel patterns to the new level of service. Some will have to walk longer distances to access the transit network while others will have to wait longer average durations to find a space on infrequent, crowded vehicles. Both of these possibilities would result in longer average travel times for transit riders throughout the region,

including those that transfer from either Metra or Pace to local CTA service. Additionally, such a significant increase in fares will cut more deeply into budgets. Some habitual transit riders may be forced to eliminate non-essential trips from their routines.

Gradually, those that can afford other commute options will opt to either use the transit system occasionally or not at all. For some, this may entail more frequent use of an automobile that is already owned, either alone or through a carpooling relationship. For those that had previously been able to avoid the expense of a privately owned vehicle, the decline in transit serve may be enough incentive to make a car purchase.

Those that are considering a future switch to transit may reconsider if the system develops a reputation for being inconvenient, costly, and crowded. Even if service is restored at some point in the future, it will be unlikely that all previous riders will be attracted back to the system, especially if the earlier cuts had served as the impetus for an automobile purchase.

Approximately a month after announcing the five scenarios, the CTA board decided that the July service cuts would be a variation the fifth option. In addition to the reduced service indicated earlier, the base fare would also increase by $0.25. Given this scenario, it was estimated that wait times for all services could increase by approximately 68%. (CTA)

It would be useful to model the potential impacts of specific changes in CTA services and fares, both on the CTA and the suburban transit. This could include estimations of:

- Immediate mobility loss (perhaps measured in the amount of time that it takes to reach the Loop from various points in the region)
- Immediate ridership loss (those for whom transit becomes infeasible or less attractive than other modes)
- Long-run ridership loss (the loss of riders that gradually find other mobility options more appealing)
- Immediate automobile use increase
- Long-run automobile purchase and use increase

When conducting such an analysis, it is important to remember that the existing roadway congestion levels in the Chicago Metropolitan area are already quite high. The Texas Transportation Institute estimates that, in 2003, Chicago-area costs due to congestion reached $4.27 billion. Chicago is ranked third[18] among major metropolitan areas on this particular measure. An additional $1.58 billion in congestion costs were avoided due to the existence of the public transportation

[18] Recall that the Chicago region is currently ranked second on travel time index, another major TTI measure of congestion.

system. The erosion of public transit services is certain to cause significant long run shifts in these figures.

2.2.2 The Efficiency Question: Is the Doomsday Scenario Really Necessary?

There remain a number of critics in the region that suggest that the service reduction scenarios are not necessarily the *only* options available to the CTA. There are claims that the CTA has not done enough to make more efficient use of available funds and is already too heavily subsidized. However, these arguments are not grounded in fact.

Aggregate Efficiency Levels[19]

It is common for transit properties to measure efficiency in terms of fare recovery. In the case of the RTA, the 1983 Reforms actually mandated a 50% recovery ratio for the entire system. This means that 50% of the total combined operating expenses for Metra, CTA, and Pace must be covered by the total operating revenues generated by the three service boards. For the year 2002, the individual revenue recovery for the three service boards were:

Metra- 56.6%
CTA – 54%
Pace - 40%

However, the fare recovery ratio is not necessarily the best measure of actual system efficiency. First, it only compares fare revenues with operating expenses, rather that with total operating & capital expenses. This means that relatively labor-dependent services, such as bus and BRT, tend to appear more expensive than capital-intensive service such as rail transit. Additionally, average fares per commuter rail trip tend to be significantly higher than per trip fares for bus, even if both cover the same travel distance. So, while the recovery ratio for the commuter rail trip may be higher, the absolute value of the subsidy is likely to be lower for the bus service.

Since the fare recovery measure holds such a central position in the RTA decision-making process, the fact that the recovery ratio for CTA is almost identical to Metra's, and far higher than Pace's, should indicate that the "inefficiency" charges are dubious. Moreover, an analysis of the CTA's 2004 operations (a combination of approximately 66% bus and 33% heavy rail) indicated that the average operating subsidy per trip was $0.93. This is very low when compared with the average per-trip operating subsidies for either Metra or Pace, which are $2.48 and $2.29, respectively. The CTA fares even better when compared with the national averages for bus and heavy rail, which are $1.70 and $.66 respectively. An agency with these efficiency characteristics but with a

[19] This section relies heavily upon the findings of William Anderson, 2004

bus/rail mix similar to the CTA's would have an average operating subsidy per trip of approximately $1.34.

Additionally, the recovery ratio does not measure transit's actual level of service. A transit agency that raises fares and eliminates certain routes might be able achieve higher revenue recovery rates, but its contribution to regional mobility levels is likely to decline as a result. It is in this way that the recovery ratio is a poor measure of actual public transit goals. Annual changes in total ridership, vehicle hours, or passenger miles could serve as more accurate measures of service levels.

Diversion of Capital

There have been some suggestions that the CTA use a portion of its capital funding to help close any gaps in the operating budget. Specifically, the RTA proposed that as much as $300 million be diverted from capital to operations over the next three years. (CTA Capital Plan, 2005) After all, if the operations scenario is so dire, then it should be worth the postponement of construction projects and equipment purchases. However, with each year that needed capital investments are postponed, the system moves farther away from a state of good repair. When the system is plagued by aging, poorly functioning equipment, it becomes more expensive for operators and maintenance personnel to effectively do their jobs. Furthermore, such a temporary funding solution is clearly not a remedy for chronic funding shortfalls. The operations funding challenge will certainly not get any easier over the next three years. Additionally, the CTA's capital funding outlook is not much more promising than the operations situation. As the CTA prepared its capital budget for the 2005 fiscal year, it was notified by the RTA that $130 million in Illinois First funding would no longer be available. As a result, the CTA is struggling with difficult shortfalls in both operations and capital funding.

In the end, it is reasonable to assume that the CTA has no other options. There are already significant efforts to achieve greater efficiencies and the proposed service cuts should not perceived as just a "bluff." This reality could have major implications for the region. As demonstrated above, many have lost sight of the regional perspective. However, transportation is inherently a regional concern and there will be larger impacts if the CTA is left to face these budgetary challenges alone.

2.3 Chapter Summary

Before leaping into an analysis of the parking fee, it is important to realize why such a funding strategy is necessary. The past few decades of Chicagoland transit finance history has been characterized by strong intraregional tensions. The current CTA budget crisis is just the latest indication of serious flaws in the RTA operations funding process. The reliability of funding levels is poor and

there is very little focus on the actual performance of the network. Chicagoland's transit finance problems must be dealt with in more than just a stopgap fashion if major ridership losses are to be avoided.

3 Identifying Solutions: A True Regional Mentality

"Americans will always cooperate – only after they have exhausted all of the alternatives." Winston Churchill

3.1 Regional Trends in Metro Chicago

The previous chapter highlighted the tensions between the urban core and the suburbs regarding public transit finance. The existence of such intense intraregional political conflict leads one to naturally assume that stark differences exist between Chicago's urban core and suburbs. However, such a view is far from accurate and should not form the basis of policy decisions.

It is undeniable that suburban Chicago has been growing at a high rate. In addition to having an average suburban growth rate of 16%, the area boasts its own "boomburb," Naperville, which grew 1,730% over the past 50 years.[20] However, at the same time that the overall suburban population has been growing, there are a number of individual suburban municipalities throughout the Chicago Metropolitan region that have experienced population declines. Specifically, there were 28 municipalities, or 13.2% of the total municipalities in the Chicago area, that showed population loss during the 1990s. On average, these municipalities experienced declines of 3.8%. (Lucy & Phillips, 2003) Additionally, the Chicago suburbs have experienced growth in racial and ethnic diversity that is most commonly associated with urban areas.

To further complicate the picture, the 2000 US Census reveals that Chicago is one of the only cities that have demonstrated an urban renaissance, at least in terms of population trend reversals. Out of the 100 largest cities in the United States, Chicago was one of only 5 that countered urban population losses during the 1970s and 1980s[21] with significant population gains during the 1990s. Specifically, during the period 1990-2000 Chicago experienced average urban population gains of 4%.

[20] Specifically, boomburb is defined as (1) a city larger than 100,000 (2) not the largest central city in the metropolitan area and (3) has experienced growth rates of 10% or greater for each decade since 1950. The Naperville case is particularly unusual in that boomburbs are almost exclusively found in the Southern and Western parts of the US.

[21] Overall, Chicago lost 361,885 residents during the 1970s (decline of 10.7%) and 221,346 during the 1980s (decline of 7.4%).

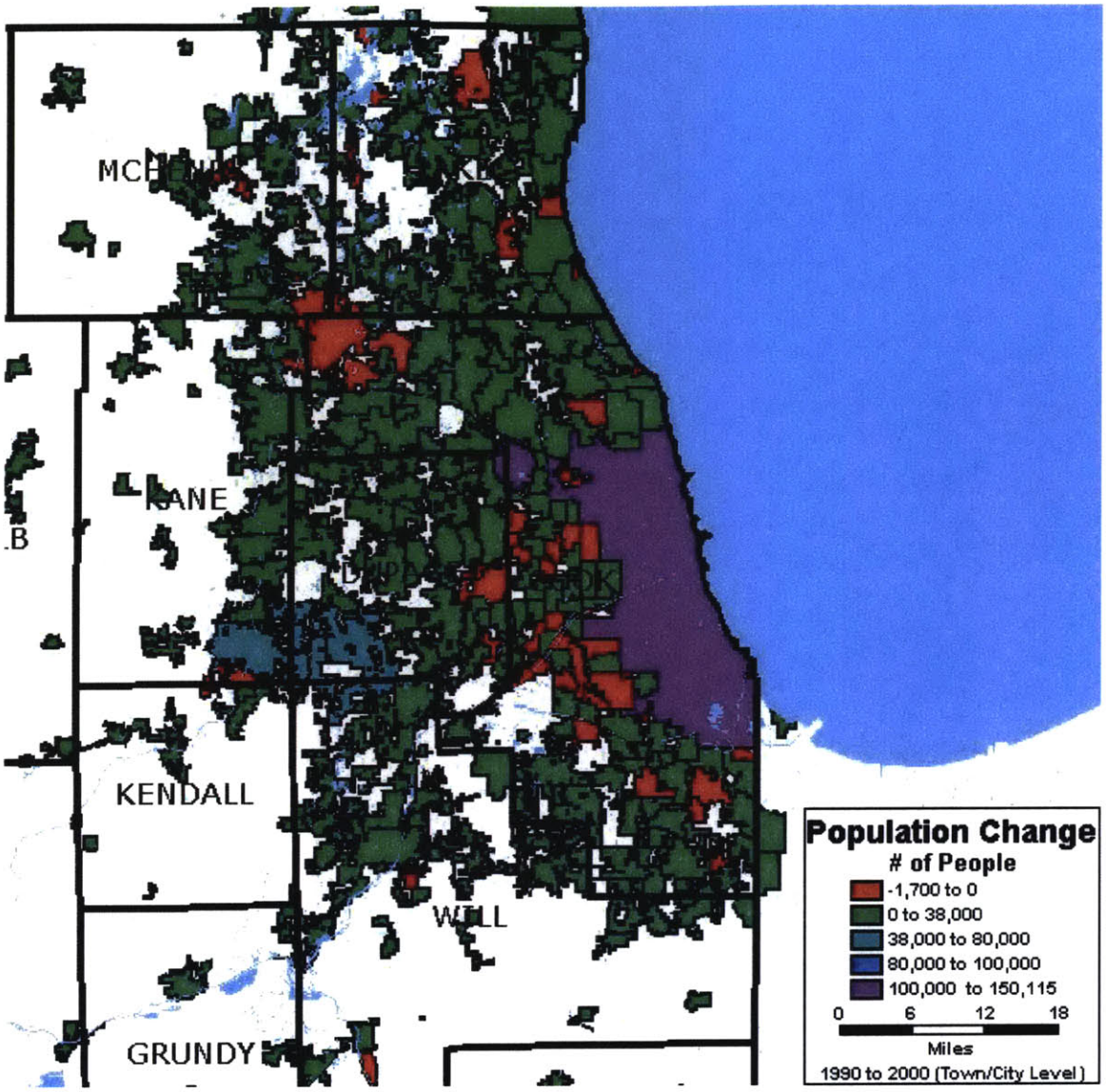


Figure 3.1.1: Absolute population change values at the municipality level, 1990-2000 (US Census)

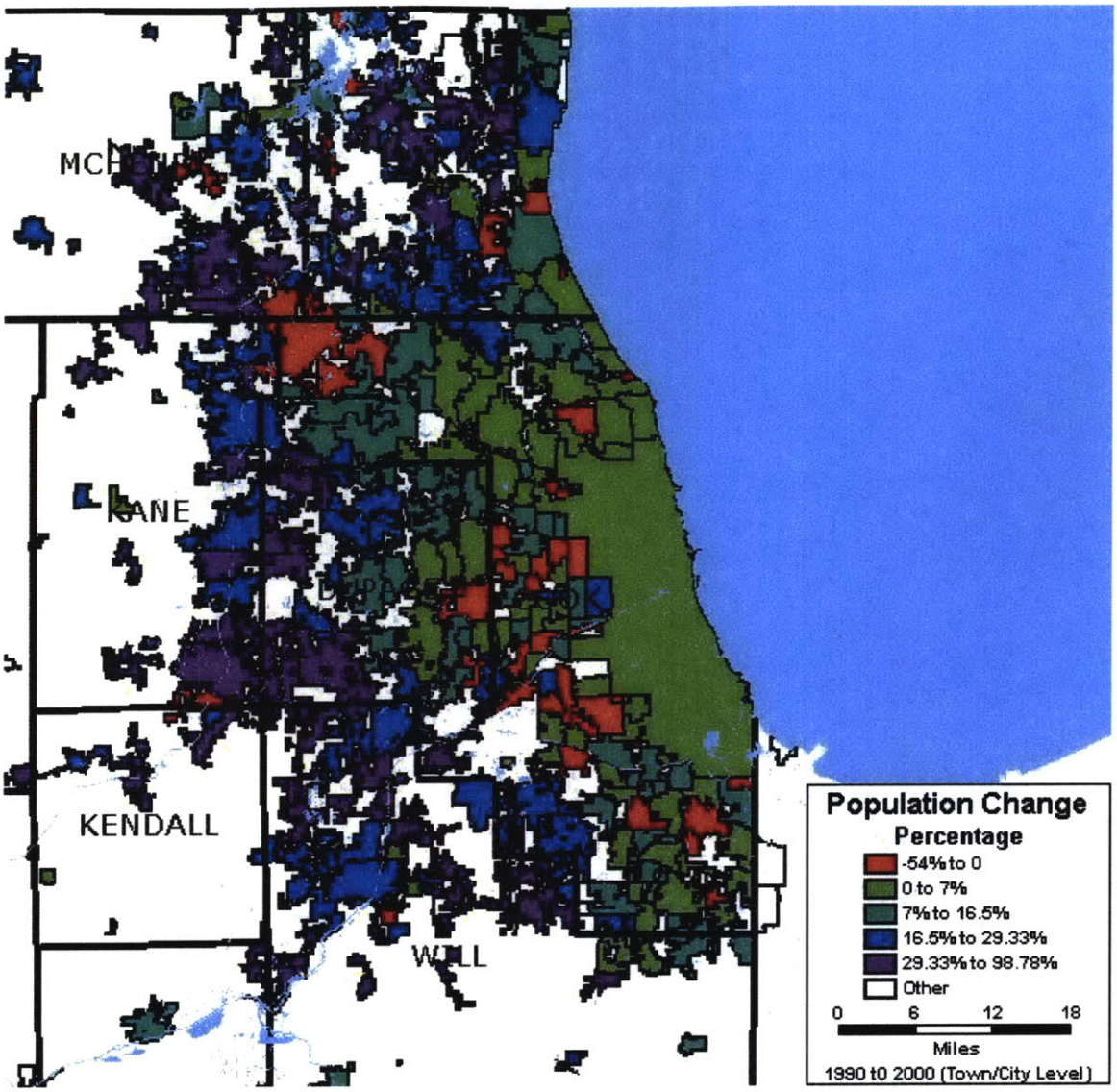


Figure 3.1.2: Percent population change at the municipality level, 1990-2000 (US Census)

This trend is even more surprising considering the fact that major growth during this period was much more common for auto-oriented cities.[22] A closer examination reveals that much of Chicago's growth came from the rapid increases in downtown population. During the 1990s, the downtown areas of Chicago grew by 51.4%. (Sohmer & Lang, 2003) Consequently, Chicago's success in recent years cannot just be depicted as a suburban story.

[22] Glaeser and Shapiro (2003, pp. 28-29) found that, on average, cities that had less than 65% of commuters driving alone to work experienced the lowest average growth while cities with over 80% of commuters driving alone experienced average growth rates of at least 15% (over the period 1990-2000).

In the Chicago Metropolitan area, the dividing line between traditional "suburban" and "urban" issues is becoming increasingly blurred. According to Greenstein & Wiewel:

"Positing an urban-suburban dichotomy implies a political choice that may be at odds with reality and may serve to alienate potential allies within a region. The metropolitan landscape has become too complex and variegated to be captured in a simple duality." (2003)

In Chicago, as with many other US cities, there is no such thing as a common "suburban experience." Orfield views this reality as an opportunity to foster new political coalitions that ignore traditional dividing lines. For example, he suggests that places as seemingly diverse as central cities, inner suburbs, and low tax-base developing suburbs all can – and should - find common ground on regional transportation issues. (Orfield, 1998)

3.2 Potential Regional Cooperation

As discussed in the previous chapter, the establishment of the RTA represented an effort to make transit a more regional concern. It held the promise of greater regional independence from the State.[23] While regional coordination was the stated goal, true cooperation has been rare in practice. Instead, relations within the RTA are more commonly characterized by urban-suburban conflict and accusations that "others" are getting more than the fair share. Even fare integration between the three service boards, an initiative that presumably will benefit everyone, has seen limited progress. This, of course, is reinforced by a general sense that interests throughout the region are naturally at odds.

However, as illustrated by the recent census findings cited above, the city-urban divide in the Chicago Metropolitan Area is becoming less defined. It is increasingly difficult to specify problems as solely of a suburban nature or solely of an urban nature. Population loss, population growth, congestion, poverty, and crime are not concentrated in any one part of the region. The suburbs are experiencing increasing polarization. (Orfield, 1998) This should be viewed as an opportunity to refocus the political perspective and to strengthen the effectiveness of existing regional bodies such as the RTA.

3.3 Regional Transportation Planning: Modes and Land Use

Since the movement of people & goods is not restricted by municipal political boundaries, transportation is inherently a regional concern. While there is an ongoing debate regarding the merits of broad regional government, the management of transportation systems on a regional scale tends to be less

[23] Although this was not fulfilled, largely because a sufficient independent source of dedicated funding was not properly established. This will be explored in much greater detail at the end of this chapter.

controversial. As Wachs & Dill (1997) explain, such a mindset was already in place during the early days of highway planning and investment. Before WWII, there were voluntary efforts to coordinate these activities in many regions throughout the country, although results were generally limited by the lack of sufficient dedicated funding. The postwar era brought a dramatic increase in regional transportation funding from the federal and state levels, particularly for highway, although this generally meant that federal and state design guidelines superceded regional plans. It was not until the 1970s and 1980s that there were significant efforts to coordinate highway and transit planning. Prior to this time, regional transit planning had been more commonly coordinated with non-transport regional services such as sanitation. Overall, the regional approach to highway construction was much more technical and the regional approach to transit was generally much more political. Government funding for each was kept separate. It was not until the Federal Intermodal Surface Transportation Efficiency Act (ISTEA) was passed in 1991 that metropolitan planning organizations gained flexibility in allocated funds between highway and transit projects.

Throughout the post-WWII period, regional approaches to transportation problems have been largely influenced by decisions made at the federal and state levels. Consequently, most regional organizations often do not truly have ownership over regional issues. Regional transportation planning in the Chicago Metropolitan Area tends to fit this characterization. Despite the existence of the Chicago Area Transportation Study (CATS),[24] transportation funds do not necessarily reach areas of greatest need. For instance, an analysis of Chicagoland highway projects during the period 1984-1994 found that state funding was overwhelmingly directed in ways that favored the wealthy, low-density, outer suburbs at the expense of increasingly impoverished parts of the region. (Orfield, 1998) While ISTEA and its subsequent reauthorization legislation may have made the approach slightly more balanced, funding inequities still persist.

While a necessary component of any regional strategy, a more balanced approach to regional transportation finance will not guarantee greater regional mobility. The freedom to shift highway funding towards transit initiatives (and vice versa) means very little if the option to "flex" is not used or resultant transportation infrastructure does not bring travelers from where they *are* to where they *want to go*. The location of residential, commercial, and retail development (i.e., the origins and destinations for most trips) influences the degree to which innovative regional planning can be effective.

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[24] CATS is the metropolitan planning organization (MPO) responsible for allocating funds to specific transportation projects. Theoretically, CATS is concerned with balanced development throughout the entire region.

There is an ongoing debate over the potential outcomes of transportation and land use planning coordination. It has been hypothesized that the way in which land is developed has a direct impact on travel behavior and mobility. For instance, Cervero has conducted a number of studies exploring the relationship between development patterns in the suburbs and the relative mobility levels of these areas. (Cervero, 1989) Although this makes sense theoretically, some researchers claim that the scientific evidence for causal connections is somewhat weak (Crane, 1999). While there are correlations between urban spatial form and the manner in which people choose to travel, causality is a much more difficult thing to prove. In response to this critique, proponents of the land use-travel behavior connection argue that the inconclusive nature of most studies may actually be due to flaws in research methodology and a lack of suitable case studies. In other words, there are just not enough good examples of high-density, mixed-use, pedestrian-friendly developments that actually serve a wide cross-section of the general public. Levine & Inam (2004) suggest that the lack of appropriate study cases does not mean that this type of development is inherently unmarketable; rather, government land use regulations in most areas have actually served to indirectly encourage auto-dependent development. This includes regulation that dictates low development densities, separation of uses, and minimum parking requirements. A developer that is required to build below a predetermined Floor Area Ratio (FAR)[25] and provide a certain minimum number of parking spaces has little freedom to design for pedestrian mobility and transit accessibility. By providing developers with greater flexibility on these matters, it at least opens up the opportunity for a wider variety of travel choices. More innovative development approaches can also be encouraged if the general area already boasts essential mobility features such as sidewalks, bike lanes, and bus service.

In November 2004, the City of Chicago passed a revision of its zoning ordinance. While the new language was far from revolutionary and was largely open to interpretation, the new regulations did have special provisions for transit-accessible developments. Specifically, developments within a certain distance of CTA or Metra stations could face lower overall parking requirements:

"In B, C or D districts, minimum off-street parking ratios are reduced by 50 percent from the otherwise applicable standards for rehabilitation or reuse of existing structures located within 600 feet of a CTA or METRA rail station entrance...For new construction in such locations, the Commissioner of the Department of Planning and Development is authorized to approve off-street parking ratio reductions of up to 25 percent if the Commissioner determines, based on information provided by the applicant, that transit use and alternatives to private automobile use will be actively promoted and/or that other factors are

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[25] FAR: the ratio of the gross floor area of a building to the total area of the site. FAR regulations are often used to limit development density levels.

likely to result in automobile ownership rates that are lower than indicated by applicable off-street parking ratios." (City of Chicago, 2004)

Of course, this does not address bus accessibility nor does it automatically guarantee requirement reductions for new developments in these areas. However, it represents recognition of a potential connection between land use and transportation, a step that is relatively unique. Of course, the true test of its effectiveness would come if the relaxed transit-oriented zoning provisions were extended throughout the entire region. If every developer throughout the RTA service area had an incentive to support non-auto based accessibility, actual changes in development patterns might be observed.[26] However, the possibility that Kane, Lake, DuPage, McHenry, and Will Counties would all embrace such changes is unlikely, at least within the near future.

3.4 Justifications for Regional Cooperation

While the history of regional transportation planning, both in the Chicago area and elsewhere, has been somewhat disappointing, this does not mean that regionalism does not still have numerous (and vocal) advocates. For them, a focused regional approach can have extensive benefits, both from the suburban and urban perspectives. In order to build more solid support for RTA activities, it is necessary that the merits of regional coordination be seriously considered. The three major justifications, as outlined by Summers (2000) are:

3.4.1 Efficiency

One of the most basic arguments for regional coordination is that more fragmented approaches to governance can often be inefficient. The strength of this stance obviously depends on the specific focus of the regional effort. While there are certain public services that do not fit so easily into this mold, the complexity and inherent regional nature of transportation makes it a good candidate for this argument. Of course, many potential efficiencies could be easily lost if the organization must also manage frequent intra-regional disagreements.

3.4.2 Equity/Redistribution

Historically, proponents of regionalism have also cited equity as one of the target benefits. A regional structure can enable more equitable distribution of resources and equitable access to services. While this argument is obviously popular in the less wealthy parts of the region, those that perceive themselves as making a disproportionately large contribution to the regional pot are generally less enthralled with the idea. Often, this is the main source of transit-related

[26] These issues will be revisited in Chapter 5, when the actual incidence and magnitude of the parking fee is examined. Also, for a more detailed exploration of the relationship between parking policies, real estate development, and accessibility, please see the 2005 MIT Masters thesis by Heather Richardson.

suburban-urban conflict. Suburban residents and businesses naturally wonder why they should support a system that provides them with very few direct benefits. Although a legitimate argument, it tends to be the least effective justification for regionalism.

3.4.3 Interdependence

In recent years, there has been a growing focus on the interdependence of municipalities as a justification for regional cooperation. There are two major components of this argument: (1) the economic health of the suburbs is dependent on the health of the central city and (2) regional cooperation is necessary for success in an increasingly global economy.

Economic Health

The older strand of the interdependency argument emphasizes linkages in economic health between localities throughout a region. For instance, in a number of studies, Voith explored the relationship between suburban and urban economic change within a region. While his initial efforts indicted a positive correlation between city and suburban growth in recent decades[27], a causal relationship (specifically one that indicates city impacts on suburbs, rather than vice versa) was not confirmed. Researchers such as Bennett Harrison (1998) and Todd Swanstrom (2001)[28] have cited this as one of the major flaws of the interdependency argument.

However, Voith's more recent efforts to eliminate potential confounding factors (1998) have started to build evidence that the economic health of the city does, in fact, have a positive effect on suburban incomes and housing price growth. Hollar's export price shock analysis (2003) went one step further in trying to distinguish between exogenous economic shocks on the city center and the suburbs. This work found that the employment growth in central cities, especially in larger cities, has a very significant positive impact on suburban employment

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[27] In additional to finding positive correlations in the past few decades, Voith has also observed that earlier decades featured a negative correlation. Thus, in the early years of rapid suburbanization, the fortunes of the suburbs and the urban core seemed to have been diverging in the short-run. But, ultimately, the long-run economic performances of localities across the region become more closely linked.

[28] Asserting that even efforts to use multiple regression to determine interdependence are still somewhat unreliable, Swanstrom suggests that the economic argument for regionalism is limited and regionalists should instead appeal to popular American support for political equality, civic tolerance, and local liberty. While the author agrees that these are important issues that must be incorporated into the larger regionalism framework, it still appears as though Swanstrom too quickly dismisses the recent progress made in economic interdependence arguments.

growth[29] and ultimately reinforced the idea that cities and their suburbs should perceive themselves as economic allies rather than rivals. Of course, if the suburbs are reaping such large benefit from their proximity to an economically vibrant urban core serviced by an extensive transit system, one begins to wonder if the suburbs are paying enough for these benefits.

Other recent studies have reinforcing the idea that the metropolitan region is economically interdependent. For instance, Hewings, Okuyama, and Sonis (2001) used an extended input-output framework[30] to demonstrate that there is substantial economic interdependence between different sub-regions with the Chicago Metropolitan Area. The key drivers of this phenomenon are the high rates of (1) commuter movement (people are not living and working within the same sub-regions) and (2) income movement (people are not living and spending their money within the same sub-region). The authors conclude that this is one indication that investment in certain parts of the metropolitan area (such as the inner city) should be expected to have significant spillover effects on incomes throughout other regions (such as the suburbs).

Global Competitiveness

A more recent strand of the interdependency theory argues that regional coordination is a prerequisite for competitiveness in the new global economy. This is often based on the idea that a major feature of globalization is the growing importance of regional clusters. Porter defines clusters as "geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition."(Porter, 1998, p. 2) Such clusters enable better access to knowledge and relationships, both of which are increasingly crucial in an economy where virtually all companies are seeking greater access to technological advancements. "In fact, there is no such thing as a low-tech industry. There are only low-tech companies, that is, companies that fail to use world-class technology and practices to enhance productivity and innovation." (Porter, 1998, p. 9)

The quality of human capital in a region can be a major determinant in the formation of such clusters. Innovative companies and institutions seek intelligent "idea generators" and are thus more likely to locate in areas with a highly educated workforce base. Consequently, regions that hope to attract innovative industries must first focus on creating high quality places that appeal to talented and creative workers. Two features that often matter most to this population include:

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[29] Growth in suburban employment also had a positive impact on urban employment growth, but the effect is not nearly as large, especially in regions with larger central cities.

[30] The framework incorporated production, employment, and income components.

