COMMERCIAL CORRIDORS: A STRATEGIC INVESTMENT FRAMEWORK FOR PHILADELPHIA

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March 2009

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SECTION I – ATTRIBUTES AND OUTCOMES

1.0 PROJECT BACKGROUND

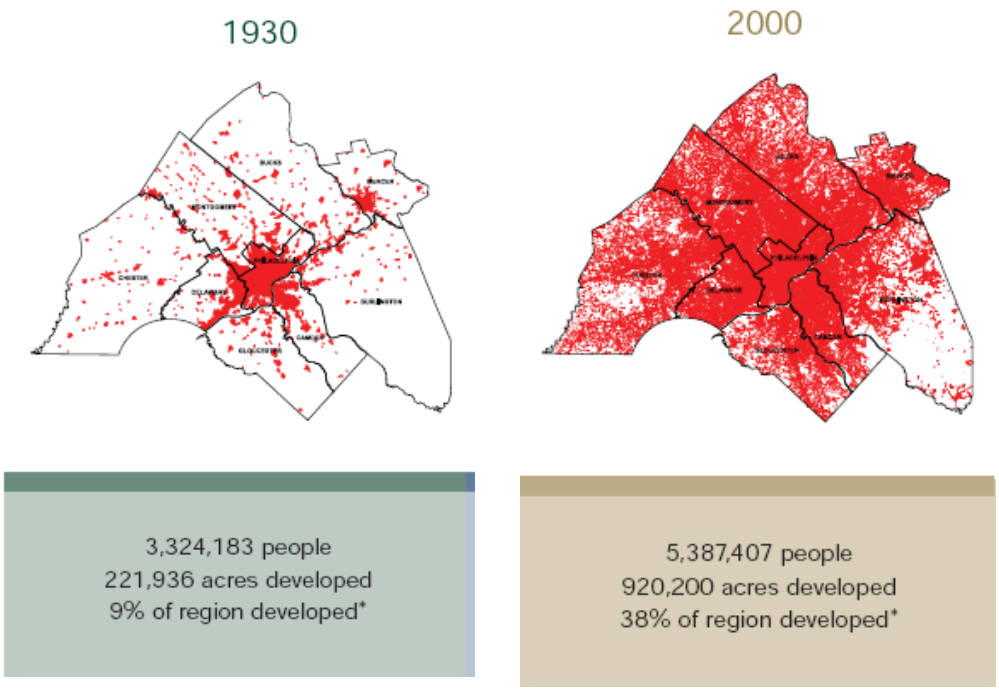
1.1 The Need for a Strategic Investment Framework

The City of Philadelphia is largely *a city of commercial corridors*. Commercial corridors, also known as retail centers, strip malls, and shopping plazas, are the building blocks that form Philadelphia's retail industry, and are responsible for approximately three-quarters of all retail sales in the City. Many such corridors anchor the residential neighborhoods that surround them, further intensifying the importance of understanding how are they are performing.

Commercial corridors are the building blocks of Philadelphia retail and the anchors of many of its neighborhoods.

As an older urban municipality, Philadelphia's retail centers were largely formed in the pre-automobile era near neighborhoods and transit stops, since shopping largely took place by foot or by public transportation. The growing popularity of the car, and the building out of the region from the standpoint of roads and highways, contributed to a massive decentralization of retail activity, as well as of population and employment, during the second half of the 20th century (see Figure 1.1).

Figure 1.1 – Decentralization of Philadelphia Region, 1930-2000



Source: Delaware Valley Regional Planning Commission (2006)

Within the City, auto-oriented shopping centers were developed, putting additional competitive pressure on traditional commercial corridors. This *hollowing out of the region's urban core* has had profound effects on shopping patterns. Some urban corridors successfully reinvested in themselves and remained relevant; others, however, suffered *significant disinvestment and physical decay*. Many of these eyesores are located along visually prominent pedestrian, transit, and automobile thoroughfares, thus galvanizing neighborhood groups, foundations, and policymakers towards interventions that rectify these conditions.

Most of Philadelphia's retail centers were formed in the pre-automobile era near neighborhoods and transit stops; the hollowing out of urban cores has led to significant disinvestment and physical decay of older corridors, which has disproportionately impacted low-income neighborhoods.

The deterioration of retail activity along commercial corridors has also *adversely and disproportionately impacted low-income neighborhoods*. These centers represent important destinations for convenience retail, not to mention hubs of employment. The University of Oregon and Urban Land Institute are but two entities that have written recently about the importance of healthy neighborhood retail options in low-income communities.[1]

[1] "The Role of Retail Markets in Impoverished Neighborhoods," University of Oregon Department of Architecture (2005); "Ten Principles for Rebuilding Neighborhood Retail," Urban Land Institute (2007).

But older corridors need not embody physical and commercial deterioration. In fact, there exist a number of *thriving commercial centers* dispersed across the City, their aesthetic and retail vibrancy due in large part to the efforts of neighborhood groups and community development corporations, working in concert with large foundations and with various entities within the City. As noted in a December 2003 study of Philadelphia's commercial corridors by Econsult and the Pennsylvania Economy League, funded by the William Penn Foundation, successful corridors are good for the City to the extent that they provide neighborhood residents with convenient sources of essential goods and services, enhance the overall attractiveness of their surrounding neighborhoods, and help provide a sense of place and community. [2]

There still remains a diversity of corridors that are thriving retail centers.

Philadelphia boasts great diversity in its retail centers, from historic pedestrian-oriented neighborhood corridors to modern auto-oriented shopping plazas. Each of the 265 retail centers identified by the Philadelphia City Planning Commission (PCPC) has its strengths and weaknesses, and together they form a pressing public policy challenge for the City of Philadelphia and other public and private stakeholders: some older corridors have deteriorated and shrunk to the brink of extinction, yet still offer important convenience goods to their nearby residents; while new environmental realities are prompting meaningful discussion and action concerning the sustainability of sprawling auto-oriented retail complexes.

Interventions tend to improve corridors, but insufficient data is available and little analysis has been done towards the creation of a more strategic understanding of corridors as inter-related parts of a larger system; the time is right for such an endeavor.

As a result, individual corridors, and the non-profit entities that manage them, have been *targeted for interventions* ranging from façade improvements and tax credits to design services and tree plantings.[3] It is not surprising to learn that, all things being equal, when such financial and other resources are invested into corridors, they tend to have a greater chance of succeeding.

However, this single-corridor approach has not yet been supplemented with *a more strategic and systemic understanding of corridors*. After all, none of the City's retail centers operate in a vacuum; success or failure may be heavily influenced by a corridor's performance at a micro-economic level, but it is also heavily influenced by large-scale demographic forces and business trends, by the evolution of public, corporate, and foundation investment, and by state and local government policy, not to mention by the success and failure of other corridors and by fundamental shifts in the competitive landscape of the retailing sector.

[2] See Appendix A for a copy of "Toward a Strategic Framework for Investment in Philadelphia's Commercial Corridors," Econsult Corporation and Pennsylvania Economy League (December 2003).

[3] Other cities across the US, having experienced the same evolution over time, are similarly seeing activity and intervention at the corridor level. From "Unrecognized Potential along Twin Cities Commercial Corridors," Macalester College (January 2005):

> The commercial corridors were once the premier location for commercial activity in the Twin Cities. Commercial functions located on the corridors to take advantage of the easy accessibility of the streets. As the cities grew, however, the corridors lost their status as the premier shopping locations. Despite the decline of commercial functions along these streets, the commercial corridors remain a crucial component of the inner-city neighborhoods in Minneapolis and St. Paul. For that reason, many organizations are working to improve the status of the commercial corridors.

Furthermore, oftentimes the public or private investment decision is not between investing and not investing, but in where or how much or in what to invest, choices that require more information in order to be well-made. The aforementioned December 2003 Philadelphia commercial corridors study was intended to explore the possibility of taking just such a strategic and systemic look, and of producing for the City and for foundations, CDCs, and private developers *an overall framework for corridor investment*.

Specifically, the study noted the need for such a framework to distill existing research and data into tools for decision-makers, define desired goals, and provide metrics to evaluate performance. Importantly, this study verified that it would be possible to develop such a framework, but that additional data would have to be collected.

This study concluded that commercial corridors and their surrounding neighborhoods are indeed *inter-related parts of a larger system*, rather than simply self-contained mini-economies, and that therefore an overall analytical framework was needed in order to identify the intra- and inter-corridor drivers for success and identify the most effective interventions for revitalizing commercial activity. It also explored the availability of relevant data to perform such an analysis.