- The integration of live-work-learn-play activities in a collection of vibrant, diverse communities
- Transportation connectivity that enables easy and quick mobility across the region

Both of these features seem less likely to occur in regions that are sprawling, highly congested with an uncoordinated approach to transportation planning. (Florida, 2005)

From this point of view, the commute travel time statistics for the Chicago region is certainly not encouraging. The average change in commute travel time over the past decade was an increase of 3.1 minutes. (McGuckin & Srinivasan, 2003). Figures 3.4.1 and 3.4.2 shows how the automobile-based component of these increases has been dispersed across the region.

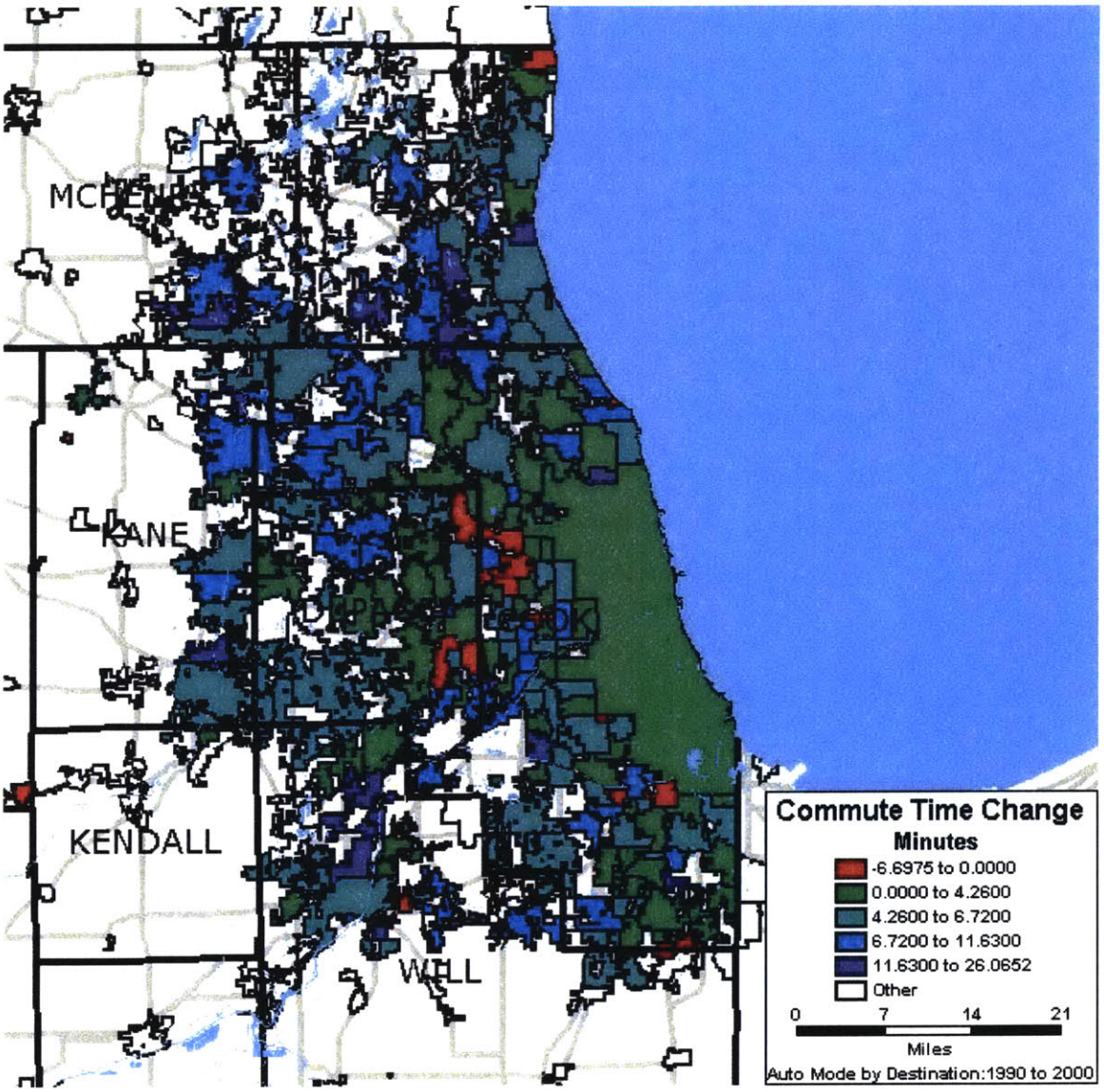

Figure 3.4.1: Absolute change in average automobile work commute time by destination municipality (US Census)

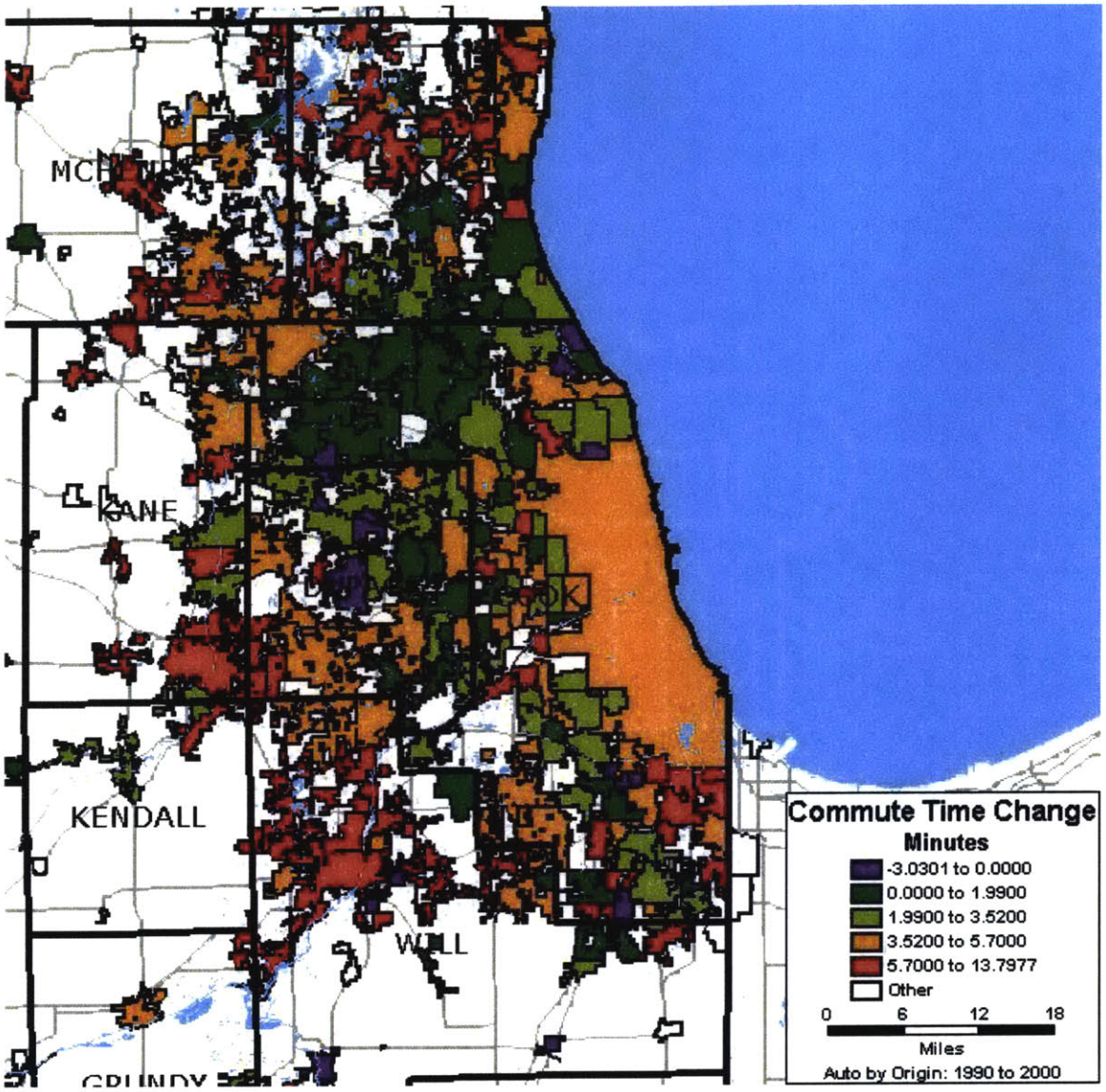

Figure 3.4.2: Absolute change in average automobile work commute time by origin municipality (US Census)

Over the past three decades, the share of commute trips that are very long (>45 minutes) has increased in all parts of the region while the share of trips that are categorized as short (<15 minutes) has declined.

Commutes more than 45 minutes (as percentage of total commutes)			
	1980	1990	2000
Central	24.2%	23.9%	27.2%
Suburban	16.9%	18.8%	22.5%
Ex-urban	7.7%	12.3%	17.7%

Table 3.4.3-1: Very long commutes as share of Chicagoland total commutes (McGuckin & Srinivasan, 2003)

Commutes less than 15 minutes (as percentage of total commutes)			
	1980	1990	2000
Central	20.8%	19.8%	17.6%
Suburban	31.0%	28.1%	24.8%
Ex-urban	45.7%	42.3%	36.3%

Table 3.4.3-2: Very short commutes as share of Chicagoland total commutes (McGuckin & Srinivasan, 2003)

To fully understand what this means for Chicago's competitiveness, it is useful to consider at least one measure of relative mobility. Every year, the Texas Transportation Institute (TTI) determines travel time index values for major US metropolitan areas. This number indicates the amount of extra travel time needed for a peak hour trip versus a trip made in free flow traffic. In 1983, Chicago had the seventh highest travel time index in the nation, suggesting that mobility was worse than the following six urban areas:

Location	1983 Travel Time Index Ranking	1983 Travel Time Index Value	Ridership Change (1983-2003)	Travel Time Index Change (1983-2003)
Houston	1	1.32	86%	33%
Los Angeles-Long Beach-Santa Ana CA	2	1.31	54%	34%
San Jose	3	1.22	24%	12%
San Francisco-Oakland CA	4	1.22	11%	26%
Tampa-St. Petersburg FL	5	1.19	186%	12%
Washington DC-VA-MD	6	1.18	58%	28%
Chicago	7	1.18	-6%[31]	33%

Table 3.4.3-3: Travel Time Index Comparison, Highest Seven Municipal Areas in 1983 (TTI, 2005) [32]

Over the following two decades, Chicago's travel time index increased by 33%. At the same time, it was the only one of the seven areas listed in Table 3.4.3-3 that did not experience growth in transit ridership. By 2003, Chicagoland had a travel time index of 1.57, resulting in a national second place ranking. This places Chicagoland at a greater disadvantage when trying to compete with the metropolitan areas of San Francisco, Houston, and Washington, DC.

[31] While the TTI places Chicagoland ridership loss at -6%, official RTA figures for 1980-2005 indicate a loss greater than -30%. The larger number simply sets the Chicago area at an even greater disadvantage when compared with its peers.

Location	2003 Travel Time Index Ranking	2003 Travel Time Index Value
Los Angeles-Long Beach-Santa Ana CA	1	1.75
Chicago	2	1.57
San Francisco-Oakland CA	3	1.54
Washington DC-VA-MD	4	1.51
Atlanta	5	1.46
Miami	6	1.42
Houston	6	1.42

Table 3.4.3-4: Travel Time Index Comparison, Highest Seven Municipal Areas in 2003 (TTI)

Overall, a greater focus on region-wide cooperation will make metropolitan areas better prepared to promote and manage the complex relationships associated with globalization. Ultimately, the region that is overly preoccupied with intraregional conflict could potentially be left behind in an economy in which political boundaries have very little importance.

In short, to the degree that there is a recognition that economic competition is *not* between Schaumburg and the Loop but actually between Chicagoland and places like the San Francisco Bay Area, it would be proactive to focus on growing congestion as the enemy of regional economic growth.

3.5 Regionalism: Translation to Transit Finance Policy

If we accept the idea that different parts of the region can – and should - share common goals, it then becomes necessary to determine how this can be translated into policy. A first step would be to eliminate artificial conceptions of "urban" vs. "suburban" interests from the political landscape. The existing RTA funding formula reinforces the artificial divisions between suburban and urban goals. Rather than redistributing funds to those that can use it most effectively, there is a rigid relationship between locus of sales tax collection and locus of rider residence. This strict division of funding was largely influenced by the intraregional politics of the early 1980s and has very little connection with mobility needs. In order to bridge the suburban-urban divide, the finance structure should begin to reflect the true interdependencies. However, it is clear that major alterations in the existing funding formula may be perceived as too drastic a step, at least in the beginning. The debate over distribution restructuring has raged from a very long time and opposing opinions are fully entrenched. From a

political feasibility perspective, it would be useful, if possible, to pursue options that avoid passionate opposition.

If we choose to approach this problem from a regional perspective, there are some funding options that are entirely inappropriate. For instance, an increase in Chicago and Cook County municipal contributions to CTA operations (which has remained at $5 million since the 1970s) would contradict the notion that the health of the transit system is a regional concern. Similarly, an arbitrary redistribution of funds that disproportionately benefits one transit board would also reinforce the divisive politics that already permeate the region. Finally, temporary redistribution of funds from capital budgets to operating budgets is a short-term solution that ultimately reduces the capacity for enhancing the connectivity of the overall network.

Rather than wasting valuable energy & time on the endless "Who gets more?" argument, efforts could be focused on a coordinated region-wide effort to generate more resources for the entire area. While recent events make it seem as though CTA is the lone service board in need of additional operating funds, both Metra and Pace could certainly benefit from an enlargement of the funding pool. For instance, Metra's long-term capital expansion plans will almost certainly place it in a position of increasing subsidy needs. According to Metra's 2005 budget, the commuter rail hopes to embark on a few major network expansion efforts over the next few years (Metra, 2005):

- Construction of the STAR (Suburban Transit Access Route), a 55-mile rail connection from O'Hare Airport to Joliet.

- Construction of the SES (Southeast Service Line), a rail connection between the town of Crete and the LaSalle Street Station in Chicago

- Extension of the Union Pacific Northwest Line to Johnsburg (McHenry County)

Given Metra's average per-trip subsidy requirement (examined in section 2.2.2), such massive system expansions will surely necessitate a larger operating budget. Metra should be willing to pursue increases funding levels now, well before the possibility of their own budget crisis.

3.6 The Common Goal: Enlarging the Funding Pool

3.6.1 Benefits of a new dedicated funding source

Given regional conditions, the best strategy is to identify ways in which the entire RTA system can independently generate more overall revenue. While pursuit of more state subsidy is also an option, it is unlikely that the legislature will offer anything more reliable than stopgap cures. While a large influx of state dollars may solve this year's problems, the future sustainability of the system will still be

in jeopardy. Ultimately, an additional dedicated funding source with flexibility for future growth is necessary to ensure long-term financial security and enable longer planning horizons.

Of course, a new source of funding will not be without controversy. There is always the danger that the distribution of this new source will become yet another contentious political issue. In the beginning, when the additional revenues start coming in, there will be a perception of newfound abundance and everyone will queue up for a portion. However, this could prematurely stretch the funding stream to capacity. While this may be less likely in a situation of crisis (even though there are new funds, much will already be earmarked for basic maintenance of service levels), it may make people think that the situation is less crucial than it really is. This will be especially true in the case that it will be an RTA funding source, not just a source specific for CTA.

Care should be taken to ensure that the generation of new revenues will not make inter-agency relations more divisive; rather it should be viewed as an opportunity to achieve a greater sense of common purpose throughout the RTA service area.[33]

However, the identification of an additional funding source that provides sufficient revenue streams *and* is politically feasible is obviously much easier said than done.

3.6.2 Funding Option: Increasing Collar County Sales Tax Rates

One of the more widely discussed funding options has been the reformulation of existing sales tax rates. As discussed earlier, the 1979 reforms lead to a tiered structure in which the City and Cook County pay a 1% sales tax to support transit while the collar counties faces rates of .25%. This has ensured that wealthier parts of the region contribute the least amount and annual revenues are consistently insufficient to cover the actual costs of operating a healthy regional system. Recall that the relative efficiencies analysis presented in Chapter 2 indicated that both Metra and Pace receive much higher per-passenger subsidies than the CTA. Consequently, the average collar county transit passenger pays lower sales tax rates and receives higher transit subsidies than the average Cook County resident. (Anderson, 2004) An increase in the collar county percent contribution could be a significant improvement over the current situation.

According to Kirschbaum (2004), increasing the sales tax levels in the collar counties would have the following annual revenue potential:

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[33] Potential distribution strategies are covered in Chapter 6: Implementation Challenges.

Additional Revenue Generated by Sales Tax Rate increases (all Collar Counties)

	1%Cook, .5% Collar	1%Cook, .75% Collar	1%Cook, 1% Collar
Total	$128,746,000	$257,492,000	$386,239,000

Additional Revenue Generated By Sales Tax Increases (just DuPage)

	1%Cook, .5% Collar	1%Cook, .75% Collar	1%Cook, 1% Collar
Total	$54,073,740	$108,146,480	$162,220,220

Additional Revenue Generated By Sales Tax Increases (just DuPage & Lake)

	1%Cook, .5% Collar	1%Cook, .75% Collar	1%Cook, 1% Collar
Total	$86,260,000	$172,520,000	$258,780,000

Table 3.6.2-1: Revenue generation potential of various sales tax increase scenarios (Kirschbaum, 2004)

Although this is a technically feasible alternative that could be easily implemented by a pre-existing administrative structure, it may not be the most realistic option. Over the years, a formidable coalition has gathered in opposition to this option. The suburban retail sector opposes it because it could reduce the advantage it has over Cook County and City businesses. Suburban residents oppose it because it could cause increases in the cost of goods. Additionally, for many, there is still the fundamental belief that the suburbs should not pay any more for a service that they rarely, if ever, use. It is increasingly doubtful that regional stakeholders will experience a change of heart and embrace even the most modest restructuring proposals. Given current attitudes toward restructuring schemes and the urgent need for financial improvement, it is useful to bring other ideas to the table.

3.6.3 Funding Alternative: Regional Parking Fee

Another potential solution is the use of a regional parking fee to augment regional transit operating funds. While it has been informally discussed as a funding alternative, a parking fee has not yet been the focus of a formal public discussion. If its merits are widely understood, it should stand a better chance of gaining region-wide support than the controversial sales tax proposals.

A number of US cities including Chicago, Los Angeles, Miami, New Orleans, Pittsburgh, San Francisco, and Santa Monica have implemented parking taxes. (Berk & Associates, 2002) However, these are generally limited to facilities within city boundaries that actually charge customers for parking. In contrast, the preferred approach for Chicagoland would impose a relatively minimal per space monthly rate on *all* non-residential parking facilities, including those that typically claim tax-exemption.

Unlike the parking taxes that have been implemented in other US locations, a regional parking fee structured in this manner would have a stronger rational nexus with congestion externalities. After all, the fact that one facility owner is collecting higher revenues than another does not necessarily mean that he is making a larger contribution to regional congestion levels. In fact, a city-subsidized lot is actually more likely to encourage auto-dependence than a for-fee private facility. However, it is easier to conclude that a property owner providing enough parking spaces for 30 cars is making a larger contribution to regional congestion levels than one providing enough spaces for 20 cars, regardless of whether any revenue is actually generated. Equally important, such a broad-based fee could generate enough revenue to help sustain a high quality of transit service *without* creating significant financial burden for Chicagoland residents.

Earlier efforts to estimate the financial benefits of a regional parking fee were somewhat discouraged by the lack of accurate data on Chicagoland parking supply. Obviously, to conduct an inventory of all commercial parking spaces within the six county area would be a daunting task for any researcher or agency. Fortunately, the exact number of spaces need not be known to determine the effectiveness of a parking fee; rather it is sufficient to simply know the *magnitude* of parking supply. If the general magnitude is known, it will be easy to determine the range of fees required to achieve funding goals.

As part of its own efforts to explore the parking fee option, the CTA has made the following rough estimations for parking supply within the City of Chicago:

	Gross Bldg Floor Area (gfa)[2]	Avg spaces/1000sf[3]	Total parking (est)
ChiCBD public parking[1]			100,000
City Retail	11,402,228	5	57,011
ChiCBD Office	117,436,716	2.0	234,873
City Industrial	1,177,575,049	0.75	883,181
Millennium Park garage[4]			2,181
Parking meters[5]			28,416
City of Chicago		**CITYTOTAL**	**1,305,663**

Table 3.6.3-1: City of Chicago parking supply estimates (CTA)

Since it is still questionable whether parking meters should be included in the overall count, it will be assumed that the number of eligible spaces within the City of Chicago is approximately 1,277,000.

The CTA also attempted to estimate the number of spaces in the six suburban counties, using a combination of census and real estate data:

	Employed Residents driving to work	Parking Spaces per worker	Total parking spaces (est)
Suburban Commercial*	2,527,682	1.1557	2,921,242
	Gross Bldg Floor Area (gfa)	**Avg spaces/1000 Sqf.**	**Total parking (est)**
Suburban Retail**	97,730,253	10	977,303
		SUBURBTOTAL	**3,898,545**

Table 3.6.3-2: Chicago area suburban parking space supply estimates (CTA)

While the methodology appears reasonable, it is always best to check for potential points of criticism. For instance, the CTA's use of "employed suburban residents driving to work" as a proxy for suburban parking space requirements could be questioned on the basis that some suburban residents actually commute into the city, thus resulting in a potential over-estimation of the suburban parking supply. This critique can be countered in two ways:

1) Recent census data show that there are a similar number of urban residents traveling to the suburbs for work as there are of suburban residents commuting to the city, thus reducing the possibility that the CTA estimates double-count parking spaces. Specifically, the share of commuters that travel from the city to the suburbs is 11.1% and the share of commuters that travel from the suburbs to the city is 13.9%. This suggests that the magnitude of required spaces in the suburbs roughly the same. (Brookings Institution, Metropolitan Policy Program)

2) A more detailed picture of the regional parking supply can be obtained by examining the journey to work data from the 2000 US Census.

Commute Destination	Drove Alone	2-person carpool	3-person carpool	4-person carpool
Kane	141,055	14,605	2,710	2,420
DuPage	444,865	40,320	7,145	5,120
Will	132,435	12,565	2,190	1,300
Cook	1,615,075	220,575	41,220	29,515
McHenry	77,330	8,175	1,720	955
Lake	254,990	26,500	5,380	3,910
Total	2,665,750	322,740	60,365	43,220

Table 3.6.3-3: Commute journey to work by driving mode and place of employment (2000 US Census)

By taking these totals and calculating the number of total car trips produced[34], more accurate estimations of the parking supply in individual suburbs can be obtained. If at least one space were required for each car traveling to suburban work destinations, the minimum number of suburban spaces would be:

Kane	149,866
DuPage	468,687
Will	139,773
McHenry	82,230
Lake	271,011
Cook (Chicago excluded)	1,022,468
Total	**2,134,033**

Table 3.6.3-4: Suburban parking requirement estimations based on driving mode and place of employment

Since these assume just one place per employee vehicle, it is almost certainly undercounting the actual number of spaces in the suburbs. Even non-retail uses will provide additional spaces for customers and visitors, especially since the cost of constructing surface spaces in the suburbs is relatively low. The CTA's calculations use a multiplier of 1.1557 to estimate the number of required spaces from the known number of employees. Since the journey to work method already eliminates the need to discount for other employee transportation modes, it is reasonable to use an even higher parking space multiplier. Just by multiplying the number of spaces required for employees by a multiplier of 1.3, it is found that the estimated number of spaces is over 2.77 million.

This alternate approach to suburban parking space calculation confirms that the original CTA calculations are of the correct magnitude. For the remainder of this

[34] Simply calculated by dividing the number of trips for a particular mode by the number of riders in each automobile. So, for instance, the number of car trips produced by 14,605 2-person carpool commutes is 14,605/2 = 7,303.

thesis, it will be assumed that the sum of suburban and urban eligible parking spaces is at least 4 million.

Using the base estimate of 4 million eligible spaces, a range of potential parking fee rates could generate the following revenue amounts:

$3.00	$144,000,000
$4.00	$192,000,000
$5.00	$240,000,000
$6.00	$288,000,000
$7.00	$336,000,000
$8.00	$384,000,000
$9.00	$432,000,000

Table 3.6.3-5: Range of potential annual parking fee revenues, based on monthly per space rates of $3-$9

Tables 3.6.2-1 and 3.6.3-5 demonstrate that the sales tax increase and the parking fee are comparable revenue generators. [35]

While the application of the fee to such a large number of spaces certainly supports a more regional approach to transit finance, it also enhances the revenue generation potential. Although non-residential parking fees have not yet been attempted in the US, the concept has taken hold in both Sydney and Perth, Australia. However, the implementation areas in both cities are geographically limited, specifically to the urban downtowns. As a result, both of the existing case studies in Australia collect annual revenues significantly less that what would be required within the Chicagoland context.

It is important to remember that, in addition to its potential as a revenue generator, a parking charge can also be perceived as a travel demand management tool. Theoretically, if fee rates cause large enough increases in auto travel costs, drivers would be tempted to switch to other modes. However, at this stage, travel demand should not be an initial focus of an RTA-administered parking fee. Currently, the greatest concern is maintenance of the existing level of service. The fee needs to be high enough to generate a sufficient level of income, but not so high that it encounters major political opposition. If the rates were actually high enough to significantly impact travel behavior, it would have a substantially less likelihood of public approval. From this perspective, it is wise to minimize the driver perception of the fee. The implications of this approach will be explored in the following chapters.

[35] A more in-depth (property and customer levels) comparison between both options appears in Chapter 5.

3.7 Chapter Summary

In Chicagoland, the notion of an urban-suburban divide is an oversimplification of reality. In order to prosper as a region, everyone must realize that congestion is a common enemy that can only be defeated through a unified effort. Under such conditions, it is necessary to identify a transit finance strategy that both reflects regional interdependencies and generates enough revenue to have a significant impact on overall mobility levels. While other options are available, a region-wide, non-residential parking fee comes the closest to meeting these needs.

4 General Misconceptions

Any movement to implement a new transit funding mechanism will certainly be met with at least some public resistance, especially when the strategy has very little precedent elsewhere. However, in the case of the parking fee, much resistance will be based on easily debunked misconceptions. Consequently, it is important to anticipate the potential sources of opposition and prepare logical, convincing counterarguments. If the public can come to the realization that the parking fee is, in fact, the best option, political barriers are less likely to be quite so formidable.

4.1 Misconception: The Fee Will Have the Greatest Impact on the Collar Counties

Recent media critiques have expressed the perception that the collar counties would feel the greatest impact from parking fee scheme. While this seems to be only a very misleading rumor, it is it is not surprising that the current political climate has fostered such ideas. Some of this confusion can be traced to:

- The existence of an unrelated parking taxes in Cook County
- The auto-dependence of the collar counties

4.1.1 Confusion Between Existing Parking Taxes and the Parking Fee

Some of the confusion might arise from the fact that commercial facility parking taxes are already imposed by both Cook County and the City of Chicago. The current rates for these taxes are depicted in Tables 4.1.1-1 and 4.1.1-2.

Daily Parking Rate	Tax Rate	Weekly Parking Rate	Tax Rate	Monthly Parking Rate	Tax Rate
$3.00 and below	0	$15.00 and below	0	$60.00 and below	0
$3.01-$4.99	$0.50	$15.01-$24.99	$2.50	$60.01-$99.99	$10.00
$5.00-$11.99	$0.75	$25.00-$59.99	$3.75	$100.00-$239.99	$15.00
$12.00 and up	$1.00	$60.00 and up	$5.00	$240.00 and up	$20.00

Table 4.1.1-1: Cook County parking tax rates (Kirschbaum, 2004)

Daily Parking Rate	Tax Rate	Weekly Parking Rate	Tax Rate	Monthly Parking Rate	Tax Rate
$2.00	0	$10.00 and below	0	$50.00 and below	0
$2.01-$4.99	$1.00	$10.01-$24.99	$5.00	$50.01-$99.99	$20.00
$5.00-$11.99	$1.75	$25.00-$59.99	$8.75	$100.00-$239.99	$35.00
$12.00 and up	$2.25	$60.00 and up	$11.25	$240.00 and up	$45.00

Table 4.1.1-2: City of Chicago parking tax rates (Kirschbaum, 2004)

It could be argued that enough public burden is already carried by downtown facilities that must pay this tax. For instance, a downtown facility that charges a daily space rate of $20 would be responsible for a county tax of $1 and a city tax of $2.25 for each daily fee collected. Assume that the facility consists of 300 spaces, has a daily occupancy rate of 75%, and has annual per space pre-tax operating costs of $750. Given this relatively typical structure, the annual parking taxes more than double the facility costs (54% of total costs are attributable to the tax, as depicted in Figure 4.1.1). Even if occupancy rates drop to 65% (thus reducing the amount of tax paid on parking space income), the combined parking taxes still account for approximately 50% of the total facility costs.