In parallel, William Penn Foundation supported a seminal study by Susan Wachter of the Wharton School of Business on the impact of place-based investments on neighborhoods. The report noted the importance of such an analytical approach and yet the previously unavailable amount of processing bandwidth to undertake such an exercise:

> Despite the importance of community revitalization efforts, there has been little research on identifying and measuring the impact of public investment on community revitalization. In part, this is because the statistical requirement for undertaking such research requires data and large scale computer power that has previously not been available.[4]

It is therefore with great excitement and purposefulness that we tackle this particular topic in this particular manner. Commercial corridors are individually an important aspect of their surrounding neighborhoods, and together an essential part of a vital city. And, a statistical and strategic approach to understanding commercial corridors, analytically complex though it may be, is a useful way to explore the interrelationships between corridors, neighborhoods, and other micro-economic and macro-economic forces.

[4] "The Determinants of Neighborhood Transformation in Philadelphia – Identification and Analysis: The New Kensington Pilot Study," Susan Wachter (July 12, 2004). See also "Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia," Susan Wachter and Kevin Gillen (2006).

1.2 The Timeliness of this Study

The City of Philadelphia has prioritized commercial corridors as well as data-driven decision-making.

This follow-up study has come at an appropriate time. *The City of Philadelphia* has approved $65 million for its ReStore Philadelphia Corridors, recognizing the importance of retail districts in promoting healthy neighborhoods and a vibrant city, and acknowledging the need for infrastructural and other investments to strengthen key corridors.[5] The mayoral administration is focused on a number of related priorities, including transit infrastructure, environmental sustainability, and job creation, and thus is particularly interested in receiving guidance in making strategic investments at the corridor level, and then evaluating the efficacy of those investments.

The City is also implementing the "PhillyStat" initiative that, among other things, features 311 service and an expanded role for geographic data and spatial analysis in making policy decisions and rendering public services. At such a pivotal moment, this study, *"Commercial Corridors: A Strategic Investment Framework for Philadelphia,"* is intended to provide analysis and guidance to the City and other commercial corridor advocates by exploring quantifiable measures of corridor success and identifying the main drivers of that success.

William Penn Foundation and LISC are significant supporters of commercial corridors, and the topic intersects with a number of issues facing neighborhood groups, City agencies, and other public and private sector stakeholders.

William Penn Foundation, the funder of this study, is in a similar place in terms of its neighborhood investment decision-making; it was their initiative that first launched this effort, and their continued commitment that has kept it going. Finally, *Local Initiatives Support Corporation*, with whom this study is co-produced, is redoubling its efforts on the subject of commercial corridors, and is looking to apply lessons learned here in Philadelphia to other work it is doing across the country to revitalize communities and strengthen neighborhoods.

Of course, in parallel with this study effort, *corridor managers and neighborhood groups* continue to do their important work at the street level. Their labors will be made all the more effective with information from this report, concerning the *relative efficacy of various interventions* and the ways in which corridors are affected by larger shopping patterns and demographic trends.

Finally, City officials and other key public and private sector stakeholders are bringing to the fore important and relevant topics such as transit-oriented development, zoning reform, and neighborhood revitalization. These discussions, and the public and private sector decisions that will spring forth from them, make for *a moment for significant progress for Philadelphia's commercial corridors*.

[5] Initial investments to corridors were made with these funds in October 2007.

1.3 Scope of Work

This analytical model is intended to provide quantitative guidance in answering several kinds of questions facing decision-makers in the public, quasi-public, and private sectors (see Figure 1.2). From a public policy standpoint, these are *significant questions to be able to answer*. The City and other public and private sector funders can take this enhanced understanding of corridors to make smarter and better investments, get ahead of upcoming opportunities and imbalances, and help corridors to appropriately evolve over time. Given the long-standing role of corridors in Philadelphia in offering not only retail choices but also physical passageways and aesthetic markers for residents and businesses, it is vitally important to understand the system of retailing in the City so that an effective investment strategy can help guide public and private efforts to improve the City's commercial corridors, enhance our neighborhoods, and ensure that that Philadelphia residents have easy access to retail goods and services.

This analytical work can help answer a number of very important policy questions.

Figure 1.2 – Corridor-related Questions That Can Be Addressed By Building A Strategic Investment Framework

Corridor Attributes	*Corridor Performance*
• What are the characteristics of our current inventory of commercial corridors? (Chapter 2) • What are the characteristics of residential neighborhoods near these corridors? (Chapter 3) • Where is the competition located that competes with these corridors for retail dollars? (Chapter 4) • Which corridors are receiving public and private interventions (Chapter 5)	• Where are shopping dollars currently going? (Chapter 6) • How are corridors currently performing in terms of retail revenue? (Chapter 7) • What are the real estate trends in and around corridors? (Chapter 8) • Which corridors are doing better or worse in different performance measures? (Chapter 9)

We have divided Section I into eight chapters (see Figure 1.3):

Figure 1.3 – Overview of Report – (Section I)

Corridor Attributes	*Corridor Performance*
2. Corridor Characteristics	6. Consumer Choice
3. Neighborhood Characteristics	7. Retail Sales
4. Corridor Competition	8. Real Estate Characteristics
5. Corridor Interventions	9. Performance Measures

Chapters 2 to 5 analyze commercial corridors from a number of perspectives, which together provide the reader with a clear picture of what is taking place at the corridor level. This section contains successive chapters on the physical attributes of the City's commercial corridors (Chapter 2) and of their surrounding neighborhoods (Chapter 3), the retail competition they face (Chapter 4), and interventions that they have recently received (Chapter 5). Together, these chapters provide a rich understanding of the various *characteristics of commercial corridors in Philadelphia.*

Chapters 2 through 5 cover various corridor attributes: corridor characteristics, neighborhood characteristics, corridor competition, and corridor interventions.

Chapters 6 to 9 look at *corridor performance*. While there are certainly a number of intangible and qualitative components to overall corridor performance, there are three important tangible and quantifiable elements, as well. First, we consider consumer choice: with the help of a large household survey that was conducted as part of our analysis, we can investigate and map the origins and destinations, means of transportation, and purpose of shopping trips that go to various parts of the City and various types of retail centers (Chapter 6). Second, we utilize Revenue Department data to look at retail sales amounts and trends at the individual business and corridor level (Chapter 7). Third, we use detailed data on house sales prices over the last 12 years to trace the evolution of residential real estate values in the neighborhoods surrounding each corridor (Chapter 8). Finally, we look across these three performance measures to understand which corridors are succeeding in which indicators, and whether those results help classify corridors into various types (Chapter 9).

Chapters 6 through 9 cover various corridor outcomes: consumer choice characteristics, retail sales characteristics, and real estate characteristics.

We have divided Section II into seven chapters (see Figure 1.4):

Figure 1.4 – Overview of Report (Section II)

Corridor Relationships	*Corridor Recommendations*
10. Corridor Typology	14. Recommendations
11. Methods and Results	15. Future Directions
12. Findings	16. Conclusion
13. Simulations	

Chapters 10 through 13 explore the relationships between corridor attributes and corridor outcomes. First, we consider how corridor attribute and corridor outcome data can help inform a corridor typology (Chapter 10). Next, we describe our econometric approaches (Chapter 11) and display the results of our various regression analyses and drill down on topics of particular policy interest (Chapter 12). Finally, we introduce the findings from a simulation model based on the choices made by shoppers in our large household survey (Chapter 13).

Chapters 10 through 16 explore the relationships between corridor attributes and corridor outcomes, and offer policy guidance that emerges from such findings.

Chapters 14 through 16 translate all of our data and analytical findings into some policy implications and recommendations. In other words, having interpreted the results of our data collection efforts and of our regression analyses of corridor attribute and corridor outcome data, we can further interpret these results in terms of guidance for future public policy (Chapter 14). We also suggest useful additional study topics that can build from this existing body of data and analysis, and that can further inform policy efforts (Chapter 15). We conclude with a call to use what has been learned, and to encourage additional data collection and economic analysis, to the end of best addressing the challenges of the system of corridors in Philadelphia (Chapter 16).

The full complement of deliverables that have been generated from this work is as follows:

There are a number of end products that result from this work, as well as guidance on future data and policy work that can be done, all of which contribute to the ongoing and important work of understanding the system of corridors in Philadelphia.

- A *report narrative*, which present our findings in the form of narrative sections, summary figures, and selected maps.
- The framework from which to make possible additional *simulative exercises* over and above the ones depicted in the report, so as to model the possible outcomes resulting from various future interventions and events.
- Various appendices that provide *additional detail* on research design, more maps and figures, and other supporting documentation.

- A *comprehensive database* of all collected information on corridors and corridor interventions, structured so as to allow for the calling up of data at the corridor level or based on other criteria.

- Various *map files* in electronic format, which allow for zooming in to locations of interest and for adding or removing layers of data as needed.

- A summary *slideshow presentation* that can be used to inform various audiences of the study and its findings.

- A *framework for refreshing the data* in deepening our understanding of the Philadelphia system of corridors

These deliverables will greatly add to the current discussion on commercial corridors in Philadelphia. They can also provide guidance *for future data updates and policy gatherings,* both of which are recommended in order to effectively build from the findings and recommendations of this report.

This study of commercial corridors and the retailing system is necessarily an ongoing one. Decisions based on these and other findings will themselves provide additional data from which lessons learned can be gleamed. Market and demographic data need to be updated over time, and advances in econometric and mapping tools allow an ever greater understanding of that data. Accordingly, this report should be seen as a contribution to an ongoing and important work, that of understanding how the system of corridors in Philadelphia works and how to best make strategic investments into such a system; and accordingly, we are mindful to address strategies for keeping the data and analytical process fresh and useful in the future.

1.4 Project Partners

As analytical as the task of studying corridors has been from a systemic and econometric standpoint, there is still a significant amount of art mixed in with the science. Fortunately, there are a number of immensely qualified and thankfully available *experts who were willing to invest their time* in guiding us through this study and in helping us bring these conclusions to light. Their participation added significantly to the caliber of our analysis, and their insights contributed to both the art and the science of our final product.

The advisory committee has met four times over the course of the study, and they and others have offered invaluable information and insight along the way.

Just as with our first commercial corridors study in 2003, *a formal advisory committee* was formed to provide feedback and to make the research process more transparent. This body met four times over the course of the project: in May 2006, to kick off the study, in December 2006, to review our research design report, in October 2007, to hear preliminary findings, and in March 2009, to review our final report. [6]

LISC, William Penn Foundation, and the City have been active and important partners in this work.

Along the way, *other key advisors emerged*, providing invaluable insight and offering useful information. Most notably, we convened two separate focus groups during our data gathering phase: one with corridor managers, who represented the corridor-level practitioner perspective, and a second with corridor experts, who represented the citywide policymaker perspective. We are grateful for the input of these and other groups, as well. Special thanks are due to three key collaborators in this effort:

- *Local Initiatives Support Corporation (LISC)* – This report was produced in conjunction with LISC, a national leader in commercial corridor investments, advocacy, and research. LISC representatives from Philadelphia and beyond were heavily involved in the initiation, evolution, and completion of this work.

- *William Penn Foundation* – This report was fully funded by the William Penn Foundation, which has long been a vital investor in commercial corridors in Philadelphia. Their participation has ensured a final product that will be useful to the investor community and that will be widely disseminated and discussed.

- *City of Philadelphia* – The City itself has been an active supporter of this research effort, from initial framing discussions to ongoing provision of City data. Most notably, we have received invaluable contributions from the Commerce Department, the Planning Commission, and the Revenue Department. Certainly, these departments will continue to push this cause, to the extent that it yields useful information from which to assess past corridor investments and plan future ones.

[6] See Appendix B for a full listing of advisory committee members and other helpful resources.

1.5 Analytical Framework

Our analytical approach included a vast amount of data collection and a wide range of research methods to explore the relationships between corridor attributes and corridor outcomes.

The key innovation of this particular study is its exploration of *the linkages between consumer choices, corridor characteristics, and citywide context*. In other words, the final product – the analytical model – is designed to characterize, animate, and predict the activity flows of consumers and their choices as they affect and are affected by changes on a corridor and citywide level. Thus, the analysis is intended to help policymakers understand corridors and corridor interventions in a more comprehensive and inter-connected manner, and is intended to assist in the evaluation of the potential consequences of various policy interventions as well as public and private investments on individual corridors and on the entire system of corridors.

This undertaking relied on the assembly of existing data, the development of new primary data through household surveys and cooperative efforts with the Philadelphia Department of Revenue, and the deployment of sophisticated research methods including spatial analysis, multivariate regression, and econometric modeling. The data and analytical tools have helped us better understand the behavioral choices of individual consumers and quantify how those choices affect and are affected by changes in the City's commercial corridors.

The study seeks to identify *the main determinants of corridor success*, among a universe of possible drivers, including corridor and neighborhood characteristics, retail competition, public and private interventions, and other overall citywide and retail trends (see Figure 1.5).[7] In particular, past data on various corridor interventions and their resulting effect on corridor success have been analyzed to develop some policy "rules of thumb" that will summarize general guidelines for supporting and/or transitioning corridors.

[7] See Appendix C for our December 2006 Research Design Report and Appendix D for our econometric approach to our dependent variables.

Figure 1.5 – Overall Corridor Performance Equation

Dependent Variables	*Independent Variables*
• Consumer Choice (Chapter 6) • Retail Sales (Chapter 7) • Real Estate Characteristics (Chapter 8)	• Corridor Characteristics (Chapter 2) • Neighborhood Characteristics (Chapter 3) • Corridor Competition (Chapter 4) • Corridor Interventions (Chapter 5)

In addition to providing a framework for strategic corridor investment, the study has yielded *a new database of corridor information*. This database serves as a comprehensive and integrated repository of multiple data sets related to commercial corridors, and as such should prove quite useful to businesses, corridor managers, public sector decision-makers, and researchers, particularly to the extent that it can be used to encourage additional and subsequent data gathering on the subject.

The data itself, organized into a database of corridor information, is a useful deliverable.

2.0 CORRIDOR CHARACTERISTICS

2.1 Overview

The Philadelphia City Planning Commission (PCPC) has identified *265 distinct retail centers*, or commercial corridors, within City boundaries.[8] A commercial corridor is a concentration of retail stores, which serve a common trade area and surround and/or lie along a single street or set of streets.[9] These span a variety of commercial corridor types, and form the basis for this report. We begin by locating these retail centers on a map of Philadelphia (see Figure 2.1).

There are 265 retail centers within the City of Philadelphia, which are profiled every seven years by the City Planning Commission.

Every seven or so years, PCPC produces a report called Philadelphia Shops Update, in which it describes these retail centers and provides data on various characteristics for each corridor; the most recent inventory was taken in 2002, with previous inventories done in 1988 and 1995.[10] We can depict these characteristics on a map, and in doing so identify some general trends related to corridors in Philadelphia. Such is the exercise for the remainder of this chapter.[11]

Importantly, the specificity of PCPC's definitions varies by corridor. In some cases, a corridor is strictly defined as a rectangle between one pair of streets and another street or pair of streets (examples: "Broad and Washington" is defined as between Catherine Street to Ellsworth Street, between 12th Street to 16th Street; "South Street / Grad Hospital" is defined as

[8] See Appendix E for a list of retail centers, Appendix F for intersections and street ranges per PCPC's definitions, and Appendix G for information on corridor boundary and data files.

[9] From Econsult Corporation's December 2003 study of Philadelphia's commercial corridors. Such a definition is perhaps broader than what others may consider to be a commercial corridor, but enables a more inclusive analysis of retail in Philadelphia.

[10] See Appendix H for Philadelphia Shops Update data files for 1988, 1995, and 2002, and Appendix I for a legend of all corridor characteristics.