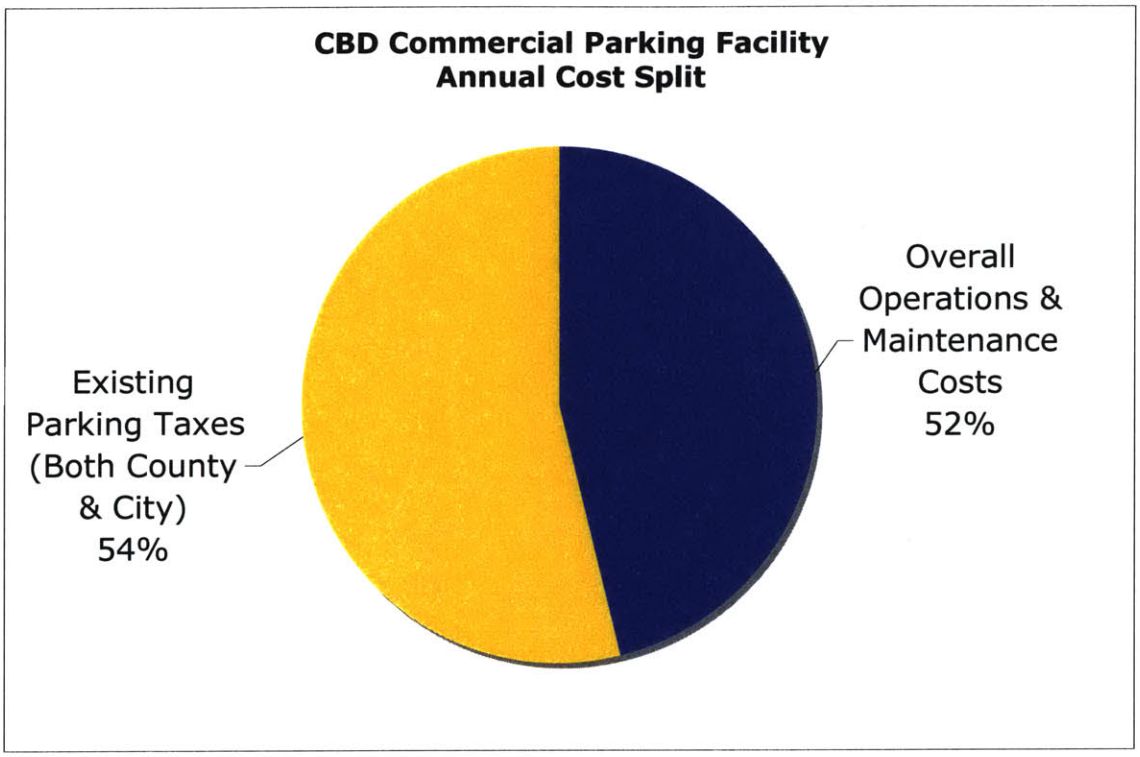

Figure 4.1.1: Existing parking taxes as percentage of total facility costs for the average commercial parking facility

The existing parking tax is indeed significant. Thus, it would be logical to assume that urban interests would only support a new finance policy in which the majority of costs are bourn by the suburbs. However, there are a number of differences between the Cook County/City of Chicago parking taxes and the parking fee that make this an inaccurate assumption:

	Existing Parking Taxes	Potential Parking Fee
Administering Governmental Body	Cook County/City of Chicago	RTA
Services Financed	Services financed by City & county general funds, many of which are not transportation-related	RTA transit operations, which are entirely transportation related
Impacted Group	Only commercial (for-profit) parking facilities	All non-residential parking facilities within the region, including those owned by tax exempt entities
Rate Structure	ad valorem on facility revenues	Flat fee on number of spaces

Table 4.1.1-3: Qualitative comparison between existing parking taxes and potential parking fee

Of particular significance is the difference between impacted groups. While the existing parking tax only impacts commercial lots, the proposed fee would be applied to all non-residential lots. The facilities that currently pay the revenue-based City and Cook County taxes represent a very small segment of this group.

Since the annual parking fee revenues and rates for Cook County are known, we can estimate the number of spaces currently subject to the commercial parking tax. Cook County collected approximately $33.6 million in parking tax revenues during the 2003 fiscal year (Cook County, 2004). It can be assumed that the shares of total parking spaces for each of the three categories are equal (33% for each). Additionally, it can be conservatively estimated that the average parking rates are:
Daily = $5.00-$11.99 (tax rate of $1.00)
Weekly = $15-$24.99 (tax rate of $2.50)
Monthly = $60-$99.99 (tax rate of $10.00)

	Daily Parking		Weekly Parking		Monthly Parking	
Share of Annual Commercial Parking Revenue	33%		33%		33%	
Annual Revenue	$11,088,000		$11,088,000		$11,088,000	
Revenue per Given Period	365	$30,378	52	$213,231	12	$924,000
Spaces	40,504		85,292		92,400	
Total Spaces	218,196					

Table 4.1.1-4: Estimate of Cook County commercial parking space supply. based on 2003 revenues of $33.6 million and equal category share.

Although it is an unrealistic scenario, a higher supply estimate can be achieved by assuming that all revenues are generated by monthly spaces.

	Daily Parking		Weekly Parking		Monthly Parking	
Share of Annual Commercial Parking Revenue	0%		0%		100%	
Annual Revenue	$-		$-		$33,600,000	
Revenue per Given Period	365	$-	52	$-	12	$2,800,000
Spaces	-		-		280,000	
Total Spaces	280,000					

Table 4.1.1-5: Upper bound estimate of Cook County commercial parking space supply, based on 2003 revenues of $33.6 million and monthly parking dominance

Even with this higher parking space supply estimate, only about 6%[36] of regional parking spaces are subject to the existing parking taxes. As will be demonstrated in the next section, 280,000 is also a very small share of the total number of non-residential spaces in Cook County. The vast majority of facilities in the urban and inner suburban areas currently do not face any extra charges.

[36] Determined by dividing 280,000 commercial spaces by the 4 million estimated regional non-residential spaces.

The fact that a very small proportion of City and Cook County facilities already pay a tax to another governmental entity for entirely different purposes is clearly not a reason to expect an RTA parking fee would ever be imposed exclusively on the suburbs. In fact, there would be no logical explanation for a parking fee that is concentrated in only one area, since all parking spaces throughout the region (urban, inner suburbs, and outer suburbs) impose some sort of cost on the larger transportation system, an issue that will be explored in greater depth throughout this thesis. In order to raise revenues that will support regional mobility, it only natural that the source will be on a regional scale.

4.1.2 County-Level Impacts of Parking Fee

Although the per-space fee will be applied uniformly across the region, opponents will almost certain insist that the outer suburban counties are still the primary targets of the policy. After all, the auto dependency of the collar counties could easily lead one to assume that they have the largest regional share of parking spaces. However, this belief is also unsupported by fact. Area-wide parking supply estimates indicate that Cook County has the largest share of both workplace and retail parking spaces and even when Chicago is excluded from the total, suburban Cook is approximately equal to the collar counties.

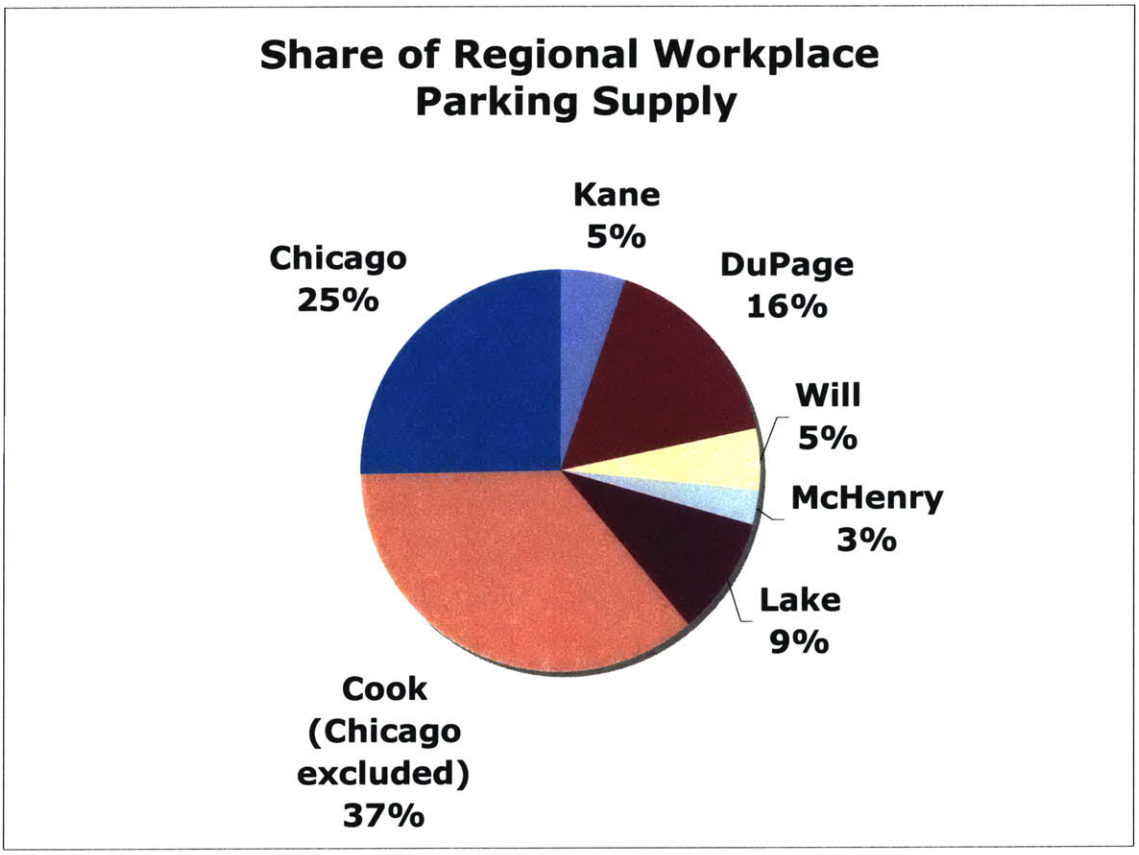

Figure 4.1.2: Approximate share of regional workplace parking supply by county (US Census, 2000)

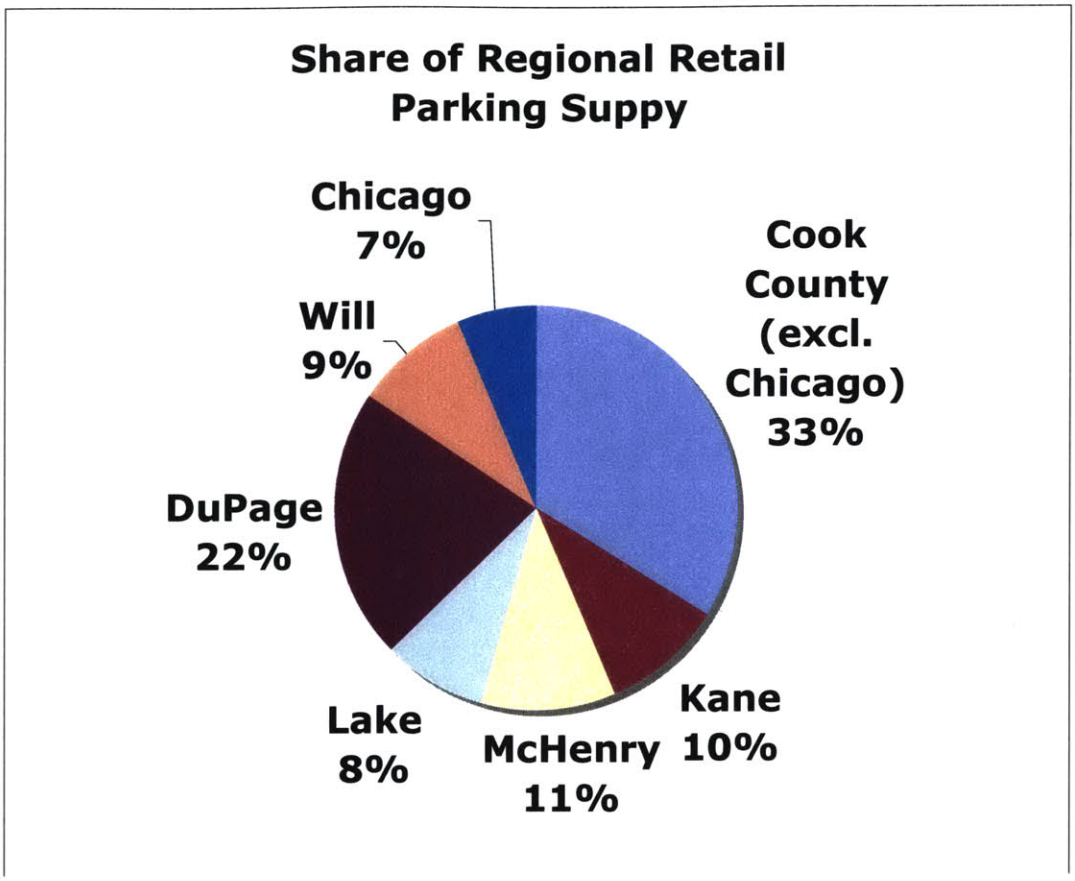

Figure 4.1.3: Approximate share of regional retail parking supply by county. (CB Richard Ellis, 2005) [37]

[37] Parking multiplier for outer counties (Will, DuPage, Lake, McHenry, and Kane) was 10 spaces per 1,000 square feet. Parking multipliers (per 1,000 sq feet) were 7 spaces and 5 spaces for Cook County and Chicago, respectively. Even with these lower multipliers, Cook County still accounts for the largest share of retail parking supply,

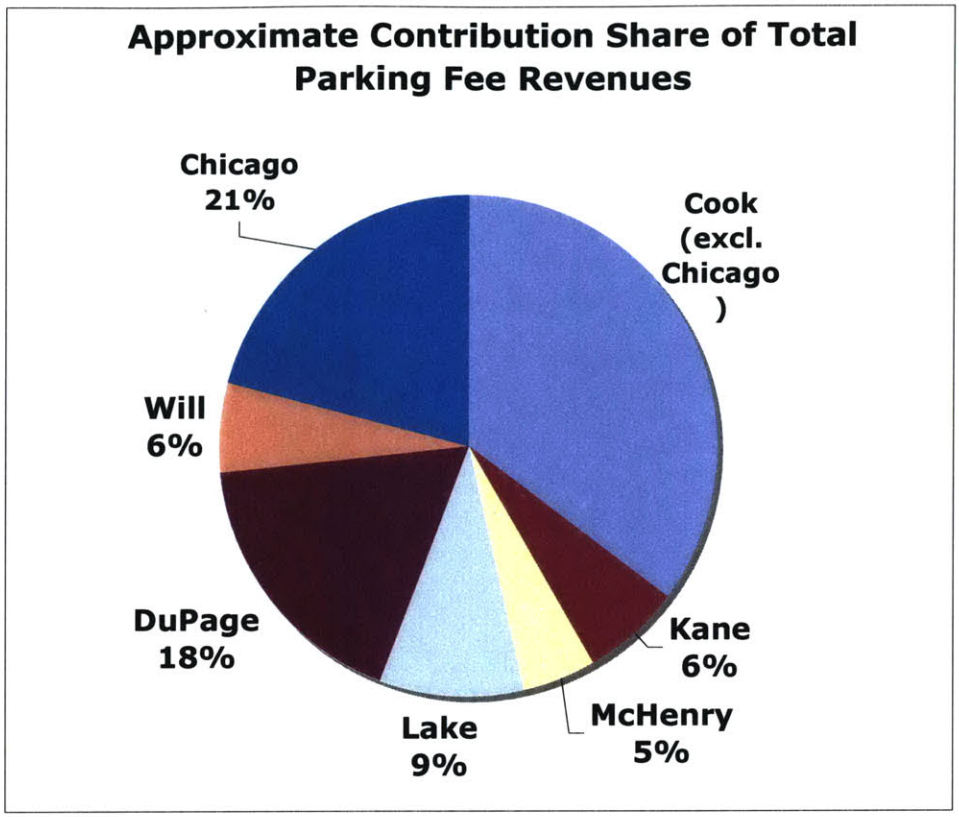

Figure 4.1.4: Approximate share of total parking fee revenues by county. Combination of Figures 4.1.2 & 4.1.3. (US Census, 2000 and CB Richard Ellis, 2005)

Recall from section 4.1.1 that the estimated upper bound of Cook County's commercial parking supply is 280,000. Obviously, this is a very small percentage of Chicago area parking supply (6% of an estimated 4 million spaces). Now we see that it is also a relatively small percentage of Cook County parking supply. Since the combined Cook County and City of Chicago share of regional parking supply is 46%, it can be estimated that Cook County's total supply is approximately 1.84 million. Consequently, the number of commercial spaces currently subject to the City/County parking taxes is only 15% of Cook County's total parking supply. This further reinforces the idea that the existing City/County parking taxes should not be confused with the proposed RTA parking fee.

4.1.3 Comparison with Sales Tax

From the perspective of the collar counties, the parking fee option should be much more attractive than any of the proposed sales tax increases. While the sales tax increase would be applied exclusively to the collar counties (raising the .25% to either .5%, .75%, or 1%), the parking fee would be distributed across the entire region.

As indicated in Chapter 3, an increase in the collar county sales tax from 0.25% to 0.50% would result in additional annual revenue of approximately $128,746,000. The City of Chicago and suburban Cook County would make no contribution to this amount. However, if a similar amount were to be raised using a parking fee, a significant proportion would come from Cook County. Given this estimated contribution share, the dollar amounts required from each county to produce the same annual revenue stream as a 0.25% increase in collar county sales tax ($128,746,000) is:

County	Share of $128,746,000
Cook (excl. Chicago)	$45,496,120
Kane	$8,099,954
McHenry	$6,240,604
Lake	$11,880,194
DuPage	$22,728,460
Will	$7,624,299
Chicago	$26,676,368

Table 4.1.3-1: County parking fee contributions needed to generate annual total revenues of $128,746,000

Given these conditions, the aggregate collar county parking fee contribution would be only 44% of the potential aggregate contribution under the proposed 0.25% increase in collar county sales tax.

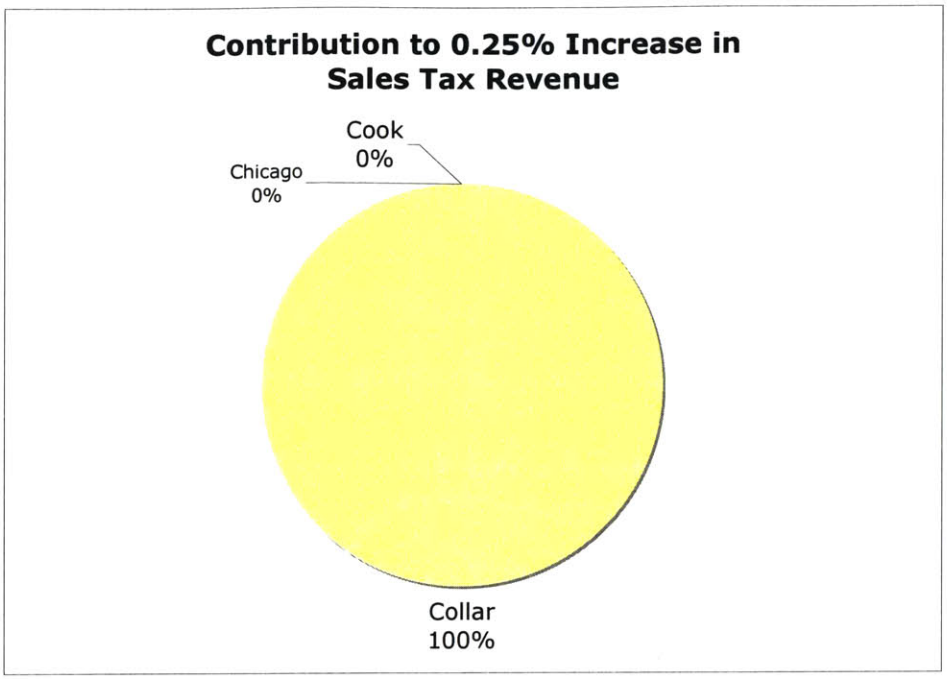

Figure 4.1.5: Contributions to 0.25% increase in collar county sales tax

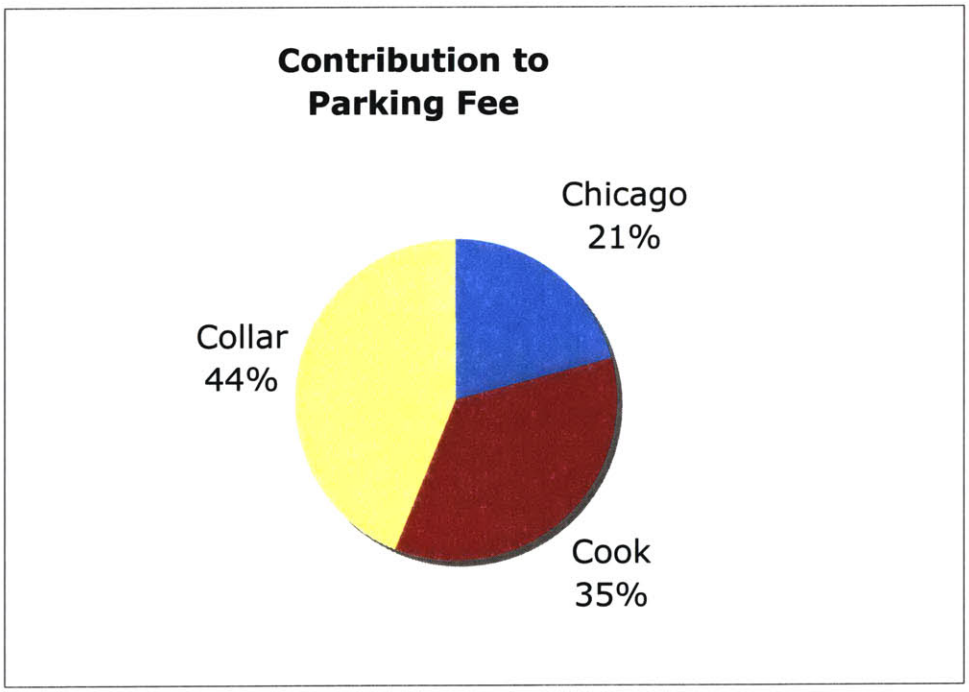

Figure 4.1.6: Contributions to parking fee revenue

4.2 Misconception: The Fee Will Force Economic Activity to Locate Elsewhere

One of the main criticisms of a parking charge is that it could force business investment away from the implementation area. Theoretically, a parking fee could cause operating expenses to increase to the point at which the current location is no longer cost-effective. There is some evidence that differentials in certain types of expenses, such as property taxes, may affect location decision-making.[38] However, this is only a realistic outcome if (1) the added parking fee cost is of a sufficiently large magnitude for business investors to consider major facility relocation and (2) there are feasible alternative locations for the business activity.

Actual data on this phenomenon is difficult to obtain. Parking fees have been implemented in the Central Business Districts of both Perth and Sydney, Australia. However, most information regarding business location is largely anecdotal. For instance, reports indicate (2001 WPS paper), that "several large developments" have been constructed or will be constructed in downtown Perth since tax implementation. Formal comparisons have not been made between pre- and post-levy levels of development. Furthermore, the relatively short implementation period (only since 1999) means that data on long-run effects are still largely unavailable. As for Sydney, a city that has had a parking fee for a slightly longer period of time (since 1992) and that imposes a much higher per-space rate it seems as though there has been no academic analysis of policy impacts. In fact, local transportation scholars seem to be relatively unconcerned about the tax.

4.2.1 Potential Counter-forces

If the two Australian policies did, in fact, have very little impact on business location decisions, it is likely due to two potential forces:[39]

Central Advantage Specific to Current Location: There are two major theories of spatial location: the *spatial competition model* (in which all nodes within a given region are assumed to be in competition with one another – this is a model that is often used by business interests) and the *monocentric model* (in which there is a clearly defined central place that tends to naturally be the most desirable location in a given region). The impact of the parking fee will be less if the area of implementation is more accurately approximated by the monocentric model. In such a case, the benefits of central location are much higher than the

[38] For instance, Dye, et al examined the impact of the unique Cook County property tax structure on business location. While property taxes in the collar counties are assessed at a uniform rate for both residential and commercial properties, there are different rates in Cook County (with commercial being the higher of the two).

potential cost-reduction benefits of relocation. It is likely that the location patterns of many major US metropolitan areas are most accurately approximated by a hybrid spatial competition/monocentric model. (Rufolo & Bianco, 1998)

Increased Location Value due to Transportation Improvements (Specifically Transit): In the case of Perth, the parking tax revenues were used to directly finance transit improvements. Specifically, the new cash flow enabled the city to offer free transit service throughout the city's central area. Such a perceptible improvement in the quality of downtown transportation was likely to have had an impact on its relative attractiveness as a business hub. In the long run, it is possible that such visible enhancements in accessibility could actually inspire even *more* businesses to re-locate to sites within the implementation area.

Within the US context, there is evidence that transit proximity does enhance the value of commercial properties. For instance, in a study of properties in California's Santa Clara County, Cervero & Duncan (2001) found that:

- Commercial properties within walking distance of a light rail station had average values 23% higher than comparable properties that lacked transit accessibility
- Properties within business districts and within a quarter mile of commuter rail stations (CalTrain) had average values 120% higher than comparable properties that lacked transit accessibility

Of course, in order for businesses to place such a high value on transit accessibility, the benefits of enhanced transit must be highly visible.

4.2.2 Guaranteed Counter-force: The Case for a Minimal, Regional Fee

While both the inherent advantage of certain locations and the potential transportation enhancements can be major factors in location decisions, it is not guaranteed that they will be enough to prevent business movement. In some situations, the locational advantage and infrastructure improvements may not be valued highly enough to impact behavior.

There is one additional factor that can be much more effective at limiting negative impacts on business location: geographic scale. As long as the fee is applied on a limited geographic scale, such as isolated to the CBD, the cost of moving just beyond the implementation boundaries remains relatively low. However, with a parking fee is applied on a large regional scale, the business activity must move a significant distance in order to achieve any sort of added benefit. The added parking fee costs would have to be quite substantial for a business to consider it worth moving so far away from existing customers, suppliers, and employees. In For instance, Schaumburg is the municipality with the second largest number of employees in the region (after Chicago). A Schaumburg based business that

owns its own property[40] would have to move at least 25 miles (beyond the Kane/DeKalb border) in order to avoid the parking fee. Firms that are trying to decide where to locate within the Chicago region will face the same parking fee costs regardless of whether they locate in McHenry, Lake, Cook, Kane, DuPage, or Will counties.

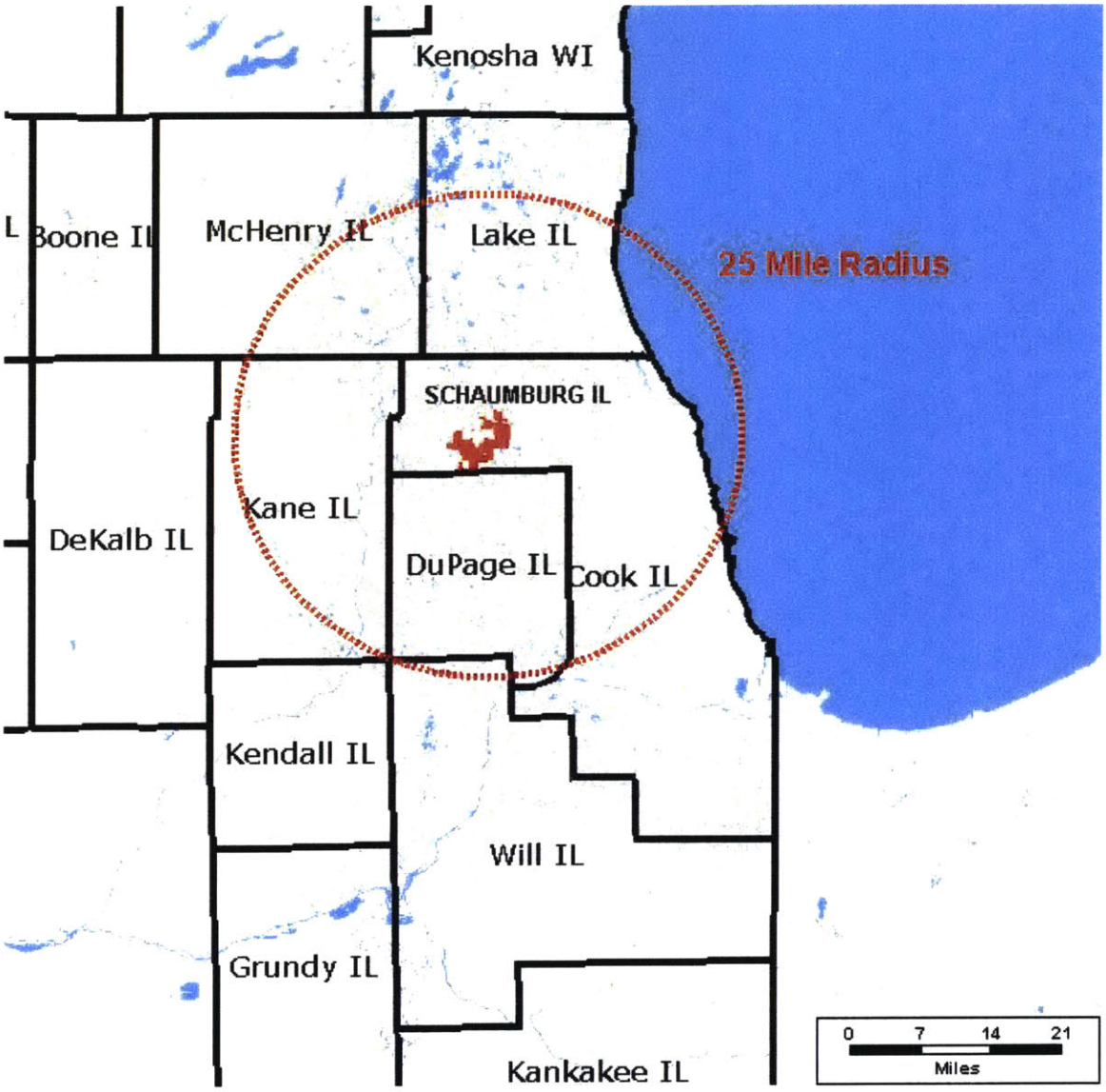

Figure 4.2.1: Location of Schaumburg, the region's second largest employment center. The city is at least 25 miles within the boundary of the parking fee implementation area. Business movement across such a large distance is unlikely.