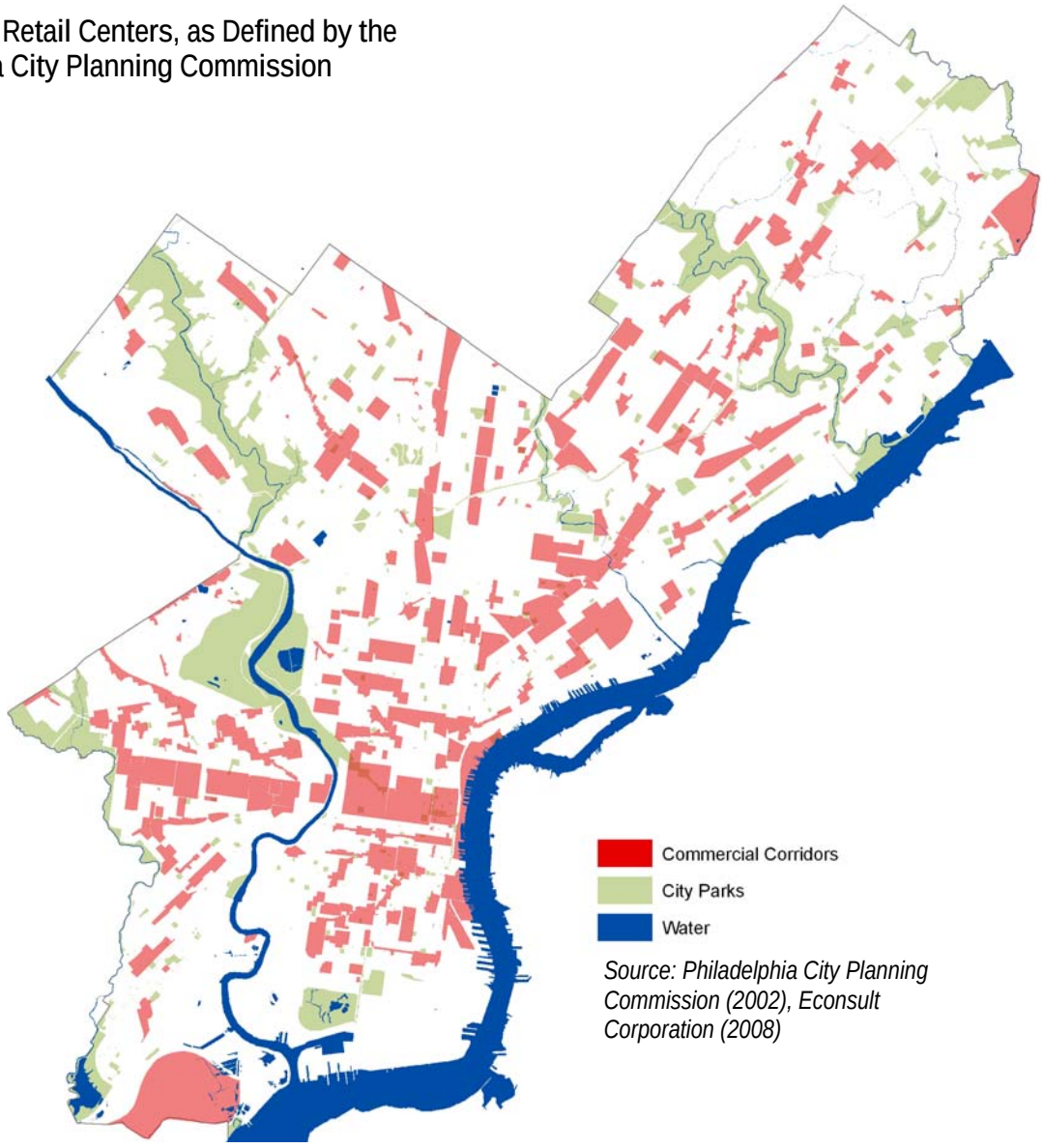
[11] For the purposes of this chapter and some other parts of this report, when we are looking at the characteristics of a corridor itself, we mean all parcels that touch the intersections and street ranges that are included in PCPC's definition of that corridor. When we are interested in what is happening directly within a particular corridor, we utilize this definition. Thus, in this chapter, as well as the chapters on consumer choice characteristics (Chapter 6) and retail sales characteristics (Chapter 7), when we describe a particular corridor, we are considering just the parcels that touch its intersections and street ranges, according to the PCPC definition.

When we are interested instead in the general characteristics of a corridor and its immediate surroundings, we may take the aforementioned boundaries and extend them an additional ¼ mile in all directions for pedestrian/transit corridors, or ½ mile for other corridor characters. This is the case for many of the visuals in the chapters on neighborhood characteristics (Chapter 3), corridor competition (Chapter 4), corridor interventions (Chapter 5), and real estate characteristics (Chapter 6).

When our map-making involves simply depicting points as provided by an outside source, we list that outside source as the source of the visual. However, when our map-making involves assigning those points to a corridor, we list the outside source as well as ourselves as the source of the visual.

South Street between 16th Street and 21st Street). In other cases, a corridor is defined as the intersection of two streets, which necessitates a subjective decision as to how far up and down each street the corridor boundaries go (example: "Wilson Park" is defined as 26th Street and Snyder Avenue). Still others are even more broadly defined, requiring even more subjectivity in determining which blocks and parcels should be included (example: "10th and Snyder and Vicinity" is defined as 10th and Snyder and vicinity).

Figure 2.1 – Retail Centers, as Defined by the Philadelphia City Planning Commission



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

Where a corridor's boundaries are drawn can have a dramatic effect on the characteristics assigned to that corridor. For example, retail sales totals by corridor will be incorrectly high or low if a corridor's boundaries are drawn too loosely or tightly. Therefore, special care has been taken to ensure that corridor boundaries, as described by PCPC and as geocoded for the purposes of our analysis, are in fact reasonably representative of existing concentrations of retail sites. For example, for all corridors in question, we validated our boundaries by reviewing satellite and "Street View"[12] images online, looking at zoning and land use maps, and in special cases by physically surveying the corridors.

Where a corridor's boundaries are drawn can have a significant impact on the depiction of its attributes and outcomes a corridor can be defined as the intersection of two streets or as a rectangle between one pair of streets and another pair of streets, or it can be more fuzzily defined.

Two additional points must be made concerning the definition of corridor boundaries, both related to and important to *the evolution of retail activity over time*. First, there are many retail corridors that have significantly shrunk over the past twenty years (i.e. since PCPC first located and defined the boundaries of corridors in the City), such that PCPC's boundary descriptions capture a lot of parcels that are no longer retail. However, we chose not to redraw those boundaries more tightly, because it is important to retain that corridor's boundaries over time so that the shrinkage in store density and retail activity can be picked up.

Second, and in the opposite direction, there are many retail corridors that have significantly expanded in the past six years (i.e. since PCPC completed its most recent Philadelphia Shops Update report), such that PCPC's boundary descriptions do not capture a lot of parcels that are now retail. In three cases, two of which PCPC already anticipated in 2002, we override PCPC's boundary descriptions and draw boundaries that are more inclusive of new growth: 24th and Oregon also includes Quartermaster Plaza, Snyder Plaza also includes Columbus Commons, and the southern border of Aramingo Avenue has been expanded to account for retail growth in that direction. In such cases, it is important to draw the boundaries based on current conditions, so that the increase in store density and retail activity can be picked up.

Evolution in retail activity may lead to significant changes in corridor attributes over time: some corridors have shrunk considerably, while others have expanded.

[12] Street View is a function of Google Maps, whereby on selected streets in Philadelphia, one can call up 360-degree views at eye level, thus enabling virtual surveys of a corridor and surrounding area.

2.2 Type

PCPC's 2002 Philadelphia Shops Update explored at length the distribution of corridors across the City by type and character. These characteristics represent different models of retail centers, so it is instructive to see which ones are more or less prevalent in different parts of the City.

"Type" refers to the trade area from which a corridor draws customers. PCPC has identified six corridor types: neighborhood subcenter, neighborhood center, community center, regional center, superregional center, and specialty center.

PCPC defines *corridor type* based on a combination of size (i.e. gross leasing area, or GLA), the trade area from which anchors draw customers, and store mix. It classifies corridors into six types; note that the overwhelming majority of retail centers are neighborhood subcenters, neighborhood centers, or community centers, with regional centers, superregional centers, and specialty centers accounting for about 7 percent of all retail centers (see Figure 2.2 and Figure 2.3).[13]

Figure 2.2 – 2002 Distribution of Philadelphia Corridors, by Type[14]