[40] As will be discussed in greater detail in Chapter 5, businesses that lease space may never even see the expenses associated with a parking fee.

Additionally, by spreading the burden over a larger geographic area, it is more likely that a sufficient level of revenue can be achieved with a relatively minimal per-space fee. For instance, given the estimated regional base of 4 million spaces, it is easy to meet transit budgetary needs with a monthly per-space fee in the range of $3-$9. However, if the fee is only applied to spaces within the City of Chicago, higher rates would be necessary to achieve similar budget goals. Assuming that the number of eligible spaces in the City of Chicago is approximately 1 million, the following range would be required to achieve similar revenues to the regional predictions:

Fee Rate	**Total Revenue**
$12.00	$144,000,000
$16.00	$192,000,000
$20.00	$240,000,000
$24.00	$288,000,000
$28.00	$336,000,000
$32.00	$384,000,000
$36.00	$432,000,000

Table 4.2.2-1: Range of monthly per-space rates required if fee is applied on a more limited citywide scale

Fee Rate	**Total Revenue**
$3.00	$144,000,000
$4.00	$192,000,000
$5.00	$240,000,000
$6.00	$288,000,000
$7.00	$336,000,000
$8.00	$384,000,000
$9.00	$432,000,000

Table 4.2.2-2: Range of monthly per-space rates required if fee is applied on regional scale

Lower per-space rates means that the cost of the parking fee could be negligible for most businesses.[41] This further decreases the likelihood that the fee will influence location decisions.

[41] The rent-related implications of this will be explored in greater depth in Chapter 5.

4.3 Misconception: Roadway Improvement Is Better Regional Use of Funds

Some critics will surely contend that the region could be better served if the parking fee revenues were used primarily to enhance the regional roadway network. It is commonly believed that the most effective way to reduce automobile congestion is through the expansion of automobile infrastructure. Increased capacity is already a focus of roadway initiatives throughout the region. The following major roadway expansion projects will be implemented over the next several years:

- The Illinois State Toll Highway Authority plans to widen 117 miles of roadway including portions of the Tri-State Tollway (I-80/I-94/I-294), the Northwest Tollway (1-90), and the Ronald Reagan Memorial Tollway (I-88)

- The Illinois Department of Transportation plans to widen portions of both the Dan Ryan Expressway (I-90/I-94) and the Kingery Expressway (I-80/I-94)

Clearly, there is a need for greater transportation capacity. However, it is not realistic to believe that roadway expansion projects, most of which are limited in scale and take years to complete, can actually keep pace with travel demand. The track record for the region is certainly not encouraging. In fact, the ratio of available lane miles to vehicle miles traveled declined approximately 26% during the period 1982 to 2002.

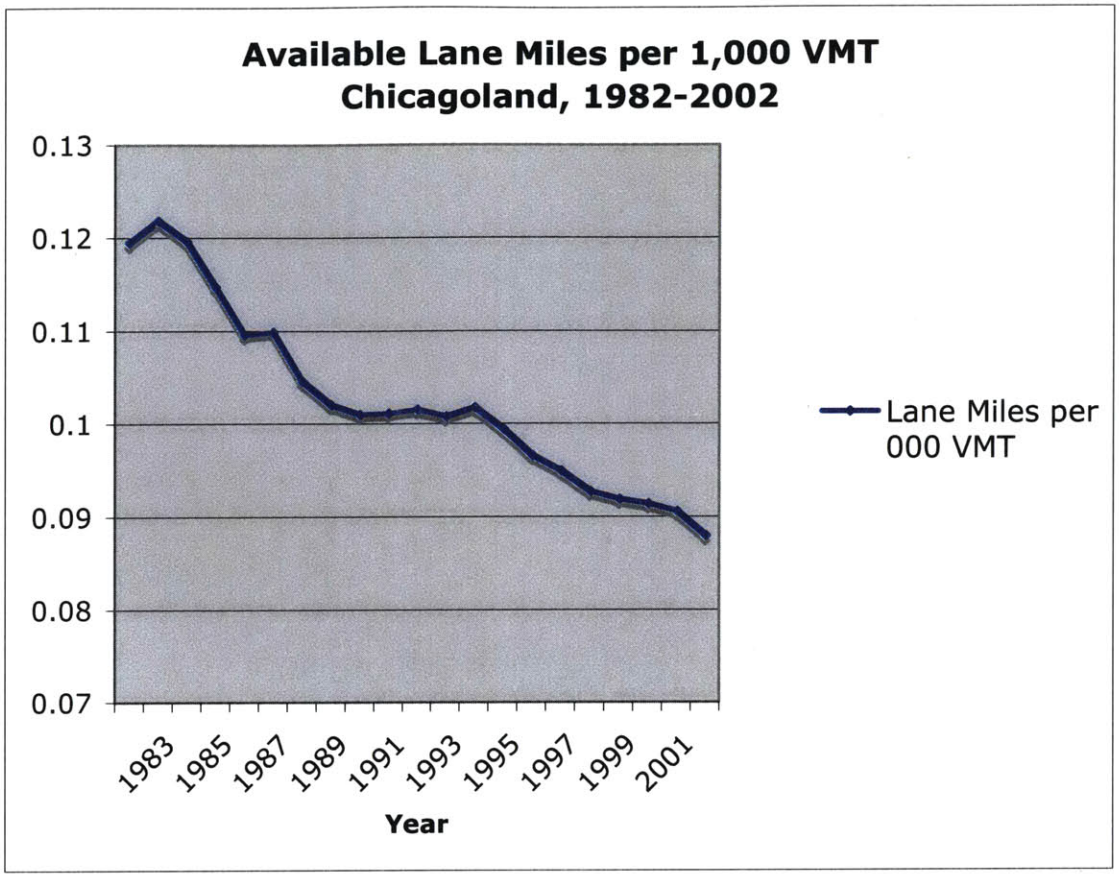

Figure 4.3.1: A comparison of the Chicago region's available lane miles and annual levels of Vehicle Miles Traveled (VMT). (TTI)

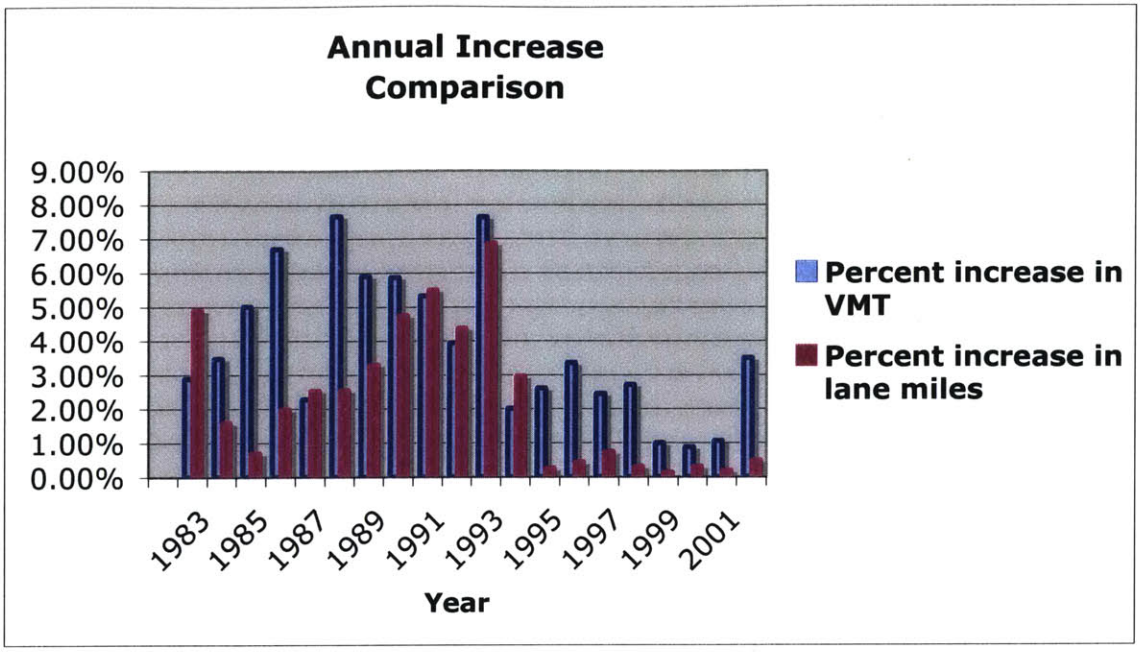

Figure 4.3.2: A comparison of annual roadway infrastructure expansion rates and annual increases in Vehicle Miles Traveled (VMT) within the Chicago region. (TTI)

TTI estimated that, just to maintain current levels of congestion, an additional 114 lane-miles are needed *annually.* Obviously, the regional goal of congestion reduction would require construction on an even grander scale. Even if the region could consistently generate 200+ lane-miles of additional roadway every year, the use of parking fee funds for roadway expansion would still be a flawed proposition for the following reasons:

4.3.1 Reinforces Silo Mentality

Some suburban road advocates are likely to argue that, if parking spaces in the suburbs are charged, then the proceeds should be used for infrastructure that directly enhances automobile travel. After all, for 26 years, proceeds from the federal gasoline tax were reserved exclusively for roadway projects. However, the belief that parking dollars should naturally support roadway expenses does not recognize the fact that auto and transit facilities are both components of a larger transportation network. Additionally, it reinforces the idea that suburban and urban interests are inherently at odds. While roadway improvements are certainly part of the regional transportation picture, exclusive investment in road facilities is not the most effective way to improve the overall health of the regional transportation network.

4.3.2 Long-run Implications of Roadway Expansions

Contrary to popular belief, roadway capacity enhancements do not actually result in long run reductions in regional congestion. A Surface Transportation Policy Project (STPP) study of historic data for 70 US municipalities found that there

was no connection between high roadway expansion investment and reductions in congestion levels. (STPP, 1998)

While roadway expansions may cause temporary alleviation of congestion, the effect of generated traffic will eventually result in higher traffic levels. When improvements on a particular roadway link, generally through capacity expansion, reduce congestion-related costs, additional trips are generated. Some are trips that may have already been occurring at other times or on other roadway links. However, the improvements also can induce a number of new trips. For instance, a transit rider may realize that the road improvements make driving preferable, so a mode shift occurs. Or, a driver that may have otherwise foregone certain unnecessary trips because of high roadway congestion may decide that the trip is suddenly worthwhile. In the long run, the specific roadway improvement may change land-use in the area, perhaps through the creation of more dispersed destinations, thus generating more traffic for adjacent links. When taken together, the different types of generated traffic can all but eliminate the original benefits of roadway expansion. Before planning major roadway capacity projects, there must be a consideration of these secondary effects, which are very difficult to reverse. (Litman, 2004)

While it seems as though the negative impacts of capacity expansion are limited to the roadway network and automobile users, there are additional negative implications for transit. One of the major transit-related implications of this phenomenon can be illustrated with the following graph:

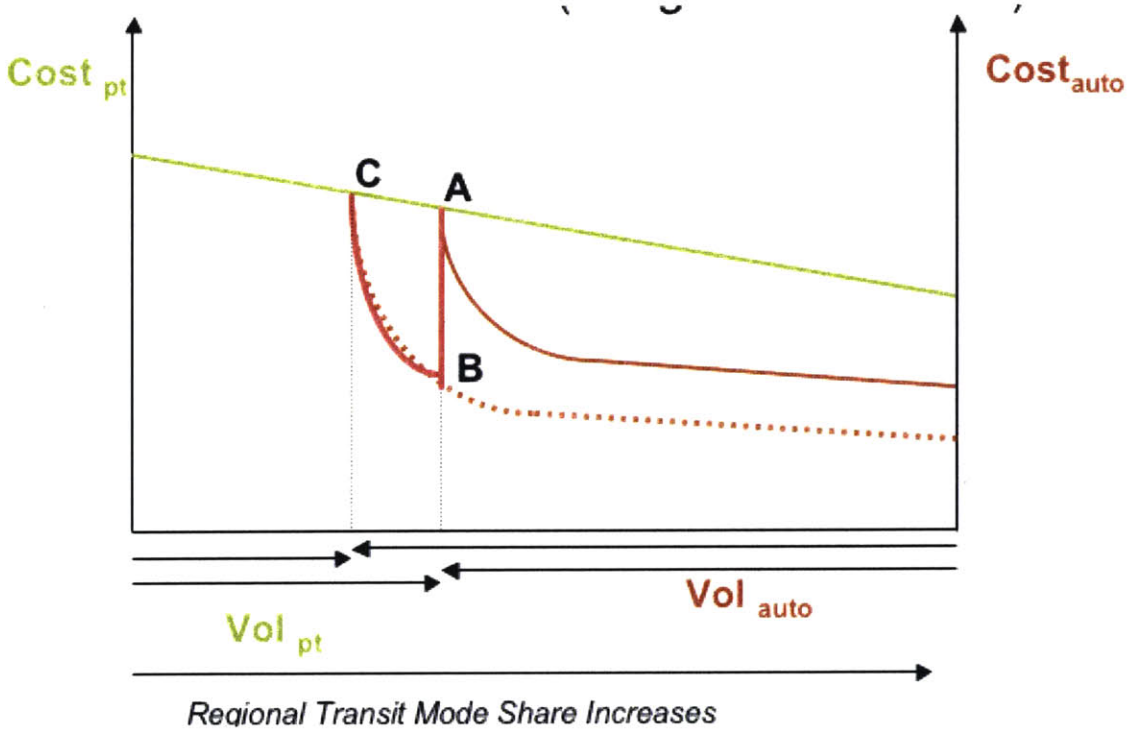

Figure 4.3.3: Congestion as Policy Driver (adapted from Jara-Diaz, 2003)

The perceived costs for transit (depicted along the left-hand y axis) and perceived costs for auto (depicted along the right-hand y axis) incorporate the perceived out-of-pocket monetary costs as well as less easily quantifiable costs of inconvenience, time, and physical comfort. It shows that, for most people that opt to use cars, the initial perceived costs of auto starts out significantly lower than transit. This does not mean that the absolute monetary cost of transit is actually higher than that of automobile travel, it just implies that many individuals generally perceive the combination of quantitative and qualitative costs in that manner.

As congestion grows (due to higher volumes of auto traffic) there are gradual increases in perceived auto transport costs. These increases continue until the perceived cost level reaches the point where there is indifference between transit and auto (Point A). Theoretically, it is at this point when transit starts to seem like a feasible option to many of those that traditionally have traveled by automobile.

However, before that extreme point is reached, there is historically a tendency to counter the costs of congestion with public investments in roadway capacity. These increases in roadway supply lowers user perceived costs in the short run (movement from point A to point B on the graph).

Of course, the condition at point B does not last for very long. The lower costs of automobile travel will attract even more drivers and gradually the volume of traffic increases to a level greater than it was previously. At the same time, the number of transit users has decreased (some have shift to auto), thus making the cost larger for remaining transit riders (less convenient service, potential increases in fares just to keep service going, etc.)

The new equilibrium volume levels (Point C) occur at a moment when both auto and transit costs are significantly higher than they were before the roadway capacity expansion. Ultimately, everyone is made worse off by the roadway investment.

However, if the investment is directed toward transit, there is a reduction in costs for all. There are reductions in costs for transit users (better service, stable fares, etc) and reductions in existing congestion would also make those that remain on the roadway better off. Thanks to the effect of induced travel demand, roadway investment is a one-way ticket to making everyone worse off, whereas transit investment really can benefit everyone throughout the transportation network.

4.3.3 Additional Negative Impacts of Roadway Construction

It is unlikely that widespread highway construction has been the only factor in the creation of sprawling, transit-incompatible development patterns. As discussed earlier (Chapter 3), certain government land-use regulations also played a role. However, with unconstrained, poorly coordinated expansion of the roadway

network, land uses in the region become even more difficult to connect with transit.

This is not meant to suggest that the region should shift to an exclusive focus on transit investment. The region's highway network does serve an important purpose and maintenance should remain on a high level. Roadway operational innovations such as freeway ramp metering, traffic signal coordination, incident management, and high occupancy vehicle (HOV) lanes all have a role in the larger transportation network. However, balanced support of both transit and roadway infrastructure must be a much greater priority than it has been. Complementing this balance would be an increased focus on general mobility initiatives such as enhanced streetscaping, bike lanes, and park and ride facilities.

4.4 Misconception: Parking Fee is Primarily a Travel Demand Management Tool

4.4.1 Pricing Can Have An Impact

Much of the parking-related research has tended to focus on potential travel demand response to different parking situations. For instance, Hensher & King (2001) use a stated preference analysis to determine the sensitivity of driver choice to parking curfews & prices in the Sydney Central Business District.[42] Their work shows that increasing the price of parking, if politically feasible, can have a significant impact on travel mode choice. A number of other studies have also found that assigning significant prices to parking or introducing employer cash out schemes can alter driver behavior. (Higgins, 1992)

However, none of these studies are particularly relevant in the case that drivers do not actually perceive the parking fee or in the case that the fee is too low to make drivers consider other options. While it may seem similar to congestion charging schemes such as the one introduced in London during 2003, there is one very major difference: drivers may never actually perceive an increase in driving costs. While congestion charges are applied directly to the driver, a fee on parking spaces would be applied to the parking facility owner. There is no guarantee that facility owners will actually pass the costs along to drivers. In fact, in most cases, the costs will not be passed along to drivers. [43] So, while cities considering a parking tax may be tempted to use traffic demand management as one of the major justification, a parking tax alone is not a reliable tool for this purpose. The lack of impact on driver cost supports the belief that a parking fee can be politically feasible.

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[42] Unfortunately, there was no actual discussion of the parking levy that has been imposed on downtown Sydney. All price figures were hypothetical.

[43] Property-owner response to the proposed parking fee level will be examined in greater detail in Chapter 5.

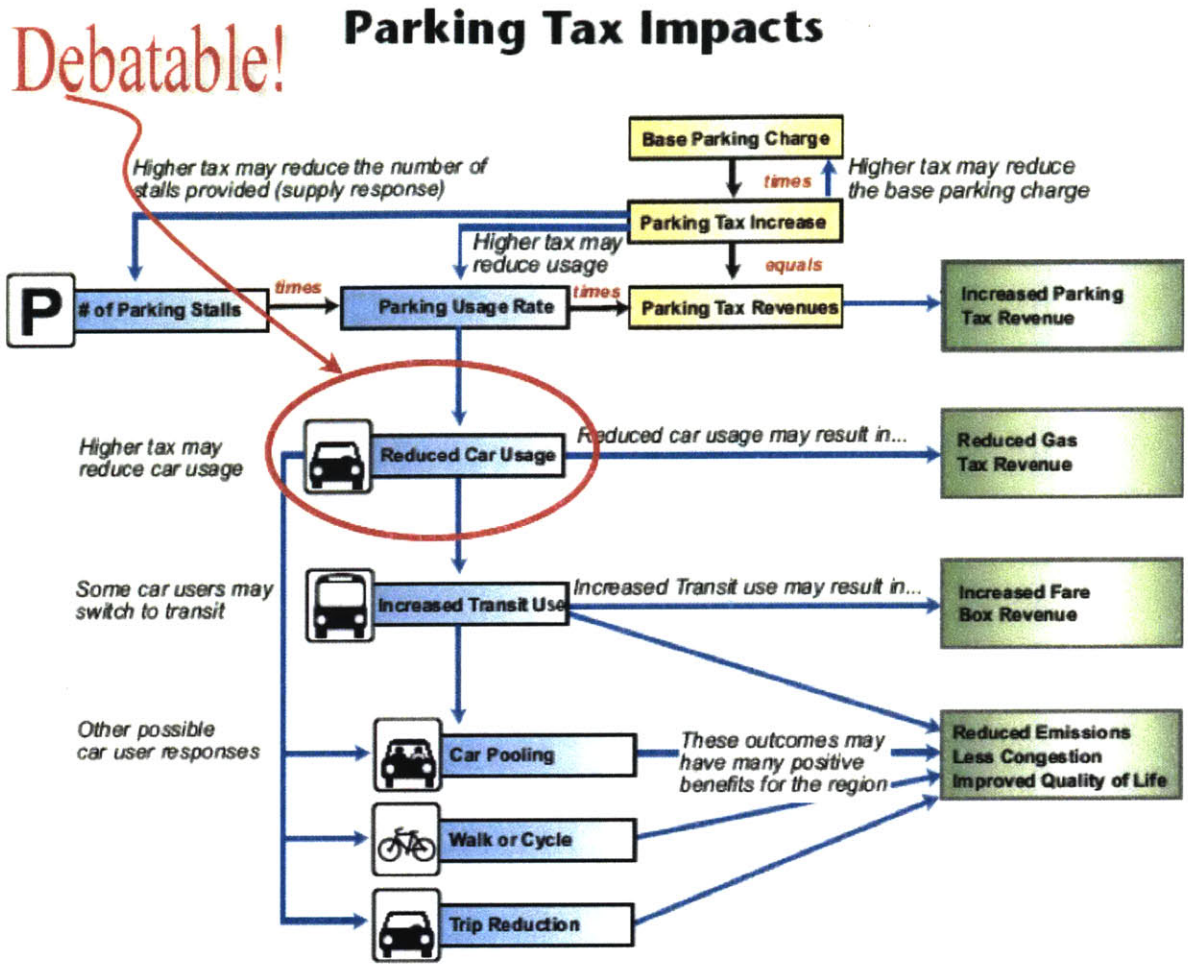

Figure 4.4.1: Parking Tax Impacts Flowchart (InterVISTAS Consulting, Inc. for Vancouver TransLink)

4.4.2 Options, Not Penalties

As Donald Shoup (2005) explains, a parking tax must be combined with other strategies to truly achieve broader transportation goals. Congestion reduction will not magically occur because higher parking rates have been implemented. If there are few realistic options, travel behavior will not change. Complementary policies, such as expanded transit services and parking cash-out programs, must also be implemented in order to achieve any major results.

While fees can have an impact on driver behavior, it has been suggested that incentives could be much more effective at altering driving habits. Baldassare, et al, (1998) found that respondents to the 1992 Orange County Survey were much more likely to change commuting behavior if presented with employer cash-out, improved transit, or carpool options than they were when faced with parking, smog, or congestion fees.

There is often the perception that the implementation of a parking fee will be a travel demand management panacea that will result in significant conversion of auto trips to transit trips. Both Perth and Vancouver have cited this expected benefit in their educational literature. See Figure 4.4.1: for Vancouver's picture of potential effects. After all, if people must pay more to park, then alternative options are likely to look better. However, this is not necessarily the case. First, in order for drivers to perceive increased driving cost, they must actually be charged the additional amount. In some cases, the fee may certainly be passed along to the user. However, in most cases, the facility owner is conducting his own internal cost/benefit calculations. We need to examine the fee impact from this perspective in order to get the whole story.

A widely celebrated example of travel demand management is the London congestion charge, implemented in early 2003. By imposing a £5 daily charge on any vehicle entering the boundaries of downtown London, local officials hoped to reduce traffic levels in the highly congested city. By all accounts, the congestion charging scheme was a stunning success, resulting in current levels of congestion that are 30% less than pre-charge levels. However, it must be remembered that London was, and remains, a city with ample alternative transport options. Prior to the implementation of the travel demand management policy, only about 10% of peak period trips to the downtown were automobile-based (Litman, 2004) When faced with the new charge, travelers faced a built-in set of transport mode choices. Additionally, London substantially increases bus capacity and frequency at the same time it imposes the congestion fee. Consequently, the long-term success of the program depends on continued maintenance of high transit service levels and the implementation of any expansions needed to keep pace with increases in new ridership. A city hoping to follow in London's footsteps, either with congestion pricing or another demand management strategy, must first make sure that transit capacity is sufficient from the outset. If there are any doubts in regards to the long-run sustainability of network service levels, then those issues must be addressed in full.

Ultimately, any serious endorsements of the Chicago parking fee should not cite traffic reduction as one of the primary, direct goals. This is first and foremost a revenue generating policy designed to prevent serious shortfalls in transit operations funding levels. Under the CTA's crisis budget scenario, many people throughout the region will face new limitations in travel mode choice. Once transit network is ensured a stable and healthy future, policy-makers can begin to focus their sights on other goals. One advantage of the parking fee versus other funding sources is that it can be adjusted upward as transit needs demand. So, in addition to avoiding the pending budget crisis, the fee can enable the RTA to actually improve public transportation over time. In turn, the long-run transit improvements can help the region mitigate congestion and encourage smart growth land-use. So, in lieu of resorting to demand restraint, regional goals can be achieved through supply restructuring and public transport expansions.

4.5 Chapter Summary

In order to build more broad-based support, it will be important to clarify several common misperceptions about the parking fee. First, the parking fee will not be imposed exclusively on the collar counties nor will it have the largest impact on these outer suburbs. Second, there is no reason to expect the fee to cause business activity to relocate out of a desire to avoid the fee. In fact, the regional transportation improvements that will result from the fee could draw business activity, particularly to areas of high transit accessibility. Third, investment in roadway expansion is not a feasible alternative use of parking fee revenues. If regional mobility goals are to be met, the funding should be used for transit or other alternative forms of transportation. Forth, the parking fee should not be viewed as a means to constrain travel demand. The fee will be too modest to impact behavior and is most useful as a generator of revenue for transit. If the parking fee ultimately results in altered regional land-use and travel patterns, it will be because it enables a greater variety of alternative transportation choices.

5 Incidence & Magnitude

The previous chapter focused on basic misconceptions that would be most likely held by the general public. Overcoming erroneous perceptions can foster greater levels of policy acceptance throughout the region. It is reasonable to expect that the parking fee:

- Will **not** place a larger burden on the collar counties
- Will **not** cause business activity to locate elsewhere
- **Will** support the long term mobility of the region
- Will **not** directly impact the cost of automobile usage

While clarification of each of these issues is a relatively simple matter, understanding of fee incidence and magnitude requires a more detailed analysis. Even if the general public is largely supportive of this initiative, most commercial property owners will still perceive it as a major threat. This is completely understandable considering the fact that the parking fee will represent a new property-level expense. Property owners can be expected to claim that the parking fee has a major adverse impact on real estate.

5.1 Theoretical Approach

5.1.1 Can the Owner Successfully Pass the Cost Along?

Theoretically, a property owner faced with a new expense will consider the option of passing the fee along through rent. However, this is not a straightforward decision. The owner is aware that increased rents will likely result in a negative demand-side response. The degree to which tenant demand declines will be dependent upon the prevailing market elasticities, which are always difficult to know precisely.

Demand Elasticity: While tenants can be fairly mobile, it is expected that demand is not entirely elastic. This is especially true in the case of a fee that is applied uniformly across the region. In order to avoid the higher rent, the tenant may have to move quite a distance, which is likely to alter proximity to existing customers, suppliers, and competitors. (McDonald, 1996)

Supply Elasticity: For the purpose of this analysis it is assumed that, in the short term, property supply is very inelastic with regard to price. This is due to the inherent "stickiness" of real estate supply. Neither construction nor demolition are quick processes. However, there is some elasticity of supply in the long-run, mostly in terms of supply increases. After all, an increase in market prices can

easily spark a construction boom, but even sharp declines in market prices are unlikely to result in widespread demolition of existing space.[44]

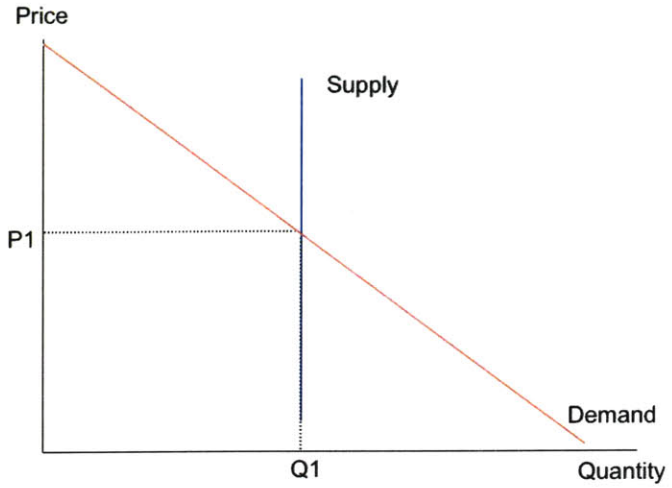

Figure 5.1.1 Original property market equilibrium with inelastic short-run supply curve.

[44] It is assumed that supply elasticities are of a similar magnitude for all property sector types (retail, office, and industrial). It was originally thought that there are significant differentials between supply elasticities for different types of tenants. For instance, under traditional land use patterns, downtown retail supply was the most inelastic (difficult to construct more in the most desirable shopping areas), office space was perceived as slightly more elastic (if more space is needed, there is the possibility of constructing taller office buildings), and industrial supply was the most elastic (industrial tenants can be generally more flexible about location, so new facilities can be constructed in a wide variety of non-central places). However, changes in land-use patterns over the past few decades have blurred the line between the locational needs of different types of tenants. For instance, premium retail is now just as likely to be located in a suburban shopping mall as in the dense urban core. In general, it is likely that differentials between supply elasticities are not as defined as previously believed. (Jones & Orr, 1999).

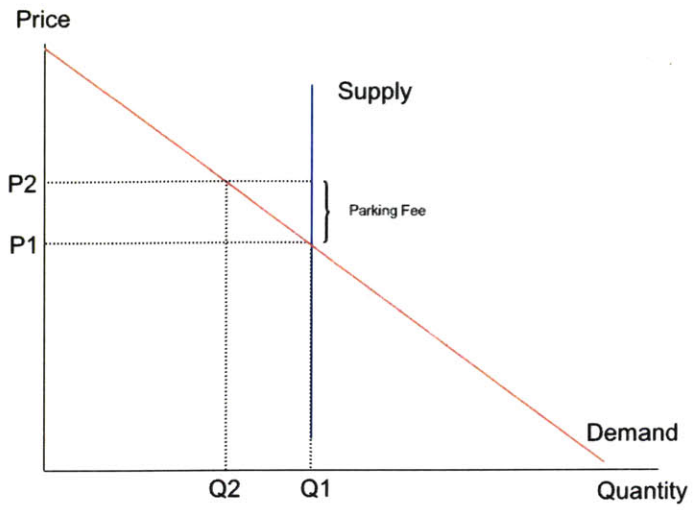

Figure 5.1.2: Demand shift in response to increased price. New quantity demanded is indicated by Q2.

If the property owner does decide to pass the added cost along through higher rents, the new cost of rentable space is increased from P1 to P2. In response, the market demand for space shifts from Q1 to Q2. However, the short-term inelasticity of supply prevents the property owners from adjusting to the new demand quantity. As a result, there is a mismatch in the market between supply and demand, with more high-priced property available than the market requires. Since this makes vacancy more likely, the total rental income is reduced, thus impacting the property owner's operating structure and causing declines in property value. In order to recapture the previous level of demand, individual property owners would be tempted to absorb the cost of the fee, thus reducing the rent to previous levels (P1). However, a return to pre-parking fee rent levels would also impact the owner's operating cost structure and, ultimately, the property value. In considering how these changes in income or expenses can impact the property's value, it is useful to know that property level equilibrium can be described with the following equation:

(Total Rental Income[45] – Total Operating Expenses[46]) / Property Value =

Net Operating Income / Property Value =

Cap Rate

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[45] The original total rental income is determined by the original rental level, as depicted by P1 in the graphs.

[46] Total operating expenses is a combination of property Operations &Maintenance costs plus any extra expenses, such as the parking fee.

Since the cap rate for the specific property is exogenously determined by the aggregate capital market, it should be treated as a constant, requiring readjustments elsewhere equation to regain market equilibrium. So, regardless of whether rental incomes decrease or operating expenses increase, maintenance of market equilibrium requires a reduction in property value. For example, absorption of the parking fee by the property owner should be interpreted as an increase in total operating expenses, which will then force declines in the property value. If this occurs on an aggregate level, market-wide declines in property value will gradually force changes in the total real estate supply. As depicted in Figure 5.1.3, there will eventually be a new equilibrium supply that was lower than the original level. Properties that were most costly to operate (including those impacted most severely by the parking fee and older buildings that were of marginal value in the first place) will no longer be in the supply pool. A new equilibrium is achieved where supply quantity equals Q3.

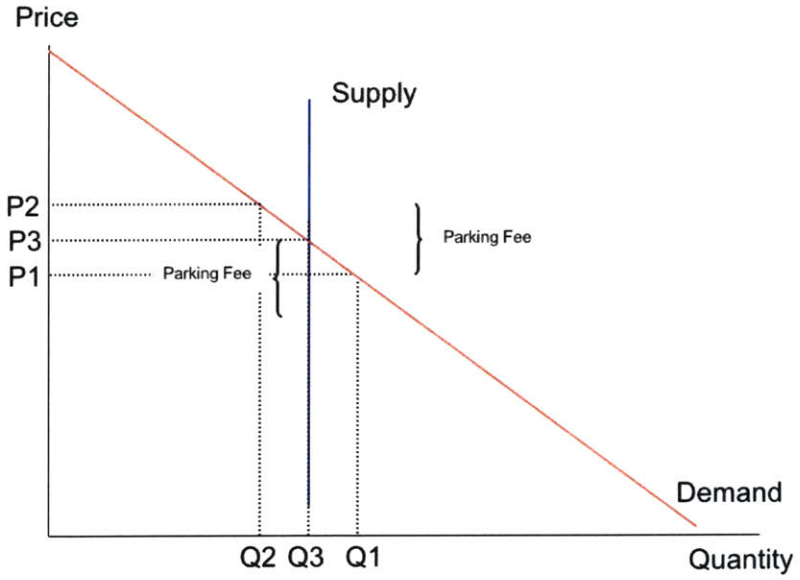

Figure 5.1.3: New property market equilibrium indicated by P3 & Q3

While the individual property owner is still absorbing the parking fee, the overall property operating cost structure has shifted. Both non-tax operating expenses and property values are at different levels (lower and higher, respectively) than they were in the original equilibrium. So, although Q3 is lower than Q1, it is still high enough to re-achieve balance with the market cap rate.

5.1.2 What are the Long-Run Market Effects?

Even though the commercial property stock is very inelastic in the short-term, it can very gradually change in response to market demand. This means that, in the long run, market supply is not completely inelastic. More accurately, the long-run supply function is likely to be kinked, representing the concept that supply increases are more likely to occur than supply decreases.

The average degree of elasticity can affect the market-wide levels of equilibrium price and quantity. For instance, if the long-run property supply is still relatively inelastic, the market-wide equilibrium could be depicted by Figure 5.1.4:

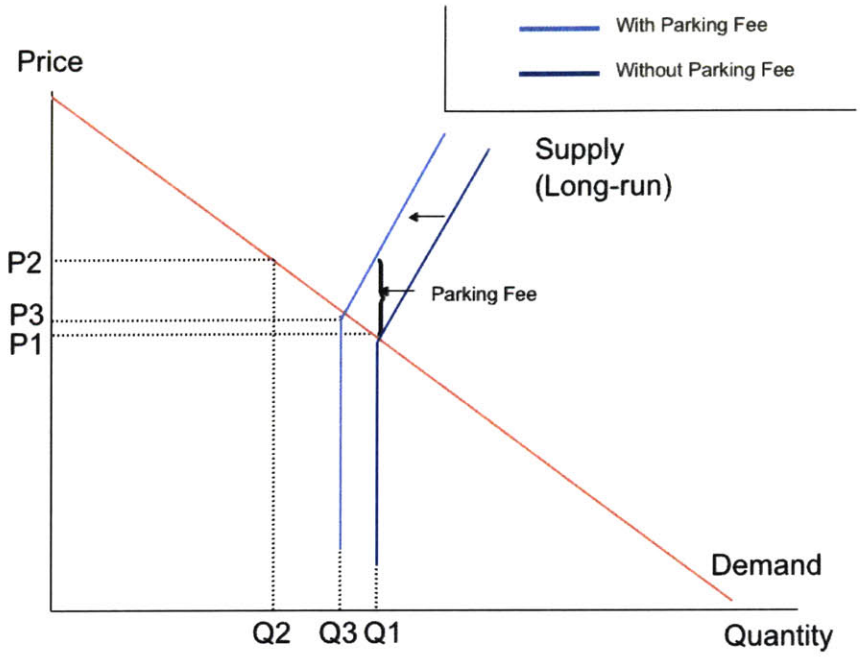

Figure 5.1.4: Real estate market equilibrium when long-run supply is relatively inelastic

In the inelastic case, the difference between the pre-fee equilibrium and the post-fee long-run equilibrium is not particularly large. The low market-wide inelasticity of supply means that the typical property-level equilibrium will not be drastically different from the one that existed prior to parking fee implementation. Specifically, the new equilibrium values of price and quantity, indicated by P3 and Q3 in Figure 5.1.4 are relatively close to the original values, as indicated by P1 and Q1.

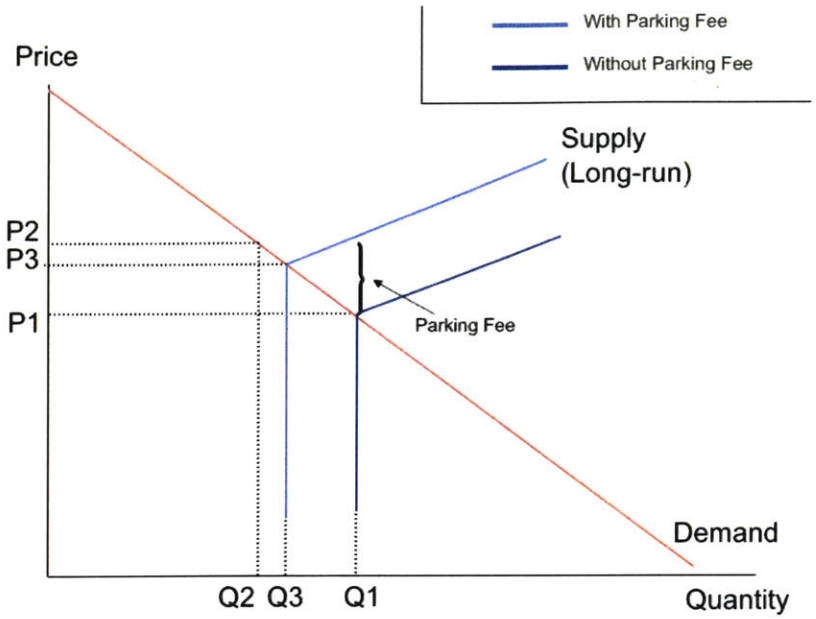

Figure 5.1.5: Real estate market equilibrium when long-run supply is relatively elastic

On the other hand, the both the tenant and property owner's situation can be different if the market-wide supply elasticities are relatively high. This scenario is illustrated by figure 5.1.5. In this case, there is a larger difference between the original pre-fee equilibrium and the post-fee long-run equilibrium. In other words, there is a greater difference between P1 and P3, which means that overall rents will be higher than in the inelastic case. Given these market conditions, the tenant will experience a larger impact from the parking fee than in the inelastic supply case.

5.2 The Magnitude of Additional Cost

The analysis above examines the theoretical effects expected from the implementation of a parking fee. Let's take a moment to review the process:

The parking fee is implemented and property owners *perceive* an increase in total operating expenses. In the short-run, the property owner may be successful in passing the full parking fee expense along to tenants. However, if the rent increases are *large enough*, the owner will face *noticeably* lower levels of tenant demand, which could have a *significant impact* on real estate profits. If this impact is of a *sufficient magnitude*, the owner could be convinced that at least partial absorption of the fee would be a better choice. Owner and tenant continue to respond to *market cues* as prevailing levels of price and quantity gradually approach a general equilibrium. The long-run equilibrium levels of price and quantity will ultimately depend on the relative elasticities of property demand and supply.

If viewed in this light, the impact of the parking fee depends on how various stakeholders perceive its magnitude. Although the theoretical market response can be illustrated clearly, actual changes in equilibrium levels may be much less perceptible in practice. If the magnitude of the parking fee is low relative to other potential expenses, market response may be minimal.

While specific property level data is relatively difficult to obtain, it is possible to estimate values for general types of properties. The following analyses have been made based on a review of current property listings and general rental rate data for the region. As will be demonstrated, it is ultimately not so crucial to have very exact number for each of the property level sub-components (gross revenue, leasable floor area, operating costs, etc.). Rather, it is the order of magnitude that truly matters when trying to determine the relative impacts.

This analysis starts with an urban commercial parking facility case and gradually moves outward to the realm of suburban office buildings and "big box" retail properties. For each separate case, total cost structures are determined, both with and without the proposed parking fee. We then see how different parking fee levels affect the overall costs, the net operating income, and potential rental rates (in case the property owner decides to pass the fee along to leaseholders through rent increases).

5.2.1 Urban Core Facilities: For-Profit Providers

According to a 1997 City of Chicago survey, there were 96,189 publicly accessible parking lots in the central Chicago area. This included the Loop, the Lakefront, the South Loop, the Near West Side, Streeterville, River North, and Upper Near North areas. More recent estimates have rounded that figure up to 100,000 to account for new construction in the area.

Both Cook County and the City of Chicago each impose separate ad valorem taxes on parking facilities of this type. The structure of each tax is depicted below:

Daily Parking Rate	Tax Rate	Weekly Parking Rate	Tax Rate	Monthly Parking Rate	Tax Rate
$3.00 and below	0	$15.00 and below	0	$60.00 and below	0
$3.01-$4.99	$0.50	$15.01-$24.99	$2.50	$60.01-$99.99	$10.00
$5.00-$11.99	$0.75	$25.00-$59.99	$3.75	$100.00-$239.99	$15.00
$12.00 and up	$1.00	$60.00 and up	$5.00	$240.00 and up	$20.00

Table 5.2.1-1: Cook County Parking Tax

Daily Parking Rate	Tax Rate	Weekly Parking Rate	Tax Rate	Monthly Parking Rate	Tax Rate
$2.00	0	$10.00 and below	0	$50.00 and below	0
$2.01-$4.99	$0.75	$10.01-$24.99	$3.75	$50.01-$99.99	$15.00
$5.00-$11.99	$1.50	$25.00-$59.99	$7.50	$100.00-$239.99	$30.00
$12.00 and up	$2.00	$60.00 and up	$10.00	$240.00 and up	$40.00

Table 5.2.1-2: City of Chicago Parking Tax [47]

As indicated in the previous chapter, this type of space will not be exempt, so it will be important to determine how the proposed policy would impact the existing cost structure. As opposed to most other (i.e., non-paid) parking facilities in the region, these facilities already face the fixed costs of fare collection and each has already established some sort system for separating taxes/fees from revenue. In fact, since it much less complicated to calculate & report, the proposed flat fee will be easier for facilities to administer than the existing City & County ad valorem taxes.[48]

For the most part, it is assumed that all off-street parking in the CBD, even if it is not a commercial provider, has limited access in some way, either through an attendant or gated mechanism. Overall, a facility that did choose to pass the fee directly along to users would face a relatively minimal cost of implementation.

The Daily Rate

According to the 4th Annual Colliers North American Parking Rate Survey, the average daily parking rate in Chicago is $22.50 (based on survey conducted during June 2004), with a low of $15 and a high of $30. The analysis below assumes a daily rate of $20, slightly below the Colliers average for the garage. It is reasonable to estimate that the typical annual cost per space for a downtown

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[47] The City parking tax rates were raised during this year, resulting in slightly higher taxes in all categories. While the curious reader can find the new rates listed in Chapter 3, only the old rates are listed in this chapter. Since the property level analysis was conducted before these rate increases were known, the old daily tax of $2 was used instead of the new daily tax of $2.25. This obviously has an impact on the base cost structure. For instance, the annual parking taxes under the $2 rate was $243,000 while the annual taxes paid under the new $2.25 rate would be $263,250. However, this will not substantially alter the fundamental analysis of parking fee impacts.

[48] The tiered structure of the existed tax has been criticized by facility operators for its high level of complexity. Rather than simply report annual revenues, the operator is required to document each type of transaction (daily, weekly, or monthly) and received very little technical support from either the County or City. (Berk & Associates, 2002)

garage is $750 and for a downtown garage and $500 for a surface lot. (Litman, January 2004). Assuming that the garage has 300 spaces and has a 75% occupancy rate, the following estimations can be made:

Actual Revenues	$1,215,000
Overall O&M Costs	($225,000)
Existing Parking Taxes (Both County & City)	($243,000)
Costs Before Parking Fee	($468,000)
Proposed Parking fee	$0
Total Costs	($468,000)
Total Annual Profit/(Loss)	$747,000

Table 5.2.1-3: Urban Commercial Garage Cost Structure without Parking Fee

Actual Revenues	$1,215,000
Overall O&M Costs	($225,000)
Existing Parking Taxes (Both County & City)	($243,000)
Costs Before Parking Fee	($468,000)
Proposed Parking fee	($10,800)
Total Costs	($478,800)
Total Annual Profit/(Loss)	$736,200

Table 5.2.1-4: Urban Commercial Garage Cost Structure with $3 per Space Monthly Fee

The implementation of a $3 dollar monthly fee causes annual total costs to increase by about 2.3% and overall profits decline by approximately 1.4%. If more aggressive fees are implemented, then the annual impacts are as follows:

Fee Rate	Annual Parking fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$3.00	$(10,800.00)	$(478,800.00)	2.3%	$736,200.00	-1.4%
$4.00	$(14,400.00)	$(482,400.00)	3.1%	$732,600.00	-1.9%
$5.00	$(18,000.00)	$(486,000.00)	3.8%	$729,000.00	-2.4%
$6.00	$(21,600.00)	$(489,600.00)	4.6%	$725,400.00	-2.9%
$7.00	$(25,200.00)	$(493,200.00)	5.4%	$721,800.00	-3.4%
$8.00	$(28,800.00)	$(496,800.00)	6.2%	$718,200.00	-3.9%
$9.00	$(32,400.00)	$(500,400.00)	6.9%	$714,600.00	-4.3%

Table 5.2.1-5: Range of Impacts on Urban Commercial Garage (Property Level)

Since parking is the primary purpose and sole source of revenue for these properties, they are likely to be more sensitive to parking related policies than properties for which parking plays a more complementary role. As discussed earlier, absorption of the costs would mean direct reductions in the value of the parking facility. A 4.3% reduction in property value could be considered substantial.

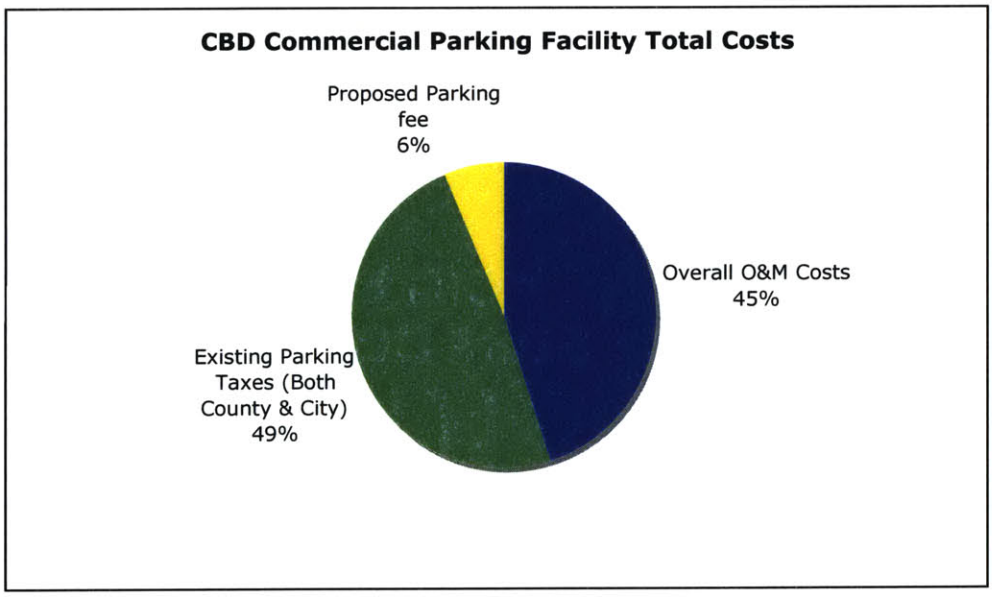

Figure 5.2.1: Cost Breakdown for CBD Commercial Garage, Assuming a $9 monthly parking fee

If the facility owner did decide to pass these increases along to customers, daily parking rates would just have to be raised from $20 to the following amounts to achieve the same profit level as before:

Fee Rate	New Daily Parking Rate	Percentage Increase in Daily Parking Rates
$3.00	$20.18	0.9%
$4.00	$20.24	1.2%
$5.00	$20.30	1.5%
$6.00	$20.36	1.8%
$7.00	$20.41	2.1%
$8.00	$20.47	2.3%
$9.00	$20.53	2.7%

Table 5.2.1-6: Range of Impacts on Urban Commercial Garage (Property Level)

Operators have generally found that they can pass the full amount of the existing City & County parking taxes along to customers with little reduction in demand. (Berk & Associates, 2002)[49] It is unlikely that customers that are already paying very high parking rates[50] to access the downtown will readily alter their travel patterns in response to the minor incremental increases caused by the RTA parking fee. At most, complete coverage of the additional fee would require an approximately 2.7% increase in daily parking rates. Since parking is probably a very small fraction of an individual's total annual budget, this miniscule increase may not even be perceived.

However, in a more competitive parking market, rate increases could be more difficult to impose. This might also occur if significant improvements in transit provided travelers with more attractive transportation alternatives. Further complicating the market picture could be the fact that facilities in certain parts of the downtown must compete with the artificially low rates of public facilities. These include the recently constructed Millennium Park garage, a City-owned facility with 2,000+ spaces that only recently raised its 24-hour rates to $16. Ultimately, declines in demand might force private facility owners to absorb at least a portion of the cost to retain customers. This hypothesis is supported by work conducted by Kulash in San Francisco during the 1970s implementation of commercial lot taxes.[51] At this time, there was a major increase in parking taxes

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[50] According to Colliers, downtown Chicago had the fifth highest parking rates in the nation, behind Midtown New York City, Downtown New York City, Boston, and San Francisco.

[51] In the Kulash analysis of this case, it was automatically assumed that the entire 25% increase would be passed along in the parking rate. This was largely because this was the required response of the municipal lots and the city/county actually owned about ½ of the downtown garages. Additionally, most of the most detailed data was supplied by the municipal lots, since this was much easier to obtain than data for private lots. However, the limited data gathered from private facilities (info gathered from approx. 20% of facilities that were not publicly

on commercial facilities. While the public facilities tended to pass the entire burden along to customers, there was evidence that the private facilities absorbed at least some of the cost, presumably to remain competitive.[52] However, absorbing a portion of the cost is obviously better than having to absorb it in its entirety. More work is needed to determine the specific elasticity of commercial parking demand in downtown Chicago.

5.2.2 Chicago Retail – Urban Fringe

With this case, we will consider a hypothetical Chicago retail property that is within city limits, but closer to the outer fringes with no existing control mechanism for parking (i.e., no pass machine or attendant, so drivers can come and go freely). Thus, there is no system in place to collect parking charges directly from drivers. There are approximately 16,000 square feet of leasable space and approximately 40 parking spaces. While this is a bit lower than the Cook County minimum for retail use[53], it is more than adequate for the City of Chicago's minimum requirement for the lower density parts of the city[54]. It is expected that there is greater transit accessibility here than for more suburban retail locations. It is estimated that a property of this nature will command approximate $20 per square foot annually.[55]

Given general market conditions, an appropriate property level cost structure could be:

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owned) did indicate an interesting difference. In general, revenue-based elasticities were generally lower than then for the municipal lots. This could be evidence of rate-cutting to stay competitive (i.e., the private lots were more likely to pass only a portion of the tax increase along to patrons). Even though they covered the cost, the revenues for private owners did not suffer as greatly as for municipal lots were also higher elasticities for lots than for garages, which was assumed to be a result of the fact that the garages tended to be located in the city core.

[52] Comparisons with the San Francisco case are limited because (1) it was an ad valorum tax and this is a flat fee and (2) the rate increases in San Francisco were much larger than any under consideration in this case.

[53] Given that 1 space is required per 300 sq feet, the required amount would be around 53.

[54] No spaces required for first 4,000 square feet then 2 spaces per 1,000 square feet, which would total 24 in this case.

[55] Such an estimate is based on a review of current retail lease listings for the area and reference to the CB Richard Ellis figures, which report ranges for suburban Cook County in this approximate area.

Scheduled Gross Income:	$320,000
Vacancy Allowance:	($21,000)
Effective Gross Income:	$299,000
Maintenance:	($1,000)
Taxes:	($75,000)
Insurance:	($4,000)
Other Expenses:	($6,500)
Total Expenses:	($86,500)
Net Operating Income:	$212,500

Table 5.2.2-1: Urban Fringe Retail Property Cost Structure

An additional monthly parking fee expense of $3 per space (totaling $1,440 per year) would increase total expenses by 2% and cause net operating income to decline by -0.7%. The more aggressive parking fee levels would have the following impact:

Per Space Fee	Annual Parking Fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$4	($1,920)	$(88,420)	2.2%	$210,580	0.9%
$5	($2,400)	$(88,900)	2.8%	$210,100	1.1%
$6	($2,880)	$(89,380)	3.3%	$209,620	1.4%
$7	($3,360)	$(89,860)	3.9%	$209,140	1.6%
$8	($3,840)	$(90,340)	4.4%	$208,660	1.8%
$9	($4,320)	$(90,820)	5.0%	$208,180	2.0%

Table 5.2.2-2: Range of Impacts on Urban Fringe Retail (Property Level)

While the property does feel some impact from the parking fee, the magnitude is certainly not worth the cost of either hiring an additional employee or install equipment to collect fees directly from parking space users.

However, there are fewer administrative costs involved in passing the fee along through rental rate increases. If the facility owner chose to pass this fee along in the property rental rates, the following rent changes would occur (assuming that two tenants occupy the property):

Per Space Fee	New Rental Rate	Change in Rental Rate	New Annual Rent per tenant	Annual Rent Increase per Tenant
$3.00	$20.09	0.4%	$160,720	$720
$4.00	$20.12	0.6%	$160,960	$960
$5.00	$20.15	0.7%	$161,200	$1,200
$6.00	$20.18	0.9%	$161,440	$1,440
$7.00	$20.21	1.1%	$161,680	$1,680
$8.00	$20.24	1.2%	$161,920	$1,920
$9.00	$20.27	1.4%	$162,160	$2,160

Table 5.2.2-3: Potential Rental Increases for Urban Fringe

However this is assuming that the rent increases by the exact amount of the fee expense. However, as explained earlier in this chapter, market forces would probably result in a long-term rent increase that is a fraction of the actual fee. If the property owner absorbs a portion of the parking fee expense and only increases rents half as much, even lower rates would result.

If the fee were passed along to the tenant, would it have a significant impact the cost structure of the leaseholder? For a retail tenant that would want to pass at least a portion of this fee along, there are generally two options. It can either be passed along to employees (by paying slightly lower salaries) or passed along to customers (by increasing the cost of goods). For a relatively small retailer, the risk of alienating employees with even minor salary adjustments would not be worthwhile. While the retailer may also be hesitant to pass the cost along through the price of goods, it would have a lower per-person impact than if it was passed along to employees. However, it is highly unlikely that such a small rent increase would be perceived as cause for serious reconsideration of price levels. The presence of even modest levels of market competition would make retailer price absorption even more likely. A retailer located along the urban fringe conceivably faces competition from both suburban and urban retailers. If competitors within either of these two categories were not passing the tax along to customers, the urban fringe retailer would likely follow their lead.

Additionally, the potential choices faced by existing property owners is not just limited to (1) absorption of parking fee costs or (2) passing parking fees along to others. A minimization of the parking fee impacts could also occur through elimination of excess spaces. For instance, if the urban fringe retailer happened to be close to a transit stop or if the majority of customers and employees traveled by alternative means (car sharing, biking, walking from nearby developments, etc.), he may decide to convert a portion of his 40-car lot to other

uses (storage outbuilding, expansion of retail space, creation of outdoor garden for potential café tenant, etc).

Per Space Fee	Annual Parking Fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$3.00	($1,440)	$(87,940)	1.7%	$211,060	0.7%
$4.00	($1,920)	$(88,420)	2.2%	$210,580	0.9%
$5.00	($2,400)	$(88,900)	2.8%	$210,100	1.1%
$6.00	($2,880)	$(89,380)	3.3%	$209,620	1.4%
$7.00	($3,360)	$(89,860)	3.9%	$209,140	1.6%
$8.00	($3,840)	$(90,340)	4.4%	$208,660	1.8%
$9.00	($4,320)	$(90,820)	5.0%	$208,180	2.0%

Table 5.2.2-4: Urban Fringe Retail Property (Original 40 Spaces)

Per Space Fee	Annual Parking Fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$3.00	($720)	$(87,220)	0.8%	$211,780	0.3%
$4.00	($960)	$(87,460)	1.1%	$211,540	0.5%
$5.00	($1,200)	$(87,700)	1.4%	$211,300	0.6%
$6.00	($1,440)	$(87,940)	1.7%	$211,060	0.7%
$7.00	($1,680)	$(88,180)	1.9%	$210,820	0.8%
$8.00	($1,920)	$(88,420)	2.2%	$210,580	0.9%
$9.00	($2,160)	$(88,660)	2.5%	$210,340	1.0%

Table 5.2.2-5: Urban Fringe Retail Property (Reduction to 20 Spaces)

The change in operating income, and property value, may large enough to justify elimination of the excess spaces. The option may be even more attractive if the alternate use is sufficiently productive. For example, if the construction of additional retail space could mean that rent revenues are increased significantly. Of course, this will only be possible if the parking reductions are permitted under local minimum parking requirements. Fortunately, for the transit accessible parts of the City of Chicago, there will likely be more zoning flexibility. The regulations are often less accommodating elsewhere in the region.