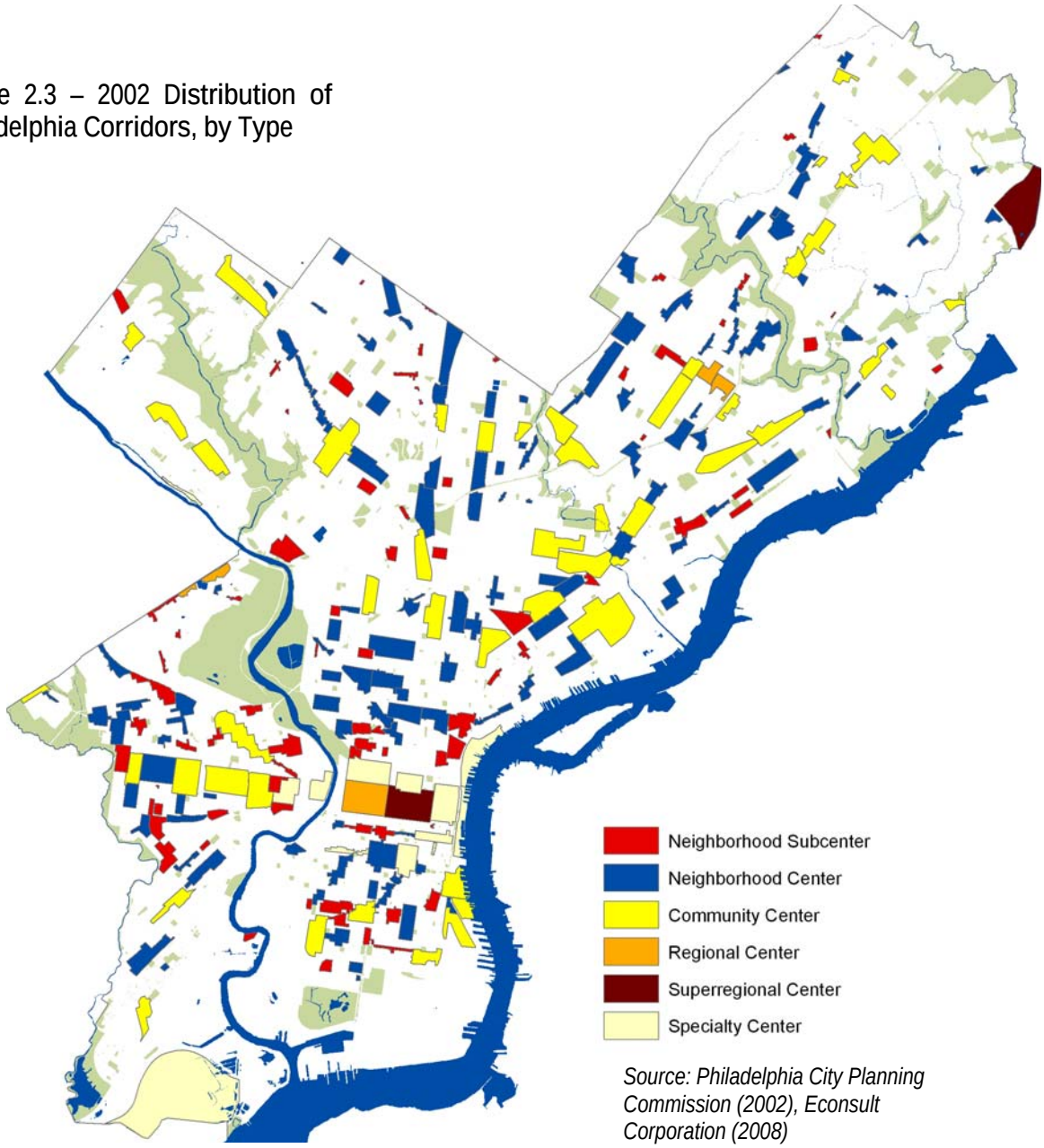
Type	*% of Total*	*Name*	*GLA (sf)*	*Description*
1	29.8%	Neighborhood Subcenter	10,000-35,000 SF	Convenience store, grocery, pharmacy, dry cleaner, etc.
2	44.9%	Neighborhood Center	30,000-120,000 SF	Supermarket, variety store, post office
3	18.1%	Community Center	100,000-500,000 SF	Discount department store, home improvement, "category killer"
4	1.5%	Regional Center	300,000-900,000 SF	One or two full-line department stores
5	0.8%	Superregional Center	500,000-2,000,000+ SF	Three or more department stores or equivalent
6	4.9%	Specialty Center	Varies	Concentration of entertainment, restaurants, off-price goods, arts, or other

Source: Philadelphia City Planning Commission (2003)

[13] See Appendix J for a list of corridors by type.

[14] Based on 1995 data, as that year's classification was more extensive and as this characteristic did not change from 1995 to 2002.

Figure 2.3 – 2002 Distribution of Philadelphia Corridors, by Type



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.3 Character

PCPC defines *corridor character* based on the dominant physical and functional layout. It classifies corridors into five character types: pedestrian/transit corridors, auto-oriented corridors, free-standing centers, specialty centers, and mixed character, with pedestrian/transit being the most numerous (see Figure 2.4 and Figure 2.5).[15]

"Character" refers to the dominant physical and functional layout of the corridor. PCPC has identified five corridor characters: pedestrian / transit corridors, auto-oriented corridors, free-standing centers, specialty centers, and mixed character.

Figure 2.4 – 2002 Distribution of Philadelphia Corridors, by Character[16]

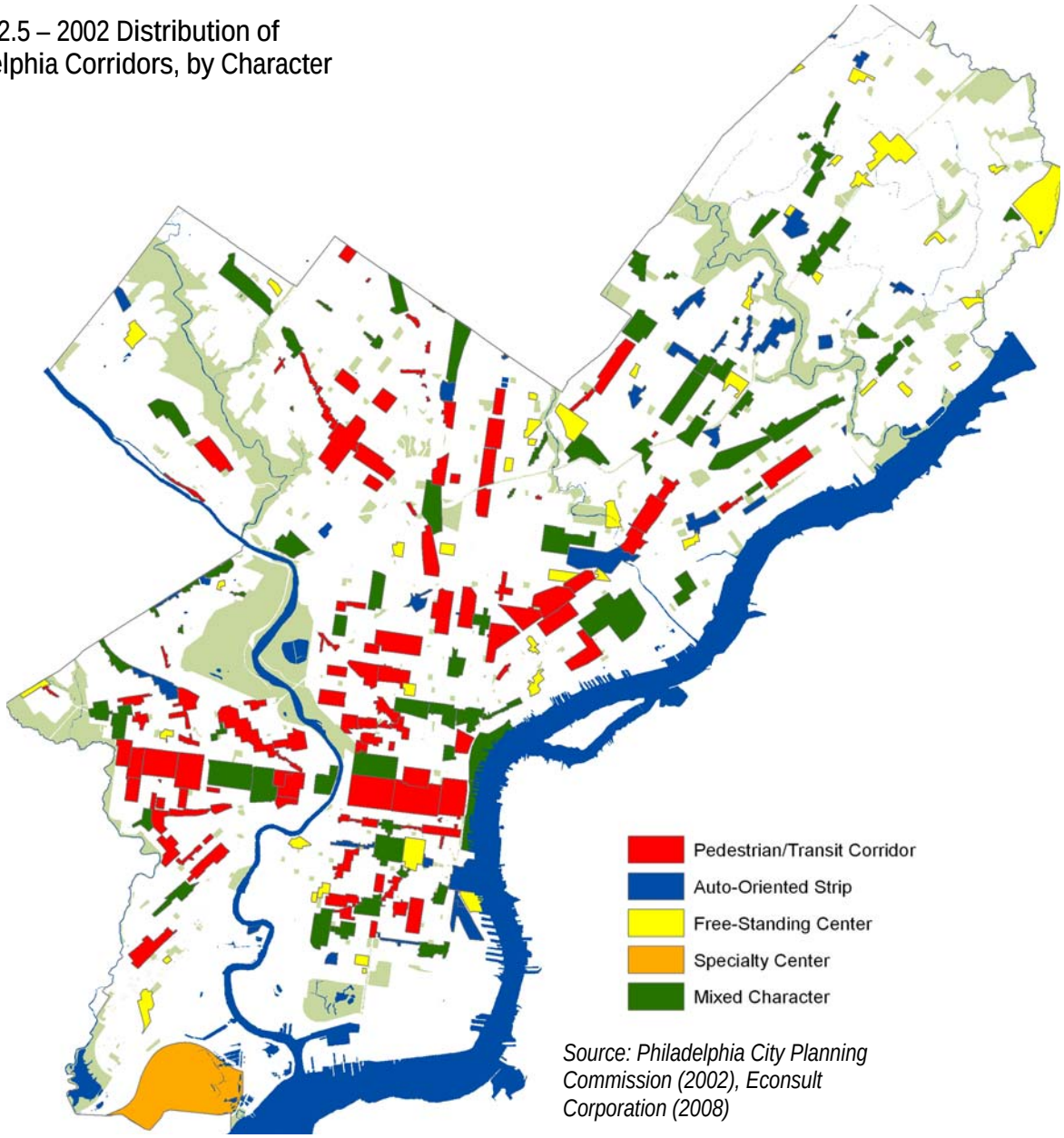
Type	*% of Total*	*Name*	*Description*
1	41.9%	Pedestrian / Transit Corridor	Sidewalk-oriented, continuous streetwalls, separate property ownership, predominantly on-street parking
2	12.1%	Auto-Oriented Strip	Piecemeal development and ownership, setbacks, free off-street parking, frequent curb cuts
3	17.0%	Free-Standing Center	Coordinated development and ownership, auto-oriented, internal pedestrian circulation, generally set back with free off-street parking
4	0.4%	Specialty Center	Self-contained complex or cluster, stands as its own destination or complements another primary destination (e.g. airport)
5	28.7%	Mixed Character	Strongly exhibits two or more characteristics

Source: Philadelphia City Planning Commission (2003)

[15] See Appendix K for a list of corridors by character.