Overall, the combination of:

adverse parking fee impacts on property values
+
alternative transportation access
+
potential for more productive uses of excess parking space
+
zoning regulations that allow for reduced parking ratios

could result in reductions of the existing parking stock. However, in the absence of alternative transportation access or zoning revisions, the property owner may be forced to either absorb the cost or pass it along.

5.2.3 Collar County Office Building

The following case illustrates the potential impact of the parking fee on a standard, multi-tenant office building in the collar counties. This particular property is less prestigious class office space (class B or lower), so annual rents are relatively low at $14 per square feet. It has three floors of office space, with one tenant typically on each separate floor. The average occupancy rate is around 90%.

While this office building could be located anywhere in the suburban collar counties, we will estimate parking requirements based on DuPage County zoning regulations.[56] Given this minimum requirement, there should be at least 142 spaces for this type of property. For the sake of this analysis, this number can be rounded upwards to 150.

Given the basic characteristics of a property of this type, the annual finance details are:

[56] Three & three-tenths (3.3) parking spaces each 1,000 square feet of gross floor area.

Total Leasable Square Feet	43,000
Projected Potential Gross Income (PGI)	$602,000
Vacancy allowance	$(60,200)
Expected Effective Gross Income	$541,800
Projected Operating Expenses	$(280,000)
Expected Net Operating Income	$261,800

Table 5.2.3-1: Collar County Office Building Cost Structure Without Parking Fee

Assuming that the $3 monthly rate is applied to each of the 150 parking spaces, the property-level situation will be altered in the following manner:

Total Leasable Square Feet (based on the building efficiency ratio times the gross area)	43,000
Projected Potential Gross Income(PGI)	$602,000
Vacancy allowance	$(60,200)
Expected Effective Gross Income	$541,800
Projected Operating Expenses	$(280,000)
Additional Parking Fee	$(5,400)
New Projected Operating Expenses	$(285,400)
Expected Net Operating Income	$256,400

Table 5.2.3-2: Collar County Office Building Cost Structure With $3 Parking Fee

In this particular case, the implementation of a $3 parking fee in the suburbs would result in a 1.9% increase in total operating expenses and a 2.1% decrease in overall net operating income. The more aggressive parking fee rates would have the following impacts:

Per Space Fee	Annual Parking Fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$3.00	($5,400)	$(285,400)	1.9%	$256,400	-2.1%
$4.00	($7,200)	$(287,200)	2.6%	$254,600	-2.8%
$5.00	($9,000)	$(289,000)	3.2%	$252,800	-3.4%
$6.00	($10,800)	$(290,800)	3.9%	$251,000	-4.1%
$7.00	($12,600)	$(292,600)	4.5%	$249,200	-4.8%
$8.00	($14,400)	$(294,400)	5.1%	$247,400	-5.5%
$9.00	($16,200)	$(296,200)	5.8%	$245,600	-6.2%

Table 5.2.3-3: Range of Parking Fee Impacts on Collar County Office (Property Level)

If the property owner decided to pass the new fee entirely along to leaseholders, the annual rents would change in the following manner:

Per Space Fee	New Rental Rate	Change in Rental Rate
$3.00	$14.14	1.0%
$4.00	$14.19	1.4%
$5.00	$14.23	1.6%
$6.00	$14.28	2.0%
$7.00	$14.33	2.4%
$8.00	$14.37	2.6%
$9.00	$14.42	3.0%

Table 5.2.3-4: Range of Parking Fee Impacts on Collar County Office (Rental Rates)

Again, the incremental costs to the property owner may be significant enough for him to consider passing it along. Certainly, any efforts to collect fees directly from parkers, again, would not be cost effective. In such a case, the property owner would have to set up a collection mechanism or paid parking pass system, both of which are likely to have much more than a $16,200 annual cost. On the other hand, passing along through rental increases could be a reasonable option since it could have little impact on the tenant's overall cost structure.

If the property owner did decide to pass the fee along to leaseholders in the form of rent increases, the cost increase for any of the individual companies would be minimal, even if the cost were passed in full. Assuming that each tenant occupies exactly a third of the building, the total changes experienced by each would be:

Per Space Fee	Change in Rental Rate	New Annual Rent per tenant	Annual Rent Increase
$3.00	1.0%	$202,673	$2,007
$4.00	1.4%	$203,390	$2,723
$5.00	1.6%	$203,963	$3,297
$6.00	2.0%	$204,680	$4,013
$7.00	2.4%	$205,397	$4,730
$8.00	2.6%	$205,970	$5,303
$9.00	3.0%	$206,687	$6,020

Table 5.2.3-5: Range of Parking Fee Impacts on Collar County Office (Annual Rents)

5.2.4 Suburban Retail Center

Now let's consider a typical retail center located a little farther out in a more suburban, auto-oriented setting. This property consists of an 80,000 square foot, single story structure located on approximately 8 acres of land. This provides enough room for two big-box style tenants for which a typical annual rent is $12 per square foot. It is assumed that the leases are long-term and the tenants are stable, so no vacancy allowance is required.

The minimum parking requirement for retail in DuPage County is five spaces per 1,000 square feet of floor area. Given this condition, the facility should have at least 400 spaces.

Total Leasable Square Feet	80,000
Expected Average Earnings	$960,000
Vacancy allowance	$-
Projected Potential Gross Income (PGI)	$960,000
Projected Operating Expenses	$(370,000)
Annual Parking Fee	$-
New Operating Expenses	$(370,000)
Expected Net Operating Income	590,000

Table 5.2.4-1: Collar County Retail Center Cost Structure with no Parking Fee

The implementation of a parking fee would have the following impact on this type of facility:

Total Leasable Square Feet (based on the building efficiency ratio times the gross area)	80,000
Expected Average Earnings	$960,000
Vacancy allowance	$-
Projected Potential Gross Income(PGI)	$960,000
Projected Operating Expenses	$(370,000)
Annual Parking Fee	$(14,400)
New Operating Expenses	$(384,400)
Expected Net Operating Income	575,600

Table 5.2.4-2: Collar County Retail Center Cost Structure with $3 Parking Fee

A monthly $3 per space charge would increase operating expenses from $370,000 per year to $384,400 per year. This would represent an increase in operating costs of just under 4% and a decrease in net operating income of approximately 2.4%. More aggressive parking fee policies would have the following impacts:

Per Space Fee	Total Annual Parking Fee	New Operating Expenses	Change in Operating Expenses	New Net Operating Income	Change in Net Operating Income
$3.00	($14,400)	$(384,400)	3.9%	$575,600	-2.4%
$4.00	($19,200)	$(389,200)	5.2%	$570,800	-3.3%
$5.00	($24,000)	$(394,000)	6.5%	$566,000	-4.1%
$6.00	($28,800)	$(398,800)	7.8%	$561,200	-4.9%
$7.00	($33,600)	$(403,600)	9.1%	$556,400	-5.7%
$8.00	($38,400)	$(408,400)	10.4%	$551,600	-6.5%
$9.00	($43,200)	$(413,200)	11.7%	$546,800	-7.3%

Table 5.2.4-3: Range of Parking Fee Impacts on Collar County Retail Center (Property Level)

As expected, the parking fee will have a slightly greater impact on existing properties in the more suburban areas. However, for most parking fee rates within the given range, the incremental change is still quite minimal.

If the property owner did decide to pass this cost along in the rent (which is already near the lower end of the range for this type of area), the increases would be:

Per Space Fee	New Rental Rate	Change in Rental Rate	New Annual Rent per tenant	Annual Rent Increase
$3.00	$12.18	1.5%	$487,200	$7,200
$4.00	$12.24	2.0%	$489,600	$9,600
$5.00	$12.30	2.5%	$492,000	$12,000
$6.00	$12.36	3.0%	$494,400	$14,400
$7.00	$12.42	3.5%	$496,800	$16,800
$8.00	$12.48	4.0%	$499,200	$19,200
$9.00	$12.54	4.5%	$501,600	$21,600

Table 5.2.4-4: Range of Parking Fee Impacts on Collar County Retail Center (Rents – Full Pass Along of Cost)

Clearly, the annual increase actually experienced by the tenant is rather minimal, even in the case that the full amount is passed along. In the more likely case that

the property owner absorbs a portion of the expense and rents increase by only half as much, the tenant level impact would be:

Per Space Fee	New Rental Rate	Change in Rental Rate	New Annual Rent per tenant	Annual Rent Increase
$3.00	$12.09	0.7%	$483,600	$3,600
$4.00	$12.12	1.0%	$484,800	$4,800
$5.00	$12.15	1.3%	$486,000	$6,000
$6.00	$12.18	1.5%	$487,200	$7,200
$7.00	$12.21	1.8%	$488,400	$8,400
$8.00	$12.24	2.0%	$489,600	$9,600
$9.00	$12.27	2.3%	$490,800	$10,800

Table 5.2.4-5: Range of Parking Fee Impacts on Collar County Retail Center (Rents – Partial Pass Along of Cost)

According to the Bureau of Labor Statistics, the mean annual salary for cashiers in the Chicago Metropolitan Area is approximately $17,000. (Bureau of Labor Statistics, 2004) [57] Consequently, from the perspective of the large retail tenant, all but the highest fee level (passed along in full) would have no more significance than the hiring of a single cashier. It is suspected that such a minimal amount would have zero impact on product price levels within the retail establishment.

Comparison With Potential Increase in Suburban Sales Tax

As discussed in Chapter 3, the revenue generation potential of the parking fee is of roughly the same magnitude as the proposed increases in collar county sales tax. Some parking fee critics claim that it is also comparable with the sale tax in that it would cause noticeable increases in the price of consumer goods. For instance,

"Imagine clothes, food, and other tchotchkes at your favorite suburban shopping mall costing a bit more down the road. Now, imagine that's because the mall has to pay an annual $10 tax on its parking spaces – a fee aimed at pumping cash into the Chicago area's mass transit system."
Schaumberg Village President, Al Larson, whose town is home to the Woodfield Shopping Center, an IKEA store, and countless strip malls, said a parking stall tax is one revenue source that should stay closed (Daily Herald, Dec 14, 2004)

Would the cost increases caused by the parking fee be as great as the increase caused by changes in the collar county sales tax ratios? From the perspective of the typical retail customer, how can the two revenue generation options actually compare?

Obviously, if the parking fee is absorbed entirely by the property owner, it is never passed along to the retail tenant and the tenant would have no cause to increase the price of goods. In such a case, customers experience zero cost impacts. If, however, the parking fee is passed along to the tenant, it has already been demonstrated that the marginal rent increase is likely to be minimal. In such a situation, the tenant may not perceive product price increases as necessary and, again, the customer experience is not altered. If the parking fee is passed down each level and actually appears in the cost of the good, the total customer-level impact would depend on the retailer's annual sales levels, the number of available parking spaces, and the parking fee rate.

The type of retail establishment fitting the characteristics for the Collar County Retail Case is likely to be a discount retailer, grocery store, or homegoods store. The range of potential annual sales for these types of establishments is quite large. For instance, a survey of comparable national retailers indicated:

Store	Sales per foot	Avg. square feet per store	Sales per Store
Big Lots	$105	27,141	$2,849,761
Stein Mart	$184	37,000	$5,741,000
Linens 'n Things	$171	34,801	$5,952,905
Haverty Furniture	$193	34,306	$6,579,056
Sports Authority	$164	43,238	$7,091,000
Bed Bath & Beyond	$229	36,129	$8,273,508
Safeway	$443	44,012	$19,337,034

Table 5.2.4-6: Typical Annual Sales for Suburban Retailer[58]

Based on these figures, it is reasonable to assuming an annual sales range of $2 million through $18 million. If the retailer distributes parking fee related costs evenly across all sales, for each dollar spent in the store, the prices would increase in the following manner:

[58] Source: www.bizstats.com, as referred by http://www.hdlcompanies.com/index.cfm?fuseaction=nav&navid=15

	Proposed Parking Fee Level			
Annual Sales	$3	$5	$7	$9
$2,000,000	$0.0036	$0.0060	$0.0084	$0.0108
$4,000,000	$0.0018	$0.0030	$0.0042	$0.0054
$6,000,000	$0.0012	$0.0020	$0.0028	$0.0036
$8,000,000	$0.0009	$0.0015	$0.0021	$0.0027
$10,000,000	$0.0007	$0.0012	$0.0017	$0.0022
$12,000,000	$0.0006	$0.0010	$0.0014	$0.0018
$14,000,000	$0.0005	$0.0009	$0.0012	$0.0015
$16,000,000	$0.0005	$0.0008	$0.0011	$0.0014
$18,000,000	$0.0004	$0.0007	$0.0009	$0.0012

Table 5.2.4-7: Range of Parking Fee Impacts on Retail Prices

For instance, a customer making what would ordinarily be a $20 purchase (not including sales tax) in a store that averages $8 million in annual sales would pay $.018 more to cover a $3 parking fee, $.030 more to cover a $5 parking fee, $.042 more to cover a $7 parking fee, and $.054 to cover a $9 parking fee. While this is an imperceptible customer expense, it is also a very unlikely scenario. The customer will only pay this full amount if both the property owner and the retail establishment refuse to absorb any of the costs. Even a minor absorption of the fee by the property owner, the leaseholder, or both would further reduce these values. It should be regarded as the very upper limit of potential parking fee impact on the average retail customer.

For the sake of comparison, let's examine the *guaranteed* impact on the consumer of a potential increase in the collar county sales tax. This impact is considered guaranteed because any increases in the sales tax will be applied directly to the consumer; the retail and property owner has absolutely no opportunity to absorb this added cost.

- If the collar county sales tax is increased from 0.25% to 0.50%, the customer will have to pay an additional $.0025 per dollar spent.

- If the collar county sales tax is increased from 0.25% to 0.75%, the customer will have to pay an additional $.0050 per dollar spent.

- If the collar county sales tax is increased from 0.25% to 1%, the customer will have to pay an additional $.0075 per dollar spent.

Based on these facts, the implications of sales tax increase for a standard $20 purchase are:

- If the collar county sales tax is increased from 0.25% to 0.50%, the customer will have to pay an additional $0.05 in taxes on a $20 purchase.

- If the collar county sales tax is increased from 0.25% to 0.75%, the customer will have to pay an additional $0.10 in taxes on a $20 purchase.

- If the collar county sales tax is increased from 0.25% to 1%, the customer will have to pay an additional $0.15 in taxes on a $20 purchase.

As a result, only the *highest* parking fee level (passed along *in full from property owner to retailer to consumer*) would result in a per dollar cost to the suburban customer comparable to the *lowest* proposed sales tax increase. In other words, a relatively large $9 per space fee would be needed to have the same consumer level impact as a low 0.25% increase in collar county sales tax rates. Of course, in terms of revenue generation, these two strategies are not comparable. Recall from Chapter 3 that the $9 per space fee would generate an estimated $432,000,000 annually and that a 0.25% increase in sales tax would only generate $128,746,000 annually. From the perspective of the suburban consumer, there is absolutely no question that the parking fee option is vastly superior.

5.3 Future Developers of Parking Facilities

In the case of the urban fringe retailer discussed above, we saw that it is possible that a combination of factors, only one of which is the parking fee, could affect the number of spaces constructed. Given the combination of:

adverse parking fee impacts on property values
+
alternative transportation access
+
potential for more productive uses of excess parking space
+
zoning regulations that allow for reduced parking ratios

a developer may decide to construct fewer parking spaces.

In fact, if service improvements are significant enough, it could have substantial positive impacts on property values. Illustrated below are two cases (inelastic and elastic property supply) in which the parking fee eventually results in greater accessibility (either through improved transit or reduced congestion), thus pushing the demand curve outward. As a result, both the price of property and the quantity is increases. In such a case, the market-wide prices and quantity are actually higher than they were prior to the parking fee. This market change could certainly influence development location decisions. Additionally, the congestion mitigation impacts of increased service levels could have a positive impact on property values throughout the region.

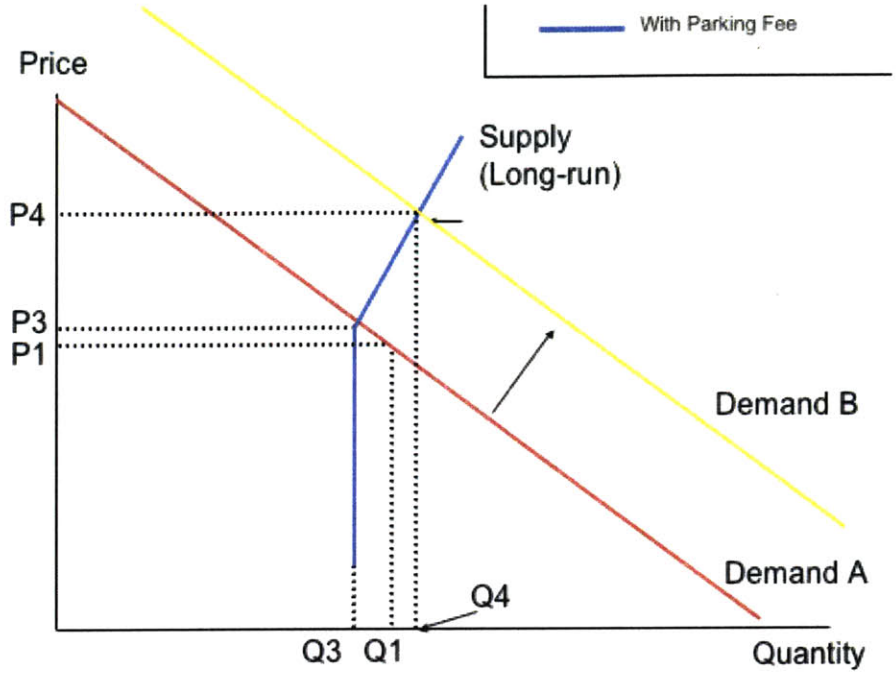

Figure 5.3.1: Impact of enhanced transit service when property supply is relatively inelastic

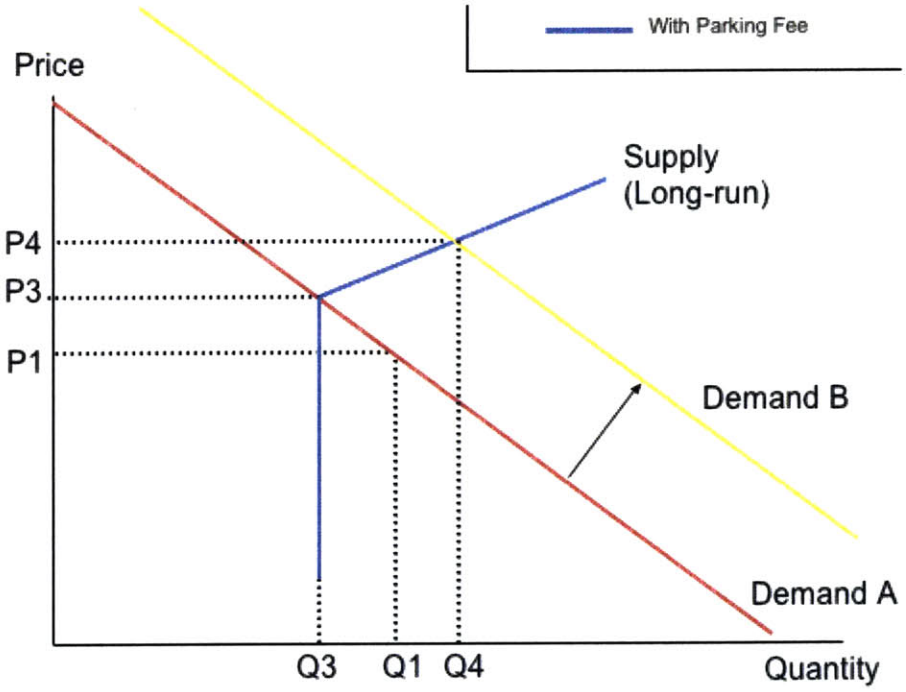

Figure 5.3.2: Impact of enhanced transit service when property supply is relatively elastic

5.4 Chapter Summary

While the statutory incidence of the parking fee is on the region's commercial property owners, it is theoretically possible that they will attempt to pass the expense along to tenants, customers, or employees. Given simple economic theory, a property owner that tries to pass the fee along would have to contend with reductions in market demand, and ultimately reductions in property values. However, a market response can occur only if the magnitude of the cost is great enough to impact behavior. Whereas the fee may be a significant burden for the property owner, it may be much less perceptible to the tenant if passed along in rental rates. While it is very rare that the fee will be passed directly from the property owner to the driver, it is possible that at least a portion will be passed along from property owner to tenant and from tenant to customer. In this case, by the time the fee reaches the tenant, it will be barely noticeable; in most cases it is even less noticeable than a 0.25% increases in sales tax.

6 Implementation Challenges & Strategies

By this point, we have succeeded in countering a number of major misconceptions (Chapter 4) and have demonstrated that the property level impact of a modest fee would be relatively minimal (Chapter 5). However, although necessary for eventual implementation of a parking fee policy, these conclusions are not sufficient. Before actual implementation can be achieved, it will be crucial to resolve a host of legal, political, and institutional complications.

6.1 Legal

6.1.1 Fee versus Tax

Throughout this thesis, the proposed policy has been referred to as a fee rather than as a tax. This is not just a matter of word choice; rather it is a recognition that a fee structure would be more advantageous from the perspective of the transit authority. On the most basic level, the word fee certainly has a less negative connotation than tax. Additionally, it is potentially more possible to apply a fee to all lots throughout the region, including facilities that would typically be exempt from taxes. After all, tax exempt organizations such as schools, hospitals, and churches place as great a burden on the regional transportation network as any commercial entity.

Of course, in order to call this strategy a fee, it is necessary that it possess the characteristics of a fee. In general, there need not be a direct logical connection between a specific taxed activity and the actual use of funds. A perfect case is the existing sales tax. There is no direct connection between the act of purchasing goods and the act of operating transit infrastructure, yet revenues from the former are used to finance the latter. In contrast, a fee requires a more direct connection.

Tax: it is not as necessary to rigorously prove that a relationship exists between the taxed good (parking) and the use of funds (transit operations finance). However, if the policy is called a tax, it will not apply to any entities categorized as "tax-exempt."

Fee: It is often legally necessary to prove that there is a linkage between the good on which the fee is paid (parking) and the use of funds (transit operations finance). Generally, a fee indicates that one is paying for the use of something. In turn, the fee revenues can be used to mitigate the impacts of usage, which in this case are high congestion levels and lack of adequate regional accessibility.

6.1.2 Relationship to Impact Fee

If this is called a fee, a number of legal issues may arise, particularly in how it may fit within the definition of an impact fee. An impact fee is typically designed to compensate for the externalities of new development. Similarly, the parking fee is intended to compensate for the incremental impact on the transportation system generated by each additional available parking space.

However, most impact fees are administered only once (at the time of development) and the funds are often used to support the additional capital needs of the system. The parking fee, on the other hand, would be an annual charge, with revenues going directly support transportation operating expenses. This makes sense: while the capital impacts of a development are generally isolated, one-time events (necessity for construction of wider roads, more roadway signage, enhanced drainage system, etc), the transportation operating burden created by additional parking spaces constitutes an on-going expense. (i.e., a parking space today will cause higher transportation operating costs for many years to come).

It would not be unexpected for this issue to be taken up by Chicago area impact fee opponents. Impact-fee related conflicts have been recorded by the media in Aurora, Oswego, Yorkville, Geneva, St. Charles, Batavia, Naperville, Montgomery, Somonauk, Fox Lake, Lisle, and Woodstock. (Baden & Coursey, 2002, p.2) While the majority of Chicago-area cases have focused on residential developments, there is nothing to prevent a coalition of commercial landowners from challenging the fee.

6.1.3 Legal Implications

In recent years, the constitutionality of impact fees has been challenged by landowners claiming that they are merely property takings in disguise. The two major court cases that established precedent for these claims are *Nollan v. California Coastal Commission* (1987) and *Dolan v. City of Tigard* (1994). *Nollan* found that the Fifth Amendment limits the ability of government to extract concessions from landowners only to situations where there is a "rational nexus" while *Dolan* specifies that there must also be "rough proportionality" and between land exaction and the developmental impact. (Breemer, 2002) Ultimately, there must be an *essential nexus* between the property exaction and the externality that funds are meant to mitigate.

"The rational nexus test has two requirements. First, the municipality must demonstrate the existence of a "reasonable connection between the need for facilities and the growth generated by the new development." Then, there must exist "a reasonable connection between the expenditure of the fees collected and

the benefits received by the development" that paid the fees." (Baden & Coursey, 2002, p. 4)

Lucas vs. South Carolina Coastal Council (1992) complements these cases by finding that any exaction that severely impairs the economic use of the property should also be considered a taking. ("there are good reasons for our frequently expressed belief that when the owner of real property has been called upon to sacrifice all economically beneficial uses in the name of the common good, that is, to leave his property economically idle, he has suffered a taking." [US Supreme Court opinion, Justice Scalia].) [59]

Although neither *Nollan* nor *Dolan* dealt specifically with exactions in monetary form (such as with impact fees), many impact fee disputes have referenced these two precedent-setting cases.[60] Some courts have found that monetary exactions are similar in nature to the land exactions examined in these two earlier decisions. However, in a number of other cases, *Nollan* and *Dolan* were found irrelevant if (1) monetary exactions, such as an impact fee, rather than land exactions are involved or (2) the exaction is part of "generally applicable" legislation, as opposed to a potential "plan of extortion" aimed at a specific landowner (defines difference between legislative and administrative exactions).

In other words, cases that fit into at least one of these categories have often not been subject to "essential nexus" and "rough proportionality" requirements.

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[59] As documented in:
http://www.law.georgetown.edu/gelpi/takings/courts/index.htm

[60] Some background cases:
Ehrlich v. City of Culver City (1996): "California Supreme Court clearly endorsed the applicability of *Nollan* and *Dolan* to monetary exactions" "It is the imposition of land-use conditions in individual cases, authorized by a permit scheme which by its nature allows for both the discretionary deployment of the police power and an enhanced potential for its abuse, that constitutes the sin qua non for application of the intermediate standard of scrutiny formulated by the court in *Nollan* and *Dolan*."
Krupp v. Breckenridge Sanitation District (2001): "There was no physical taking here. The PIF is not an exaction of land; rather it is a generally applicable service fee designed to defray the costs of expanding the wastewater treatment system directly caused by the new development. Because *Nollan*, *Dolan*, and their progeny applied heightened scrutiny only where the government demanded real property as a condition of development, we find that they are not applicable to a general development fee."
San Remo Hotel v. San Francisco (2002) : "In determining that the fee was subject to deferential review, rather than the essential nexus test, the court focused on the fact that the fee was imposed pursuant to a "generally applicable" city ordinance that required all residential hotels wishing to convert to tourist uses to build replacement units or pay an in-lieu fee sufficient to cover the cost of such units."

Fortunately, the proposed parking fee would actually fall into both categories. However, it is important to be aware that there have been some inconsistencies in court decisions regarding this matter. For instance, *J.C. Reeves Corp. v. Clackamus County* (1994) indicated that the *Nollan* and *Dolan* findings are indeed relevant in the case of "generally applicable" legislation that involves monetary exactions.

Furthermore, Breemer has argued that the exemption of monetary exactions from the essential nexus test runs counter to the spirit of the requirement. If it was intended to protect against undue shouldering of public burden, then it should apply to all types of property, including money. There are suggestions in related cases that the Supreme Court would consider "essential nexus" applicable to monetary exactions. It is also argued that the "generally applicable" legislation requirement should also be disregarded. From this perspective, broad legislation permitting exactions does not magically remove the "takings" label.

6.1.4 Illinois Specific Legislation

The O.L. Krughoff et al. v. City of Naperville case established that rational nexus was too general a term for Illinois courts and "specifically and uniquely attributable" was preferred. (Baden & Coursey, 2002, p. 5) However, this terminology clarification does not mean that impact fee related cases in Illinois are any more straightforward than they are elsewhere.

Given the level of disagreement that still exists regarding this matter, it should be assumed that any proposed parking fee could potentially be criticized on the basis of essential nexus (or, to use Illinois-specific terminology, "specifically and uniquely attributable"). Even if there is legal precedent for exemption from these requirements, it is not certain that this specific parking fee will be found exempt. This potential for litigation necessitates preemptive development of a solid essential nexus argument.

6.1.5 Potential Legal Argument: Externalities of Greenfield Commercial Development

One way to demonstrate essential nexus and rough proportionality is by showing that commercial parking facilities impose significant external impacts on society that are not covered by standard property taxes. Of potential use is a Chicago-based study that estimated the external costs of suburban firm relocation (Persky and Wiewel, 1996). When considering the costs of new development, the researchers distinguished between the typical public sector costs and the larger societal costs. While it was suggested that commercial development actually generate enough in property taxes to cover the public sector costs (typically operations and maintenance of public infrastructure), there is little accountability for the larger societal costs.