[16] Based on 1995 data, as that year's classification was more extensive and as this characteristic did not change from 1995 to 2002.

Figure 2.5 – 2002 Distribution of Philadelphia Corridors, by Character



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

Further subdividing by type and character, one can see that by numbers, the vast majority of pedestrian and transit corridors are either neighborhood subcenters or neighborhood centers, while there are more free-standing and mixed corridors with larger trade areas (Figure 2.6). Notably, while this is the distribution of the number of corridors, it is not necessarily the distribution of corridor activity: the two pedestrian and

transit corridors with larger trade areas are the two Center City corridors, which account for a very large proportion of corridor activity, relative to other corridors.

Figure 2.6 – 2002 Distribution of Philadelphia Corridors, by Type and Character

Type	*Nhd Subctr*	*Nhd Ctr*	*Comm Ctr*	*Reg Ctr*	*Superreg Ctr*	*Specialty*	*Total*
Character							
Ped/Transit	42	49	12	1	1	6	111
Auto-Oriented	15	13	3			1	32
Free-Standing	7	22	13	1	1	1	45
Specialty						1	1
Mixed	15	35	20	2		4	76
Total	79	119	48	4	2	13	265

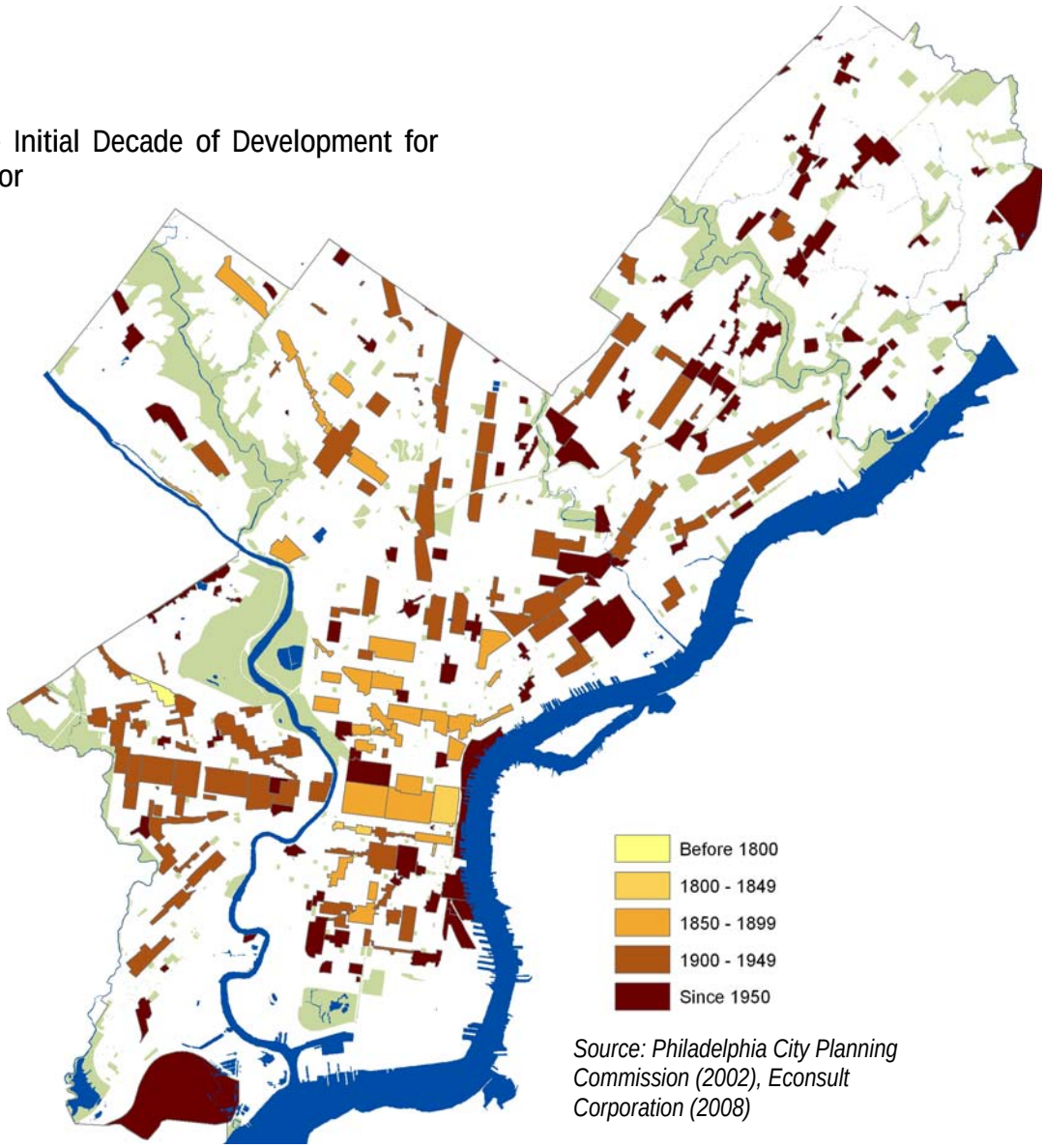
Source: Philadelphia City Planning Commission (2003)

2.4 Age

Age represents the estimated decade of the corridor's original development (see Figure 2.7). According to PCPC, some corridors date as far back as 1840. Not surprisingly, older corridors are located closer to the core of the City and/or along transit lines, while newer corridors can be found on the periphery and/or in more auto-oriented locations that are less served by transit.

"Age" refers to the estimated decade of original development for each corridor. Some corridors date back as far as 1840.

Figure 2.7 - Initial Decade of Development for Each Corridor



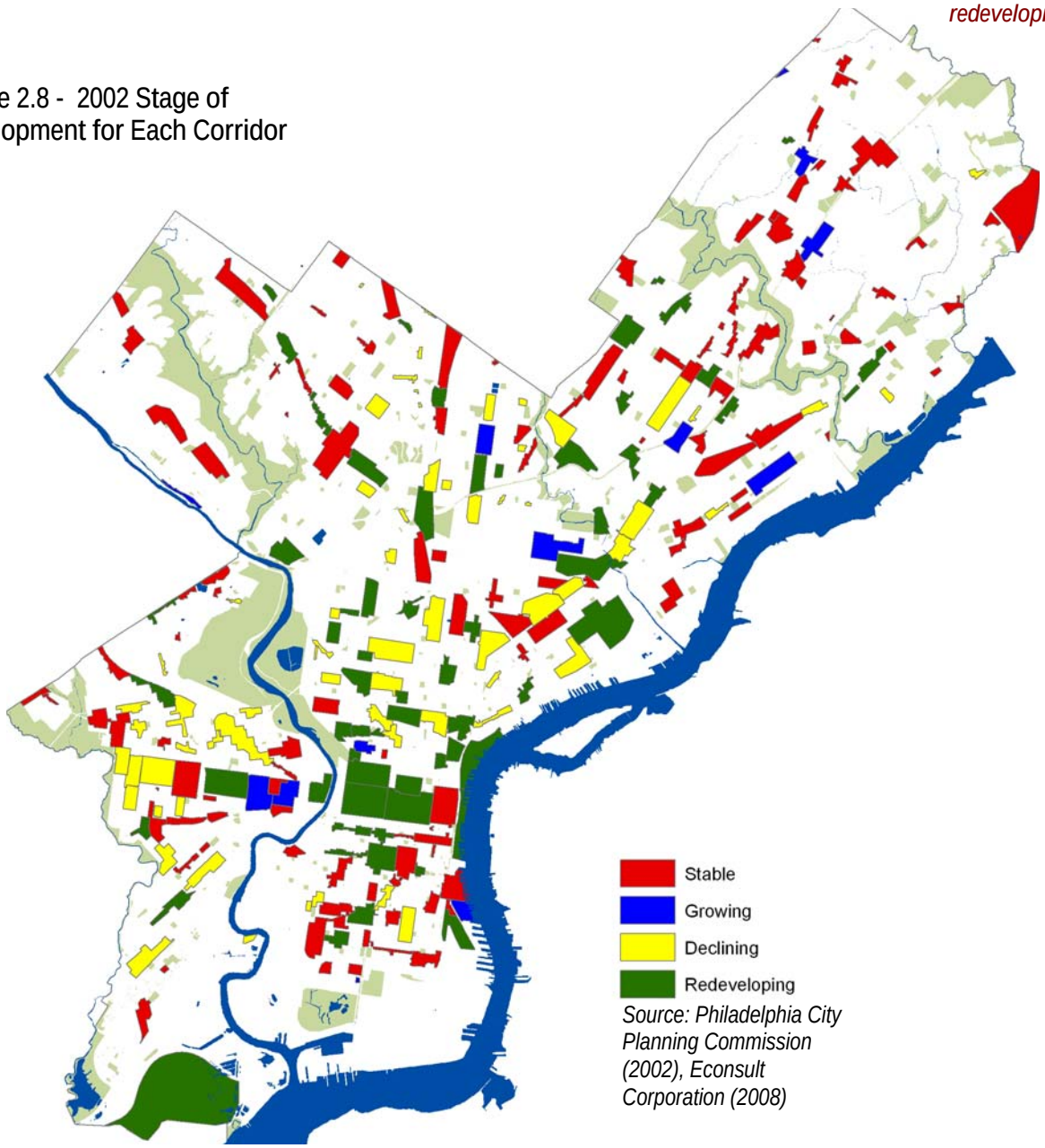
Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.5 Stage