In general, firms that chose to locate in the collar counties rather than in Chicago or the inner suburbs (Cook County) encountered lower overall private costs. These include lower wages, land prices, construction costs, and taxes. These advantages create a demand for suburban space that benefits the suburban landowner through increases in property values. Yet the development of peripheral greenfield land for commercial use is found to impose significant additional social costs that would not be incurred in the case of more centrally located development of brownfield properties. These additional social costs include:

Potential Societal Costs	Low Estimate	High Estimate
Higher Congestion	$150	$500
Greater Auto Accident Incidence	$30	$45
More Air Pollution	$10	$650
Loss of Open Space	$2	$70
Increase in Housing Abandonment	$25	$300
Labor Market Spatial Mismatch	$300	$900
Totals	**$517**	**$2,465**

Table 6.1.5-1: Additional annual social costs imposed by each new suburban employee in the Chicago area, as compared with the per-employee costs of urban development (Persky & Wiewel, 1996)

Using these assumptions, it can be estimated that a 200-employee business that chooses to locate in outer Will County rather than locating within the City of Chicago would generate a minimum of $103,400 in additional annual costs to society. Currently, there is no way to hold the suburban business or landowner accountable for these costs.

	Cost Imposed on Society	
Employees	Average	Minimum
20	$29,820	$10,340
40	$59,640	$20,680
60	$89,460	$31,020
80	$119,280	$41,360
100	$149,100	$51,700
120	$178,920	$62,040
140	$208,740	$72,380
160	$238,560	$82,720
180	$268,380	$93,060
200	$298,200	$103,400
220	$328,020	$113,740
240	$357,840	$124,080
260	$387,660	$134,420
280	$417,480	$144,760
300	$447,300	$155,100
320	$477,120	$165,440
340	$506,940	$175,780
360	$536,760	$186,120
380	$566,580	$196,460
400	$596,400	$206,800

Table 6.1.5-2: Additional annual costs imposed on society by greenfield business location, based on number of employees.

Number of Parking Spaces	Annual Total Fees
20	$1,440
40	$2,880
60	$4,320
80	$5,760
100	$7,200
120	$8,640
140	$10,080
160	$11,520
180	$12,960
200	$14,400
220	$15,840
240	$17,280
260	$18,720
280	$20,160
300	$21,600
320	$23,040
340	$24,480
360	$25,920
380	$27,360
400	$28,800

Table 6.1.5-3: Annual Costs of Parking Fee, based on number of spaces provided

At this time, commercial property owners do not take these implications into consideration when calculating costs and benefits of greenfield development. A parking fee could begin to account for these. Appendices A and B show that, in most cases, the proposed parking fee only covers a portion of the annual low-estimate societal costs of greenfield development. The only cases in which the parking fee exceeds the cost to society are those with very extreme parking space to worker ratios.

Under the parking fee policy, property owners should understand that they are completely free to build parking facilities to potentially enhance property values.

As a result, they gain access to a free transportation network that delivers employees and customers directly to their doors. But with every space that they add and maintain on an annual basis, there are increasing societal costs. In order to mitigate these costs, increased transportation funding is needed. The fees will not go to roadway improvements because, historically, roadway expansion simply cannot keep up with the growing mobility demands of the region (Figure 6.1.1). If true impact mitigation is to be achieved, more financial support for public transportation or alternative mobility initiatives is the only feasible option.

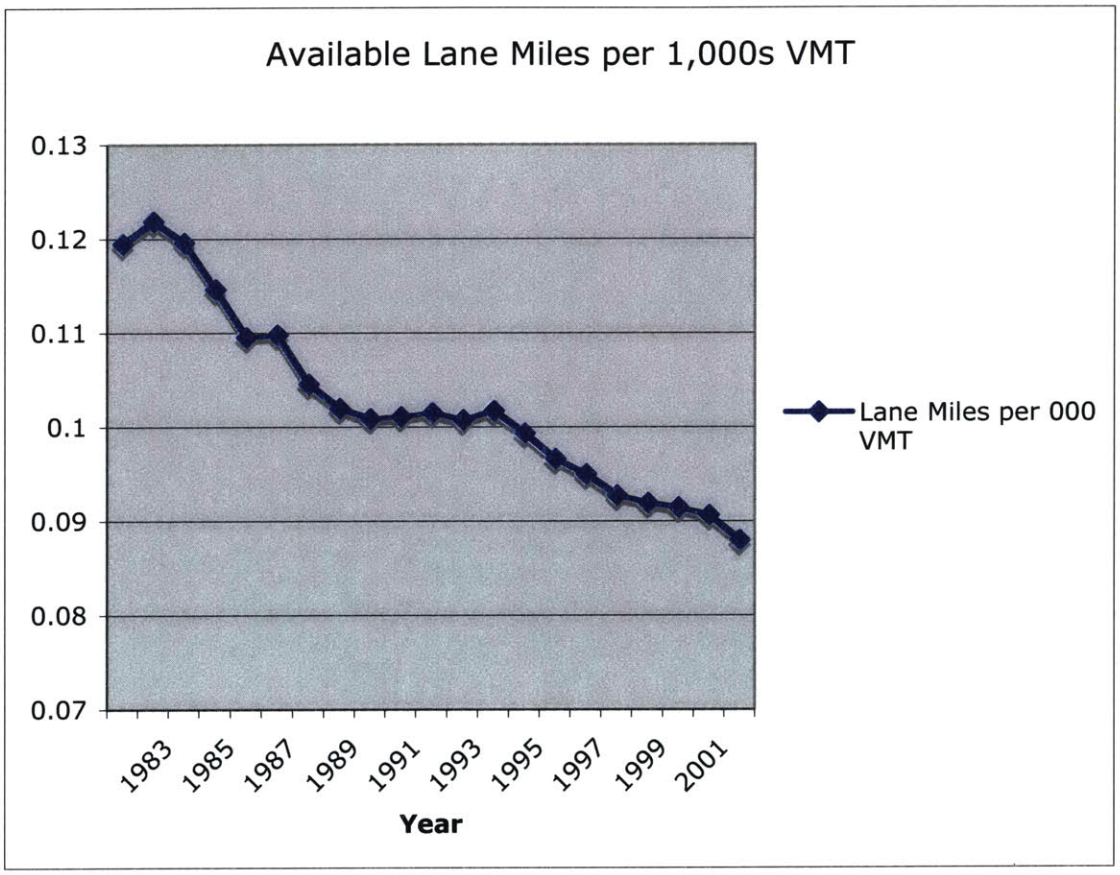

Figure 6.1.1: Comparison between Chicagoland available roadway capacity and vehicle miles traveled (TTI)

6.1.6 Vehicle Purchase Cost

An additional externality that was not considered in the Persky & Wiewel study is the cost of additional automobile purchases bourn by employees. Regardless of residential origin, employees commuting to workplaces in the

outer suburbs are more likely to drive to work alone than employees commuting to workplaces located closer to the urban core. Options such as transit, carpooling, biking, and walking are often simply not available for those that must reach relatively remote work locations. Such exclusive need of an automobile places a significant annual financial burden on the employee. According to 2000 Census data, the average share of commuters to the outer counties (Lake, DuPage, McHenry, Will, and Kane) that drive alone is approximately 80% and the share of commuters to the City of Chicago that drive alone is just under 50%.[61]

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[61] This is not meant to imply that 50% of commuters with city work destinations have absolutely no access to a private vehicle. Many of these workers may reside in a household with at least one car that is either used by other members for work commutes or shared for non-work purposes. However, the fact that 50% of city-bound commuters can reach their destinations without the aid of an automobile means that an additional vehicle *need not* be purchased specifically for this purpose. On the other hand, at least 80% of suburb-bound employees *must* have exclusive access to an automobile on a daily basis.

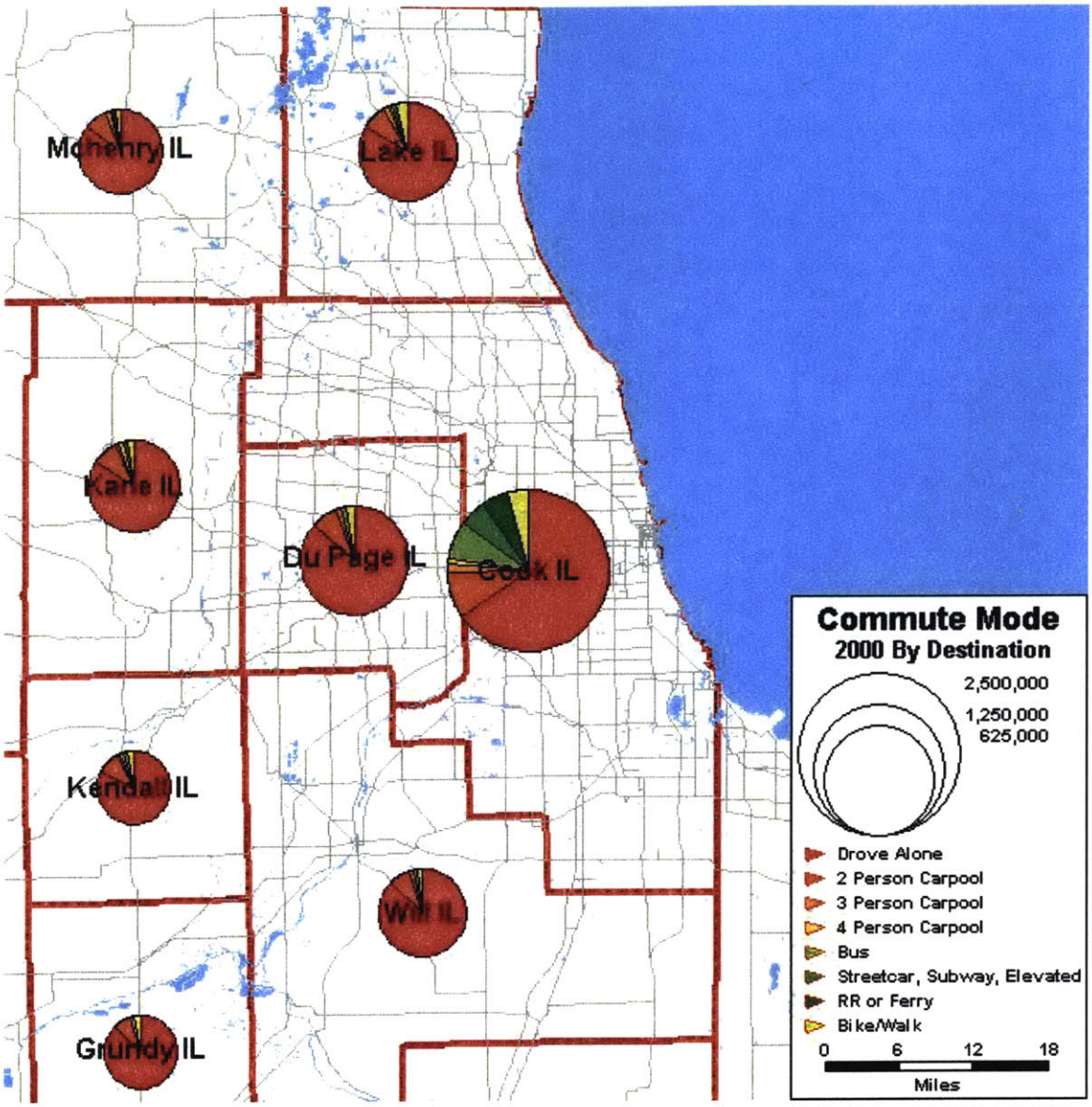

Figure 6.1.2: Commute mode split by county of destination (2000 US Census)

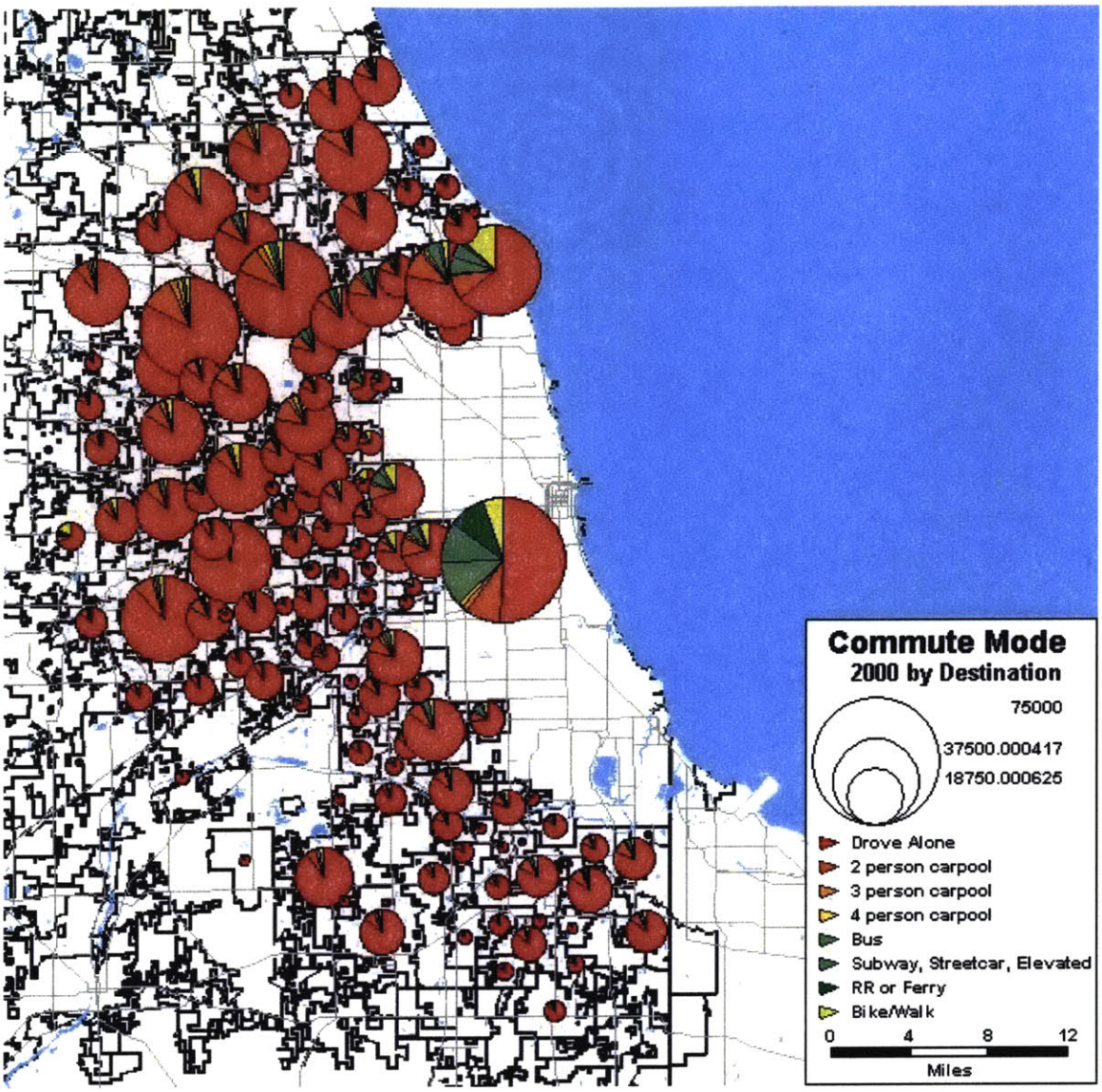

Figure 6.1.3: Commute mode split by town/city of destination (US Census, 2000)

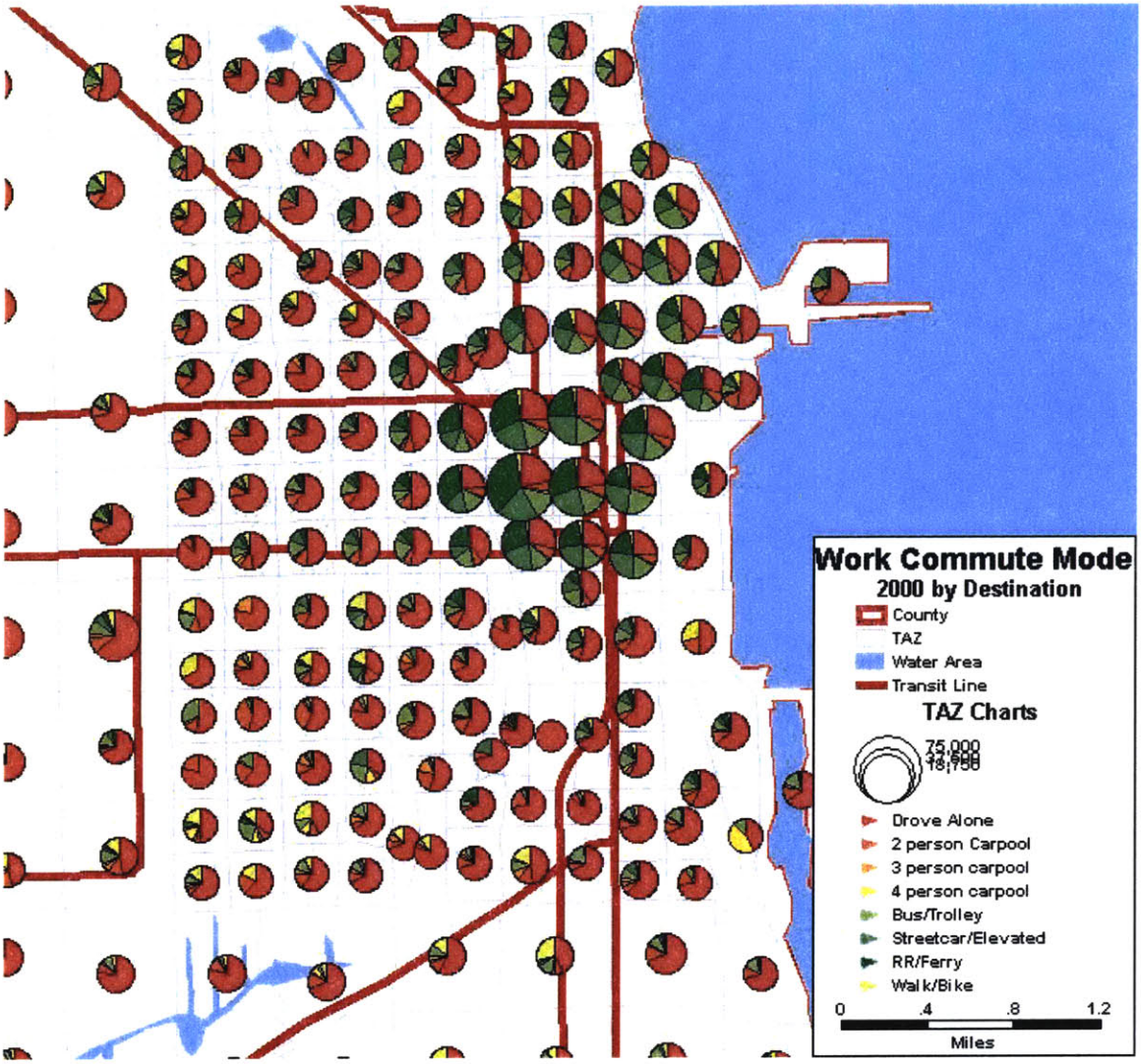

Figure 6.1.4: Commute mode split by transportation analysis zone of destination – Focus on Chicago's Loop Area (US Census, 2000)

According to the American Automobile Association (AAA), the average annual costs of owning a car in 2004 was $6,541. This figure accounts for gasoline, maintenance, insurance, registration, finance charges, and depreciation. Given that there is an 80% probability that a worker in the outer suburbs will face an annual car ownership cost of $6,541, the weighted cost per employee is approximately $5,253. Since the probability that a worker will drive alone to a job in the city is about 50%, the weighted per employee car ownership cost generated by urban business location is only $3,270. The difference between the two, $1,983, can be interpreted as a very rough estimate for annual per employee cost of suburban business location.

While this may not be the most accurate way to estimate the added employee cost of exclusive automobile ownership, it does raise some interesting issues. At least in this calculation, the extra cost of car ownership is actually larger than the

minimum estimate of all of the societal cost *combined* and about half that of the very upper estimate. In either case, the individual cost of needing a car for the work commute is substantial. How could a more accurate cost be calculated? Additionally, it is not clear whether this should be considered another externality or a form of consumer surplus. Given such lingering questions, the issue of car ownership should definitely be an area of future study (see section 7.4 for more Future Study issues).

6.2 Political

One of the most contentious issues will be how the parking tax revenue is distributed. It would be politically infeasible to earmark the entire revenue stream for CTA budget purposes. The following distribution options are worth consideration:

6.2.1 Use Existing RTA Formula

On the surface, the simplest option would be to direct all parking fee revenues into the larger RTA funding pool and distribute according to established sales tax formula guidelines. From Chapter 3, we know that the estimated shares of fee contributions are:

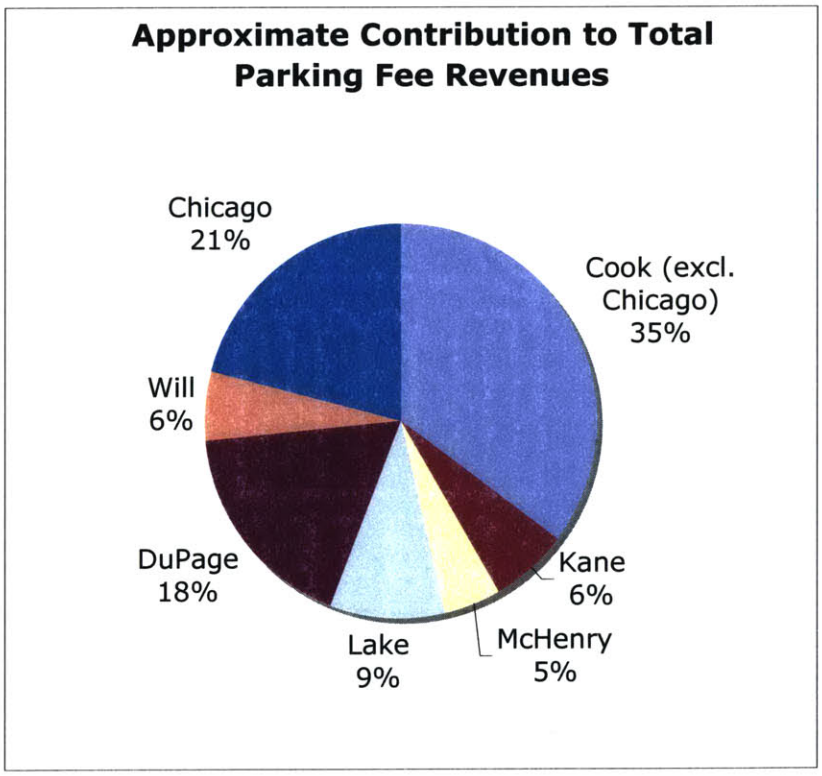

Figure 6.2.1: Share of parking fee contributions based on (CB Richard Ellis 2004, US Census 2000)

Recall that the distribution of the current RTA formula is:

	Chicago	Suburban Cook	Collar Counties
CTA	100%	30%	0%
METRA	0%	55%	70%
PACE	0%	15%	30%

Table 6.2.1-1: RTA distribution formula (RTA)

If a parking fee of $3 is imposed across the region and we assume that there are approximately 4 million eligible spaces, $144 million will be raised annually. Of this amount 85%, or $122.4 million, will be distributed by formula. The remainder will be distributed at the discretion of the RTA. The $122.4 million would be distributed in the following manner:

	Chicago	Suburban Cook	Collar	Total
CTA	$25,361,467	$12,976,073	$-	$38,337,541
Metra	$-	$23,789,468	$37,649,469	$61,438,936
Pace	$-	$6,488,037	$16,135,487	$22,623,523
				$122,400,000

Table 6.2.1-2: Approximate distribution of parking tax fees using existing formula ($3 rate)

In the case that a $6 parking fee is levied (resulting in an annual revenue stream of $288 million, of which $244.8 million is distributed according to formula), the following distributions can be expected:

	Chicago	Suburban Cook	Collar	Total
CTA	$50,722,935	$25,952,146	$-	$76,675,081
Metra	$-	$47,578,935	$75,298,937	$122,877,872
Pace	$-	$12,976,073	$32,270,973	$45,247,046
				$244,800,000

Table 6.2.1-3: Approximate distribution of parking tax fees using existing formula ($6 rate)

In the case that a $9 parking fee is levied (resulting in an annual revenue of $432 million, of which $367.2 million is distributed according to formula), the following distribution levels can be expected:

	Chicago	Suburban Cook	Collar	Total
CTA	$76,084,402	$38,928,220	$-	$115,012,622
Metra	$-	$71,368,403	$112,948,406	$184,316,809
Pace	$-	$19,464,110	$48,406,460	$67,870,570
				$367,200,000

Table 6.2.1-4: Approximate distribution of parking tax fees using existing formula ($9 rate)

In the case that the existing distribution formula is used, the parking fee will not be effective in solving the CTA's budget crisis unless the per-space rate is well beyond the upper portion of the proposed range. Thus, simply in terms of finding a solution to the existing budget challenges, this is not the ideal way to distribute the parking fee revenues. Additionally, continued reliance on the established formula would propagate the silo mentality and serve as a barrier to a regional perspective on congestion mitigation.

6.2.2 Alter Existing RTA Formula

Given the drawbacks discussed in Chapter 2, a revision of the 1983 formula would certainly make sense. Implementation of a new distribution formula was one of Kirschbaum's (2004) main recommendations and the CTA has been a vocal advocate. Additionally, the State's House Committee on Mass Transit, chaired by Representative Julie Hamos, recently produced a highly critical analysis of the funding formula and called for a region-wide effort to remedy structural flaws. (House Committee on Mass Transit, 2005)

However, there remains a great deal of political opposition to all reallocation strategies. Specifically, Metra contends that a reformulation would benefit urban service at the expense of suburban service. The battle lines have been clearly drawn and there is no indication that Metra will relent on this issue, at least in the near future. If the goal is to implement the parking fee as soon as possible, it would be risky to condition it upon a massive overhaul of the RTA distribution formula.

6.2.3 Use New Criteria for Distribution of New Revenue Streams

Alternatively, the new funding stream could be distributed entirely based on other measures. Some potential measures include annual ridership, annual vehicle revenue miles, and annual vehicle revenue hours (also annual passenger miles?) This could be an opportunity to establish an official formula component that is based on actual service need; those agencies that provide more service will receive a greater share of the funding.

	Ridership (annual unlinked trips)	% of Total	Annual Vehicle Revenue Hours	% of Total
METRA	57,726,987	10%	1,220,638	8%
PACE	38,758,583	7%	2,206,934	15%
CTA	474,742,925	83%	11,248,586	77%
Total	571,228,495	100%	14,676,158	100%

Table 6.2.1-5: 2003 Annual Ridership and Vehicle Revenue Hours for RTA's Three Service Boards (APTA)

Based on these potential measures, the three agencies would receive the following shares of expected revenue streams for the $3/space rate and the $6/space rate:

	Share based on Ridership	% of Total	Share based on Vehicle Revenue Hours	% of Total
METRA	$14.6	10%	$12.0	8%
PACE	$9.8	7%	$21.7	15%
CTA	$119.7	83%	$110.4	77%
Total	$144.0	100%	$144.0	100%

Table 6.2.1-6: Shares of parking revenues if distributed according to performance measures, based on $3 monthly per-space rate

	Share based on Ridership	% of Total	Share based on Vehicle Revenue Hours	% of Total
METRA	$29.1	10%	$24.0	8%
PACE	$19.5	7%	$43.3	15%
CTA	$239.4	83%	$220.7	77%
Total	$288.0	100%	$288.0	100%

Table 6.2.1-7: Shares of parking revenue if distributed according to performance measures, based on $6 monthly per-space rate

	Share based on Ridership	% of Total	Share based on Vehicle Revenue Hours	% of Total
METRA	$43.7	10%	$35.9	8%
PACE	$29.3	7%	$65.0	15%
CTA	$359.0	83%	$331.1	77%
Total	$432.0	100%	$432.0	100%

Table 6.2.1-8: Shares of parking revenues if distributed according to performance measures, based on $9 monthly per-space rate

Even if this type of formula is used to distribute the majority of parking fee revenues, a percentage of the funding can also be set aside for special performance improvements incentives. Individual service boards could receive additional funding if they meet benchmarks or demonstrate improvements in such areas as:

- Reliability (both in terms of on-time performance and low equipment breakdown rates)
- Safety
- Customer satisfaction
- Employee satisfaction/retention

(Transit Research Board, 2004)

For instance, assume that the parking fee is $6, achieving an expected annual revenue generation of $288 million. Of this $288 million, 85% will be distributed according to annual ridership levels. For the sake of analysis, ridership levels for 2003 will be used. The remaining 15% could then be used to reward actual increases in ridership levels from the previous year.

A potential variation on this approach is to use a portion of the total revenues for special regional mobility projects implemented by specific municipalities or counties. This could be a way to further build regional support for the parking fee. Ideally, these smaller projects would complement existing transit services and enable less dependence on automobiles throughout the region. Biking/walking paths, station upgrades, park & ride lots[62], HOV lanes, priority sign utilization, and street calming projects would all fall within this category.

There are a number of ways to structure a revenue sharing program. On one end of the spectrum, the RTA could manage the mobility projects directly, resulting in strong control over every aspect. On the other end of the spectrum, the money could be given directly to the municipality, granting local officials complete control over project selection and implementation. Some variations in the middle would

include special qualification restrictions for projects (for example, a new roadway lane would not qualify as a general mobility project and some transit authority oversight of project implementation (perhaps in the case that local jurisdictions lack the capacity to efficiently implement larger construction projects).