Stage is based on corridor size and occupancy, as well as on trends since the 1988 and 1995 Philadelphia Shops reports, and sorts into four categories: 1) Stable, 2) Growing, 3) Declining, and 4) Redeveloping (see Figure 2.8). Consider the concentration of decline in North and West Philadelphia, as well as the redevelopment of Center City corridors in concert with that area's general renaissance, in contrast to the relative stability of the newer corridors that are further away from Center City.

"Stage" refers to a corridor's size and occupancy in comparison to previous surveys. PCPC has identified four corridor stages: stable, growing, declining, and redeveloping.

Figure 2.8 - 2002 Stage of Development for Each Corridor



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.6 Condition

"Condition" refers to the state of a corridor's public and private spaces. PCPC scores corridors on a 12-point scale.

Condition is a composite measure of the corridor's public space, private space, and store mix. The public space score concerns itself with the overall physical condition and maintenance of the corridor's spaces and fixtures that are open, visible, and accessible to the general public, while the private space score concerns itself with such structures that are open primarily to customers and employees. Store mix denotes the overall quantity and quality of the corridor's mix of establishments, keeping in mind the type of anchors relative to the corridor type, and accounting for the types of uses deemed compatible or detrimental to the corridor's overall health. Together, these yield an overall score for corridor condition: 3-4 = excellent, 5-7 = good, 8-9 = fair, 10-12 = poor.[17]

[17] See Appendix L for PCPC's full description of the components of corridor condition. Too many corridors are missing condition rankings for a map to be useful to depict in this chapter, but was accounted for in our econometric work.

2.7 Store Mix

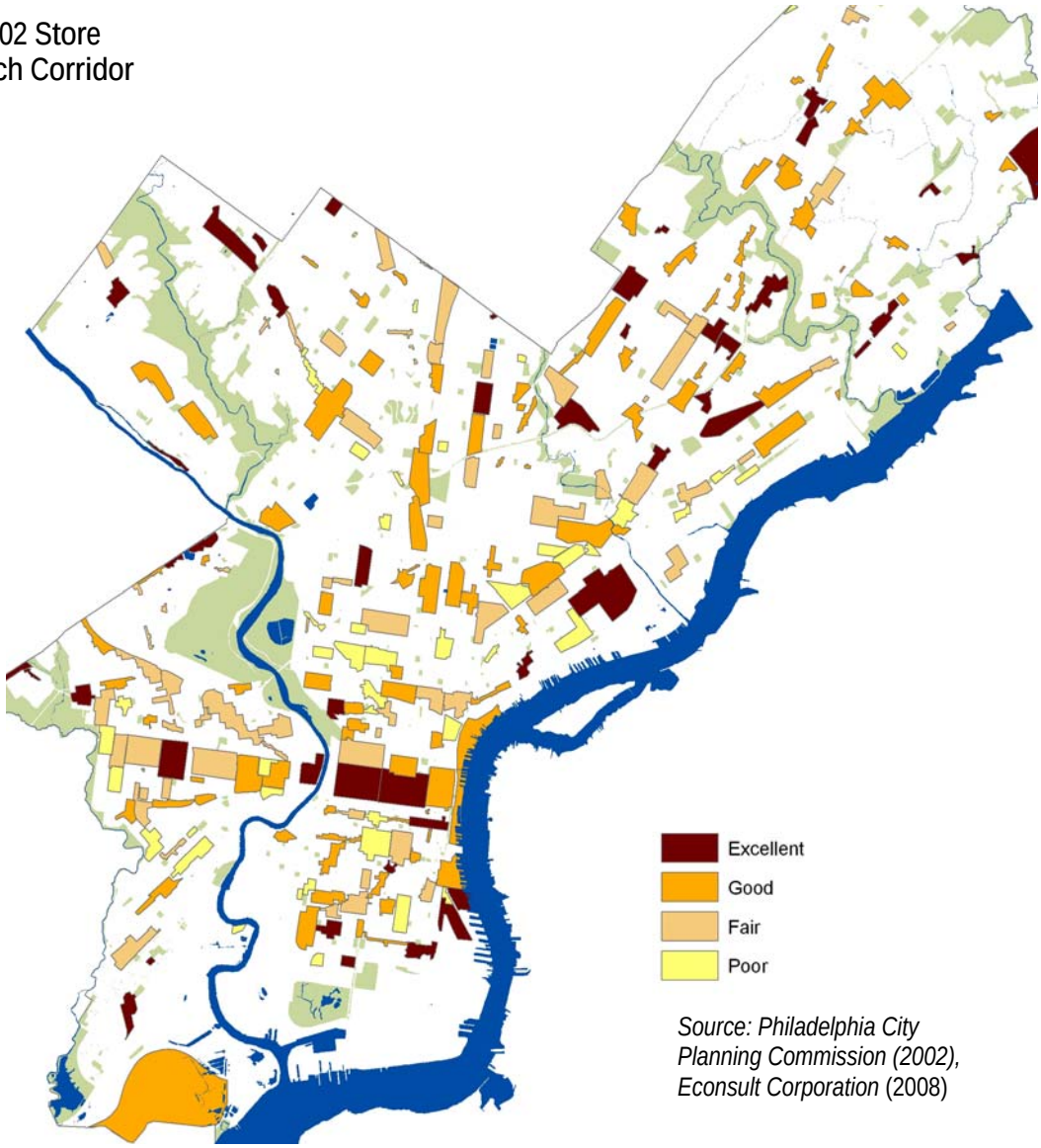
Next, we consider PCPC's evaluation of a corridor's store mix. While store mix is a difficult concept to quantify and institutionalize, PCPC attempts to provide some guidance in terms of evaluating the quality of a corridor's store mix. [18] *Store mix* denotes the overall quantity and quality of the corridor's mix of establishments, keeping in mind the type of anchors relative to the corridor type, and accounting for the types of uses deemed compatible or detrimental to the corridor's overall health. Corridors are then assigned a score from 1 to 4: 1) excellent, 2) good, 3) fair, 4) poor.

"Store Mix" refers to the overall quantity and quality of a corridor's portfolio of retail establishments, relative to its type and character. PCPC classifies corridors' store mix as "excellent," "good," "fair," or "poor."

Plotting store mix by corridor on a map provides an interesting visual depiction of the pattern of corridor development across the City: not surprisingly, excellent store mix is relatively coincident with more regional retail centers such as the two Center City corridors and Franklin Mills (see Figure 2.9). We can also look across years, with the help of PCPC's 1995 survey results; we note there that it was largely auto-oriented corridors further away from Center City that were able to add stores and therefore improve store mix from 1995 to 2002 (see Figure 2.10).