Somewhere between the two extremes is the case of the Houston Transit Tax. Houston METRO receives dedicated funding from a regional 1% sales tax, 25% of which is used for general mobility projects throughout Houston, Harris County, and 14 enclave cities. While METRO does have a role in the implementation, the recipient entities appear to enjoy a high level of freedom in the selection of projects.

A number of distribution schemes could be employed. First, the percentage of revenues dedicated to regional mobility projects would have to be determined Clearly, there must be a balance between the needs of transit operations and the counties. If too large a percentage of revenues is dedicated to mobility projects, the primary goal of sustainable transit operations may not be met. However, there will be few political advantages if the annual amounts promised to the municipalities/counties are regarded as insignificant.

Fee Rate	Total Revenues	5%	10%	25%
$3.00	$144,000,000	$7,200,000	$14,400,000	$36,000,000
$4.00	$192,000,000	$9,600,000	$19,200,000	$48,000,000
$5.00	$240,000,000	$12,000,000	$24,000,000	$60,000,000
$6.00	$288,000,000	$14,400,000	$28,800,000	$72,000,000
$7.00	$336,000,000	$16,800,000	$33,600,000	$84,000,000
$8.00	$384,000,000	$19,200,000	$38,400,000	$96,000,000
$9.00	$432,000,000	$21,600,000	$43,200,000	$108,000,000

Table 6.2.1-9: Potential parking fee amounts to be reserved for performance improvements and/or regional mobility projects

Once the total percentage has been determined, a method of regional distribution is needed. Funds could be distributed based on:

- The number of transit trips originating in the municipality/county during the previous year
- The VMT-reduction potential of proposed projects (as determined by the transit authority)
- The VMT-reduction successes of projects implemented during previous years

- The municipality's efforts to establish more transit-friendly zoning and a comprehensive plan to coordinate pedestrian, bicycle, and transit amenities

6.3 Institutional

6.3.1 RTA Responsibilities & Structure

With the creation of an additional funding source and a new focus on service performance measures, there must be formal alternations to the RTA's purpose, goals, and procedures. These changes should be clearly outlined in amendments to the RTA Act. Major attention should be paid to the following issues:

First, there is the danger that the prospect of even higher revenues will make the RTA board an unintentional advocate of parking lot expansion. Clearly, an increase in parking supply runs counter to the mobility goals of the region. In order to prevent this from happening, the RTA must be responsible for more than just the regional transit revenues; it must also bear responsibility for regional mobility levels. The RTA would be required to produce annual reports on the region's mobility characteristics. This could be based on some of the measures employed by the TTI, but would ideally analyze conditions on a more detailed level. Of particular importance would be a critical look at the mobility impacts of funding level increases. It is assumed that more funding will lead to enhanced service levels, which in turn should have a positive impact on ridership levels. An indirect effect could be reductions in congestion and other automobile-related externalities. However, these outcomes should not be taken for granted. Each year, the RTA must examine changes in key regional performance measures and determine whether progress is actually occurring. If the RTA is held accountable for annual mobility improvements, it is very unlikely that it will look favorably upon parking lot expansion.

However, funding needs will not remain at current levels forever and it is expected that the RTA will eventually seek parking fee revenue increases. Since expansion of the parking supply would conflict with one of its fundamental responsibilities, the board must have the power to increase fee rates. In keeping with the "regional mobility" logic of the parking fee initiative, such increases should be conditional upon evidence of performance improvements. If the annual reports demonstrate that higher funding levels are having a significant positive impact, then rates can be increased accordingly.

Ultimately, the RTA's new responsibilities and focus could make the approach to board composition seem very outdated. The population-based allocation of board positions may have made sense under the original structure, but would not adequately reflect the revised purpose of the RTA. An appropriate revision of the

board composition would take at least make some consideration of service provision and ridership levels.

6.3.2 Cost of Implementation

It is important to keep the implementation costs as low as possible so that the largest possible percentage of parking fee revenues actually reach the operations budget. If this is an excessively expensive program to implement, it becomes less desirable than other revenue sources such as the collar county sales tax increase.

Fortunately, the Perth case offers some potential strategies. At the very beginning of the program, it was the responsibility of all property owners in the target area to obtain a parking license, which carried an annual fee of $70 AU (approximately $52 USD at current exchange rates). Some properties did qualify for exemptions, but everyone still hade to get the license. (Brown, 2001) The reporting responsibility is entirely that of the facility owner. Before full implementation, Perth invested in the distribution of comprehensive educational materials to all eligible property owners. It was made clear that a failure to obtain the license, if discovered by officials, would result in significant penalties. A modest upfront investment could mean that less is spent on enforcement later on. The implementing agency could avoid exhaustive parking space surveys in which every eligible lot must be officially counted. Instead, they only require resources to process annual license applications and to conduct regular spot-checks of facilities. However in order for this system to work in Perth, parking tax officials had to be granted the authority to enter and inspect property.

Perth's program has an added layer of complexity because it permits facility owners to only pay taxes on spaces that are currently in use. Since the Chicago program would most likely require a fee on all spaces regardless of use status, implementation should be simpler and slightly less costly than Perth's.

An additional benefit of the "license for everyone" system is the ability to gather complete data on parking demand locations. A detailed, up-to-date database of all potential parking locations throughout the metropolitan area is likely to be quite valuable for broader transportation planning purposes.

One of the more common criticisms of the existing City & Cook County parking taxes is that the reporting procedures are overly complex. Rather than simply reporting annual revenues, facility operators must submit detailed accounts of transaction types. There is a great deal of confusion and some evidence that operators often end up paying incorrect tax amounts. (Berk & Associates, 2002) By simply requiring facility owners to submit an annual update of parking supply, the process is streamlined significantly.

6.4 Chapter Summary

The RTA must be prepared to address major legal, political, and institutional challenges.

In the case that the fee is challenged as a form of property taking, it may be necessary to provide evidence of essential nexus and rough proportionality. One way to show this is by comparing the modest fee rates with rough estimates of societal costs imposed by greenfield commercial developments.

When determining the procedure for distributing fee revenues, the RTA must favor approaches that actually recognize the importance of regional mobility. Absolute levels of ridership or vehicle hours could serve as the basis for the parking fee distribution formula, with some funding set aside to reward specific service improvements. A portion of the funding could also be reserved for special mobility projects throughout the region, thus creating incentives for counties and municipalities to pursue alternative transportation initiatives.

With this new focus on mobility measures, the RTA's responsibilities will change. The RTA will be in charge of producing regional mobility reports on at least an annual basis. Of particular interest should be the impact of increased funding on performance. If is found that higher funding levels are resulting in significant improvements, the RTA can exercise its power to increase fee rates. Detailed guidelines for this new accountability should be incorporated as amendments to the RTA statute.

Finally, it is important that the implementation of the fee be as easy and inexpensive as possible, both for the RTA and the property owners. While the owners will be expected to report parking supply levels, they will not be required to submit complicated records of revenue or usage.

7 Conclusion

7.1 Summary of Ideas

From a regional mobility perspective, Chicagoland is in serious trouble. While, on the surface, it seems as though the transportation crisis is limited both temporally (to the 2005 fiscal year) and geographically (to the CTA service area), there have been regional problems for over twenty years. Chicagoland has gone from having the seventh worst congestion delays in the nation to having the second worst. For twenty years, the region has endured transit budget crises, fare hikes, service cuts, and steady increases in congestion without once reconsidering its approach to public transportation finance. As Federal subsidies were eliminated, ridership declined, paratransit costs escalated, and capital funding responsibilities shifted, the RTA never initiated a critical re-evaluation of its own role. An inappropriate funding distribution process and chronic budget shortfalls left the transit system poorly equipped to meet the region's mobility needs, yet no effective solutions were even identified. The consequences of this inaction are evident. In 2003 alone, congestion cost the region $4.27 million. Although an impressive $1.6 million in additional congestion costs were mitigated by transit operations, at a relatively low public cost of $907 million, there have been no coordinated efforts to determine the potential benefits of higher funding levels.

Now, as the region faces a particularly severe budget crisis, it is time to finally begin the discussion that should have commenced two decades ago. The region must alter its approach to transit finance and an additional funding source must be immediately identified. The implementation of a region-wide, non-residential parking fee could help achieve both of these goals. When considering the potential of such a strategy, there are a several key components:

7.1.1 Reframe transit as a regional concern

While the current budget crisis is often perceived as specific to the CTA, any reduction in urban transit service provision is a threat to the entire metropolitan region. The dividing line between "urban" and "suburban" interests is becoming increasingly blurred and intraregional feuds simply serve as distractions from the real issues. The economic health and global competitiveness of the entire region are ultimately at stake. Rather than battling over scarce resources, it must be realized that a greater focus on regional mobility will benefit everyone. While stakeholders from varied parts of the region may feel as if they have nothing in common, a unified approach can easily be based on the fact that congestion affects everyone in some way.

7.1.2 Identify the most appropriate strategy

The flaws of the existing finance structure certainly present a potential opportunity for change. Specifically, increases in the collar county sales tax and a restructuring of the RTA distribution formula are reasonable goals. However, the

CTA has repeatedly tried to bring this idea to the table and each time it has met with tremendous regional opposition. Given the urgency of the budget situation, proponents of sales tax restructuring have to start asking themselves if this is a winnable battle or if resources should be used in the pursuit other solutions. By spending so much energy emphasizing the drawbacks of the existing tax structure, they may perhaps be creating more enemies than allies. Assuming that progress on the current issues is stalled, it is crucial to identify a less controversial plan. A modest, regional, non-residential parking fee would have a number of advantages over the sales tax proposal:

- Potentially more feasible from a political standpoint
- Substantial revenue generation potential
- Applied uniformly across Chicagoland, thus encouraging a more regional mentality
- Incidence not directly on the general population
- Logical nexus to congestion externalities
- Potential for funding growth if transit service improvements can be demonstrated
-

7.1.3 Anticipate and Counter Basic Misperceptions

It is likely that such an innovative strategy will incite speculation regarding potential impacts. Anticipating major misperceptions and addressing them from the beginning can diffuse a great deal of potential opposition. The major clarifications include:

- Beliefs that the parking fee will either be imposed exclusively on the collar counties or will have a disproportionate impact on these outer areas are exaggerated. In reality, an appropriate fee will be implemented uniformly across the region and will have a much lower impact on the collar counties than the sales tax increase alternative.

- A parking fee of this nature will not force economic activity to locate elsewhere. First, many advantages specific to certain central locations will far outweigh the costs of the parking fee. Additionally, assuming that the fee revenues will be used to improve the regional transportation network, business activity will ultimately benefit. In fact, it is possible that a very successful transportation finance initiative could attract even more business activity to the region, particularly in areas with enhanced transit-accessibility. Finally, the large size of the implementation area guarantees that businesses would have to move a tremendous distance (well beyond the Chicagoland market) to avoid the parking fee. The consequences of such a move are unlikely to be worthwhile.

- Parking fee revenues are intended to support high-quality transit service, which in turn should help mitigate regional congestion. Some would contend that congestion could be affected more directly if revenues were

used to support highway projects. However, roadway expansion is not a reasonable alternative use for the revenues. Increased funding is not enough to ensure that roadway construction keeps pace with the region's rising traffic levels. Furthermore, exclusive expansion of roadway infrastructure reinforces the auto-dependency of the region, resulting in even fewer travel choices for many of its residents. In the long run, capacity expansion has an induced travel response, resulting in congestion levels either equivalent or higher than before. When roads and transit are viewed as part of a larger transportation network, unbalanced investment in the roadway component ultimately has costly consequences for *all* parts of the network (both roadway and transit). Of course, this does not mean that the parking fee revenues must be used exclusively for transit operations. A portion can also be reserved for special mobility initiatives throughout the region that help to support alternative transportation options.

- The parking fee should not be regarded as a means to directly alter travel demand. Even in the very unlikely case that it is passed along to the driver, the fee level will not be high enough to influence behavior. Rather, this particular fee is primarily intended to provide funding for adequate and sustainable transit options throughout the region. More aggressive strategies would be both unpopular and ineffective if implemented before the finance crisis is fully resolved. Ample and reliable transportation alternatives must be firmly in place before undertaking any major travel demand management efforts.

7.1.4 Understand the Actual Impacts: Incidence & Magnitude

Since the fee will be imposed directly on commercial real estate property, landowners are likely to be one of the most vocal stakeholder groups. In order to identify and counter inaccurate opposition claims, the RTA must have a thorough understanding of the fee's incidence and magnitude. The parking fee will have a variety of expected impacts depending on different property level conditions.

For instance, a commercial parking facility will likely perceive the additional fee as a significant financial threat, especially if it must absorb the majority of the cost. However, given the very small size of the fee in comparison with (1) the high value of access provided by parking and (2) the large expense of the existing tax, the fee would have a relatively modest impact on overall parking rates.

However, such a direct shift of costs to the driver is less likely in the case of an office or retail property. If the property owner finds it necessary to pass the costs along, it must first be passed through the property tenant, generally in the form of increased rents. Since the rent is only a portion of the tenant's overall financial structure, the small increase should be relatively insignificant. In the unlikely

event that fee-related costs eventually reach retail customers, they will generally be lower than the costs incurred through even the most minimal sales tax increases.

7.1.5 Prepare Logistical Strategies

Legal: The RTA must recognize that there may be legal challenges to implementation, especially with a funding approach that has no precedent in the US context. It is possible that opponents will try to characterize the fee as an unconstitutional taking of property. In such a case, it will be the RTA's responsibility to prove that the fee has rational nexus and rough proportionality with the externalities of auto-dependent development. A potential method is to demonstrate that commercial properties requiring greater drive-access impose much larger societal costs. Given this argument, it is reasonable to establish a mechanism through which real estate owners can at least partially pay for these annual impacts on society. Furthermore, most of the proposed parking fee levels are so low that they are equivalent to only a fraction of the estimated social costs, thus satisfying any rough proportionality requirements.

Political:
Determining the method by which the new funds are distributed will be a highly controversial process. The existing distribution procedure ignores the importance of regional mobility measures and, if used for all funding, would not solve the budget crisis. However, *at this time*, advocating complete revision of the existing RTA formula may exacerbate regional tensions. The parking fee may never be implemented if it is conditional upon formula revision.

An acceptable compromise may be to retain the existing RTA formula for sales tax distribution and to develop a separate procedure for the new parking fee revenue stream. If the majority of parking fee revenues was distributed based on annual performance measurements (such as ridership or vehicle hours) there would be a direct connection between funding levels and service levels. A portion of the annual funding could also be reserved as an incentive for demonstrated services improvements over previous years. Alternatively, a portion of the funding could be reserved for special mobility enhancement projects throughout the region. Qualifying initiatives need not be directly related to transit, but should be designed to support non-auto-based travel. Such a direct stake in the new funding source could attract support from parts of the region with significantly less transit-accessibility.

To guarantee stability during this time of transition, it will be important to ensure that all service boards receive at least as much as they have received in previous years. While the existing funding process is not ideal, simultaneous changes in the distribution formula may not be immediately achievable. Rather, it will be would be wise to establish a brief trial period for the merit-based process. Once there is a full understanding of how this will impact specific funding levels,

additional steps can be taken. Both a timeline and exact procedures for this staged implementation effort should be clearly outlined in an RTA amendment.

Institutional:
Assuming that the RTA administers the parking fee using a more merit-based distribution formula, certain institutional changes will be necessary. The RTA should be held responsible for regional mobility performance. Whereas the RTA has previously had little interest in each service board's actual service levels, the new distribution approach would require greater accountability. Amendments to the RTA's governing statute will be necessary to reflect this added concern for regional improvements. Each year, the RTA should be expected to produce a progress report outlining how increased funding levels have actually impacted service quality.

Ultimately, this new concern with performance could be a valid reason to update other aspects of the RTA's administrative structure, including the composition of the board. If the official aim of the RTA were to foster greater mobility throughout the region, then it would make greater sense for board composition to be based on ridership levels as well as population.

In order to build support for the parking fee initiative, the mechanics of implementation should be as simple and inexpensive as possible. By requiring property owners to submit simple annual parking supply updates, the administrative costs can be kept to a minimum.

7.2 Regional Momentum: Beyond the First Steps

A regional parking fee is a very realistic funding option for the RTA given its current political environment and immediate budget needs. It is a relatively modest initiative that would have numerous long-run benefits for the region. However, this does not mean that efforts to remedy existing structural flaws should be completely abandoned. As long as intraregional tensions remain high, any major restructurings will surely be met with passionate opposition. However, the implementation of a uniform, modest parking fee across the region could have the following impacts:

- Create a larger, more secure funding stream for all transit stakeholders, thus reducing the sense that everyone is fighting for the same dollar
- Establish a distribution mechanism that is not governed by the divisive silo mentality

It is possible that a more secure funding environment could foster greater willingness to cooperate on previously controversial matters. The parking fee should not be viewed as a replacement for more ambitious, long-term goals. Rather, it can set the stage for greater levels of regional cooperation.

If the parking fee achieves its initial goals of (1) creating a larger revenue stream and (2) fostering a more regional mentality with regards to transit, this does not mean complete resolution of Chicagoland's transportation challenges. While alternative transport choices will be secured, there is no guarantee that previous ridership loss can be completely reversed. While the parking fee will stabilize transit finances, thus ensuring that existing transport alternatives are sustained, much more will be needed to actually reverse decades of transit decline.

Fortunately, the region will be in better position to attempt more innovative measures. As discussed earlier, London's congestion charging policy was largely successful because travelers had feasible transport alternatives. The long-term combination of ample regional transportation options and real estate development that is less oriented around automobile access could substantially improve Chicagoland's congestion. However, this will require a sustained commitment to steady increases in service performance, which will require future increases in the parking fee.

7.3 Applicability to Other Transit Properties

Although it is a perfect solution for Chicagoland's current challenges, a similar finance strategy can also be appropriate in a variety of different settings. Many transit properties throughout the country could benefit from such a relatively secure cash flow and should consider it as an alternative to more traditional funding options. A parking fee initiative will have a greater likelihood of success if:

- **The need for additional sources of dedicated funding is widely recognized.** It is much more difficult to build public support for a fee if few actually believe that the region could benefit from transit budget increases.

- **Transit services are provided to a relatively large regional area.** Although this is not necessary, an extensive implementation area will mean that significant revenues can be generated even if per space fees are kept at a minimal level.

- **Highly visible, positive changes in service (in terms of both quality and quantity) can be achieved within a relatively short time span**. The CTA's situation is unique (and certainly not enviable) in that severe service cuts are guaranteed if additional funding is not immediately identified. The specifics of this option have been widely publicized throughout the region. If the parking fee successfully eliminates the need for such unpopular service changes, it will be easy for the public to perceive the connection between costs (the parking fee) and benefits (the continuation of fundamental transit services). On the other hand, an agency that is in a less desperate situation must be prepared to prove that

the implementation of a parking fee will yield perceptible benefits. This could be in the form of significant service improvements such as more frequent vehicle headways or extended operating hours. It could also come in the form of lower fares, an extreme example of which was Perth's elimination of all fares in the Central Business District.

A regional parking fee could be appropriate in the following cases:

7.3.1 Massachusetts Bay Transportation Authority (MBTA)

The MBTA, the provider of transit service for the Greater Boston Area, is currently in search of ways to reduce a $10 million funding deficit. In addition to common strategies such as fare increases and service reductions, it has also considered less traditional options such as the installation of closed-circuit televisions on rail vehicles (intended to generate advertising revenue). (Daniel, 2005) Persistent budget shortfalls are largely caused by its massive debt burden, which is the highest in the country. Currently, the real impediments to expansion are constraints on operations funding. The stable revenues from a parking fee could enable the MBTA to enhance its service provision while still managing to cover the expenses of operations and maintenance.

7.3.2 Transport for London (TfL)

Transport for London is the manager of both transit and roadway infrastructure throughout the London area. In early 2003, it implemented a congestion mitigation scheme that essentially charges a fee for all vehicles entering central London. After two years of implementation, congestion levels in the target zone are 30% lower than pre-charge levels (TfL press release, February 18, 2005). While this was a primary goal of the policy, TfL had also expected that the charge would generate approximately £130 million (approximately $239 million USD) in annual revenues. However, the unexpectedly high cost of collecting the fees meant that net revenues are lower. It became apparent that actual net revenues would be approximately half of projections for the first year. (BBC, 2003) During that year, fares were increased on both the subway and bus. (BBC, 2003) In Summer 2005, the base congestion fee will be raised from £5 to £8. Such a scheme can only be effective if transit service levels are high enough to handle significant mode shift. With lower than expected revenues from congestion charging, it is possible that there will not be enough funding to support necessary transit service enhancements. A parking fee could complement the congestion charge by generating additional transit revenues.

7.4 Future Research

7.4.1 Fees – How High is Too High?

This research focused on the case in which the parking fee is so low that it is unlikely to have a direct impact on driver behavior. However, it is assumed that

increases in fee rates are likely to occur at some point in the future. Increases that are simply designed to keep pace with inflation will remain relatively minimal. However, substantial increases implemented for other reasons, such as higher revenue or traffic demand management, could have significant impacts on behavior. As discussed in Chapter 5, even modest fee levels have a large enough impact on property owners that they might start to consider different development patterns. A more in-depth exploration of this type of dynamic would be useful.

7.4.2 Impact of Suburban Commercial Location

In Chapter 6, the societal costs imposed by greenfield business location were quantified and compared with the modest parking fee levels. This is a potential way to demonstrate the essential nexus and rough proportionality of the parking fee. The Persky & Wiewel study upon which this analysis is based does not necessarily include all of the potential costs. For instance, the worker expenses of purchasing and maintaining a vehicle for commuting is a significant cost that should also be considered. While I have attempted to determine the approximate magnitude of additional automobile expenses, a more detailed analysis is necessary.

Furthermore, the societal cost analysis does not necessarily address the fact that commercial properties face a congestion impact fee from which residential properties are automatically exempt. It could be argued that residential parking spaces also contribute to regional congestion and that they should incur a similar impact fee in addition to or in lieu of higher gas taxes. It is for this reason that an analysis examining the social impact differentials between commercial and residential developments would be worthwhile.

7.4.3 Explore the Impacts of Transportation Funding

In Chapter 4, there is a brief examination of the potential system-wide impacts of increased transit funding versus the potential system-wide impacts of increased roadway funding. It is shown that, at least in this simplified case, transit funding results in travel cost reductions for everyone in the transportation system, including both transit riders and auto drivers. However, funding for auto actually increases costs for everyone in the system, regardless of mode. It would be interesting to see if this is an accurate representation of complex, real-life transportation systems. Additionally, what are the implications for regional transportation finance policy?

7.4.4 Monitor Actual Impacts

In the case of actual implementation, it will be important to monitor impacts and collect data so it can be used as a model for other transit authorities. Since this is a relatively unique approach to transit operations finance, it would be valuable to know if the hypotheses presented here are accurate. Since operations finance is a serious concern for a number of transit agencies, it is likely that a successful implementation in Chicagoland could inspire similar solutions elsewhere. As part

of its new commitment to regional mobility, the RTA should be initiate the collection of parking fee-related data, including:

- Surveys of property level reactions
- Annual reports on level and distribution of congestion
- Annual reports on the impact of increased funding on regional mobility levels

Frequently Used Abbreviations

APTA: American Public Transportation Association
AAA: American Automobile Association
CTA: Chicago Transit Authority
FAR: Floor Area Ratio
Illinois FIRST: Illinois Fund for Infrastructure, Roads, Schools, and Transit
MBTA: Massachusetts Bay Transportation Authority
MIT: Massachusetts Institute of Technology
NOI: Net Operating Income
RTA: Regional Transportation Authority
TfL: Transport for London
TTI: Texas Transportation Institute
UMTA: Urban Mass Transportation Administration
VMT: Vehicle Miles Traveled

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Number Of Parking Spaces	Number of employees									
	20	40	60	80	100	120	140	160	180	200
20	$8,900	$19,240	$29,580	$39,920	$50,260	$60,600	$70,940	$81,280	$91,620	$101,960
40	$7,460	$17,800	$28,140	$38,480	$48,820	$59,160	$69,500	$79,840	$90,180	$100,520
60	$6,020	$16,360	$26,700	$37,040	$47,380	$57,720	$68,060	$78,400	$88,740	$99,080
80	$4,580	$14,920	$25,260	$35,600	$45,940	$56,280	$66,620	$76,960	$87,300	$97,640
100	$3,140	$13,480	$23,820	$34,160	$44,500	$54,840	$65,180	$75,520	$85,860	$96,200
120	$1,700	$12,040	$22,380	$32,720	$43,060	$53,400	$63,740	$74,080	$84,420	$94,760
140	$260	$10,600	$20,940	$31,280	$41,620	$51,960	$62,300	$72,640	$82,980	$93,320
160	($1,180)	$9,160	$19,500	$29,840	$40,180	$50,520	$60,860	$71,200	$81,540	$91,880
180	($2,620)	$7,720	$18,060	$28,400	$38,740	$49,080	$59,420	$69,760	$80,100	$90,440
200	($4,060)	$6,280	$16,620	$26,960	$37,300	$47,640	$57,980	$68,320	$78,660	$89,000
220	($5,500)	$4,840	$15,180	$25,520	$35,860	$46,200	$56,540	$66,880	$77,220	$87,560
240	($6,940)	$3,400	$13,740	$24,080	$34,420	$44,760	$55,100	$65,440	$75,780	$86,120
260	($8,380)	$1,960	$12,300	$22,640	$32,980	$43,320	$53,660	$64,000	$74,340	$84,680
280	($9,820)	$520	$10,860	$21,200	$31,540	$41,880	$52,220	$62,560	$72,900	$83,240
300	($11,260)	($920)	$9,420	$19,760	$30,100	$40,440	$50,780	$61,120	$71,460	$81,800
320	($12,700)	($2,360)	$7,980	$18,320	$28,660	$39,000	$49,340	$59,680	$70,020	$80,360
340	($14,140)	($3,800)	$6,540	$16,880	$27,220	$37,560	$47,900	$58,240	$68,580	$78,920
360	($15,580)	($5,240)	$5,100	$15,440	$25,780	$36,120	$46,460	$56,800	$67,140	$77,480
380	($17,020)	($6,680)	$3,660	$14,000	$24,340	$34,680	$45,020	$55,360	$65,700	$76,040
400	($18,460)	($8,120)	$2,220	$12,560	$22,900	$33,240	$43,580	$53,920	$64,260	$74,600

Appendix A: Comparison of parking fee charges with estimated societal impacts of commercial property greenfield location.

Number of Parking Spaces	Number of employees									
	20	40	60	80	100	120	140	160	180	200
20	13.9%	7.0%	4.6%	3.5%	2.8%	2.3%	2.0%	1.7%	1.5%	1.4%
40	27.9%	13.9%	9.3%	7.0%	5.6%	4.6%	4.0%	3.5%	3.1%	2.8%
60	41.8%	20.9%	13.9%	10.4%	8.4%	7.0%	6.0%	5.2%	4.6%	4.2%
80	55.7%	27.9%	18.6%	13.9%	11.1%	9.3%	8.0%	7.0%	6.2%	5.6%
100	69.6%	34.8%	23.2%	17.4%	13.9%	11.6%	9.9%	8.7%	7.7%	7.0%
120	83.6%	41.8%	27.9%	20.9%	16.7%	13.9%	11.9%	10.4%	9.3%	8.4%
140	97.5%	48.7%	32.5%	24.4%	19.5%	16.2%	13.9%	12.2%	10.8%	9.7%
160	111.4%	55.7%	37.1%	27.9%	22.3%	18.6%	15.9%	13.9%	12.4%	11.1%
180	125.3%	62.7%	41.8%	31.3%	25.1%	20.9%	17.9%	15.7%	13.9%	12.5%
200	139.3%	69.6%	46.4%	34.8%	27.9%	23.2%	19.9%	17.4%	15.5%	13.9%
220	153.2%	76.6%	51.1%	38.3%	30.6%	25.5%	21.9%	19.1%	17.0%	15.3%
240	167.1%	83.6%	55.7%	41.8%	33.4%	27.9%	23.9%	20.9%	18.6%	16.7%
260	181.0%	90.5%	60.3%	45.3%	36.2%	30.2%	25.9%	22.6%	20.1%	18.1%
280	195.0%	97.5%	65.0%	48.7%	39.0%	32.5%	27.9%	24.4%	21.7%	19.5%
300	208.9%	104.4%	69.6%	52.2%	41.8%	34.8%	29.8%	26.1%	23.2%	20.9%
320	222.8%	111.4%	74.3%	55.7%	44.6%	37.1%	31.8%	27.9%	24.8%	22.3%
340	236.8%	118.4%	78.9%	59.2%	47.4%	39.5%	33.8%	29.6%	26.3%	23.7%
360	250.7%	125.3%	83.6%	62.7%	50.1%	41.8%	35.8%	31.3%	27.9%	25.1%
380	264.6%	132.3%	88.2%	66.2%	52.9%	44.1%	37.8%	33.1%	29.4%	26.5%
400	278.5%	139.3%	92.8%	69.6%	55.7%	46.4%	39.8%	34.8%	30.9%	27.9%

Appendix B: Percentage of societal impact costs that are covered by the parking fee.