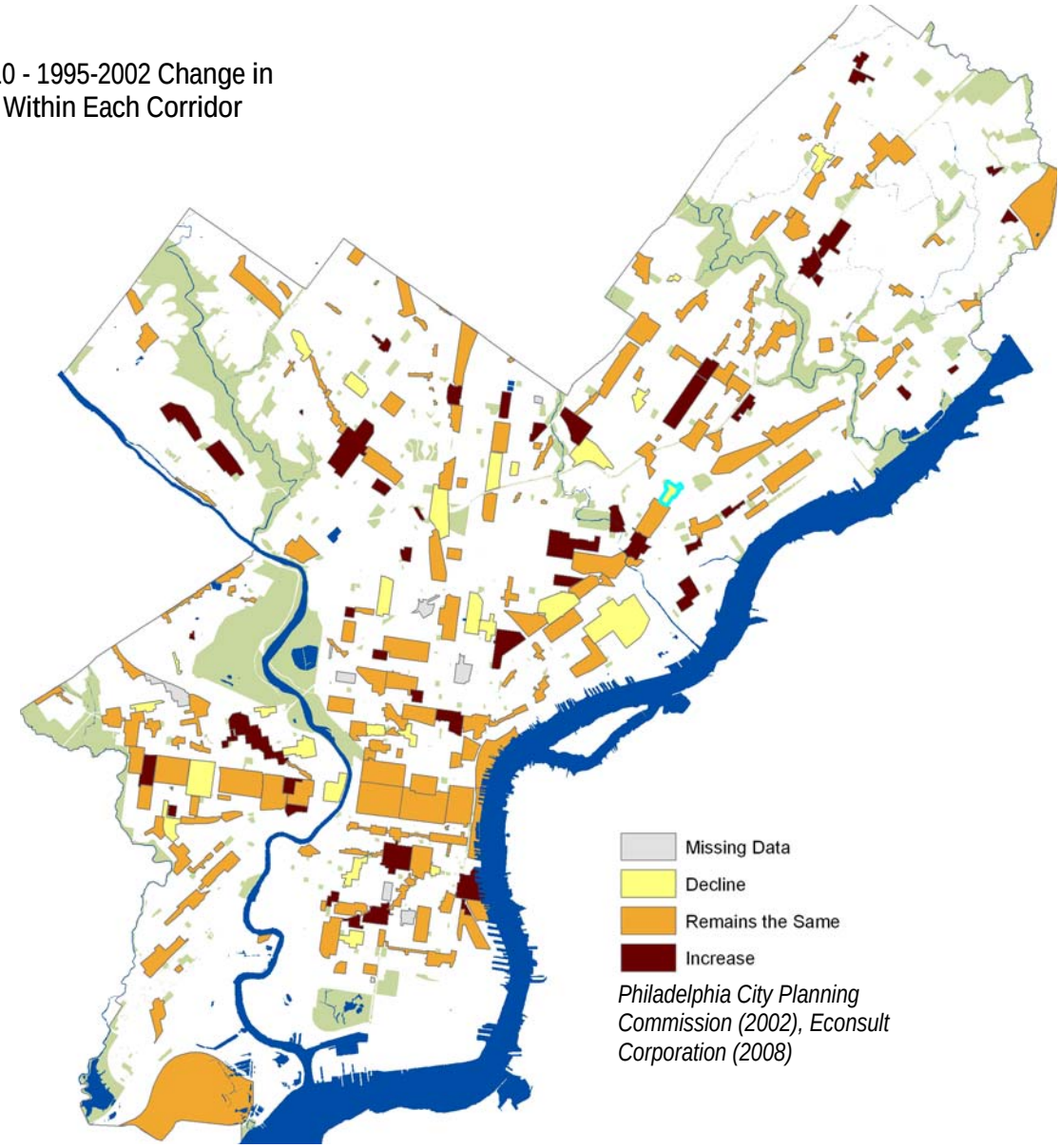
[18] "Business Clustering to Build Retail Sales," University of Wisconsin Cooperative Extension – Center for Community Economic Development (July 1997).

Figure 2.9 - 2002 Store Mix Within Each Corridor



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

Figure 2.10 - 1995-2002 Change in Store Mix Within Each Corridor



Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.8 Land Area

Land area measures the physical size of the corridor, based on PCPC's border descriptions and calculated from boundaries drawn by Econsult, as described earlier in this chapter. It is a useful variable to know at the corridor level, to the extent that we can use it as a denominator in determining the density of something by corridor, such as the number of establishments or the amount of park space. By our estimates, corridors range in size from less than 10 acres to well over 1000 acres.

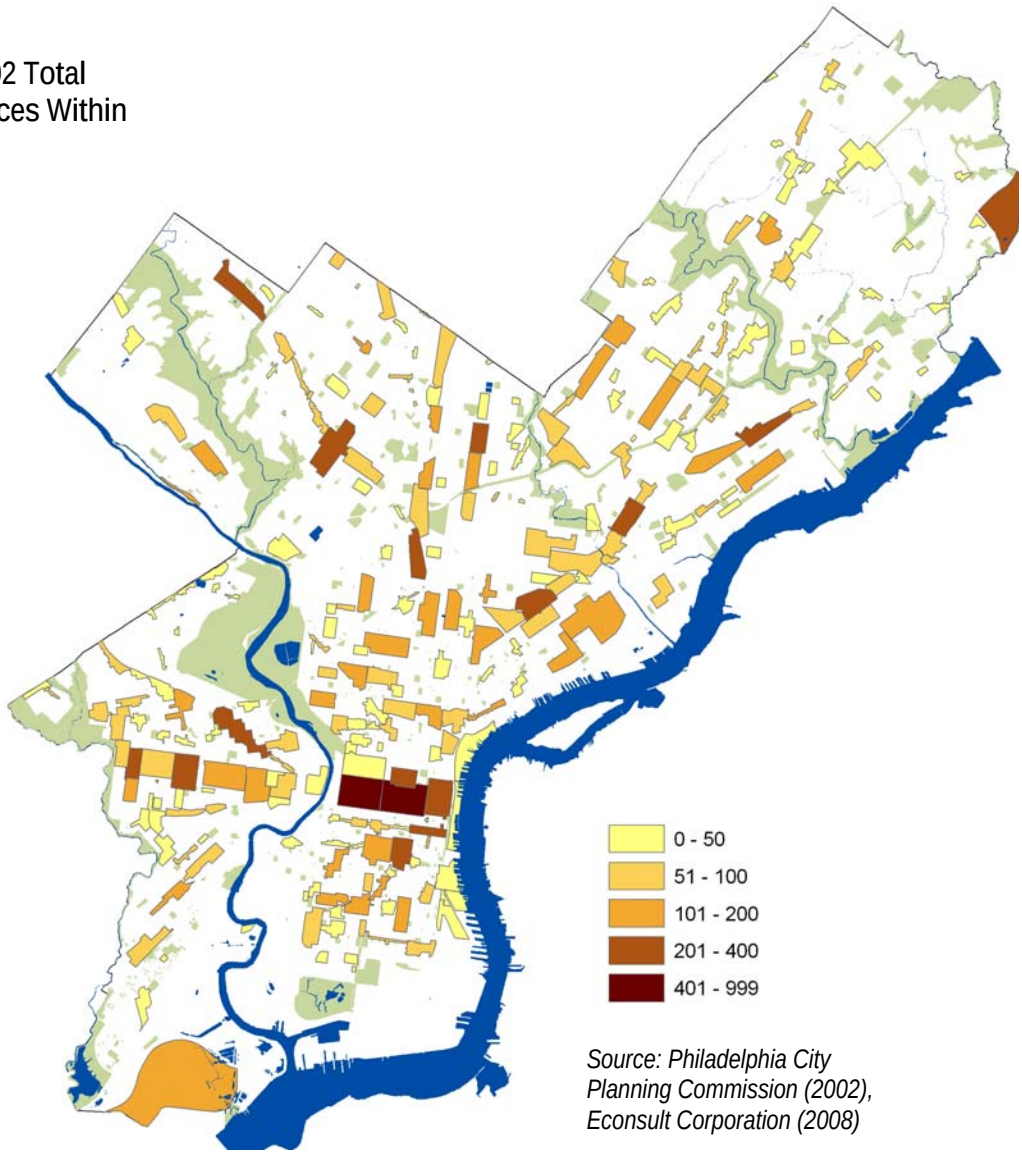
"Land Area" refers to the physical size of corridor. Corridors range in size from less than 10 acres to well over 1000 acres.

2.9 Commercial Space

C*ommercial space* is concerned with the total number of leasable spaces available for retail use (see Figure 2.11). It is a useful variable to know at the corridor level, to the extent that, along with vacancy rate, it can offer a sense of the density of retail establishments within each corridor. Based on PCPC data, there are corridors that have less than 10 retail spaces as well as those that have almost 1000 retail spaces.

"Commercial space" refers to the total number of leasable spaces available for retail use by corridor. Corridors range from less than 10 spaces to well to almost 1000 spaces.

Figure 2.11 – 2002 Total Commercial Spaces Within Each Corridor



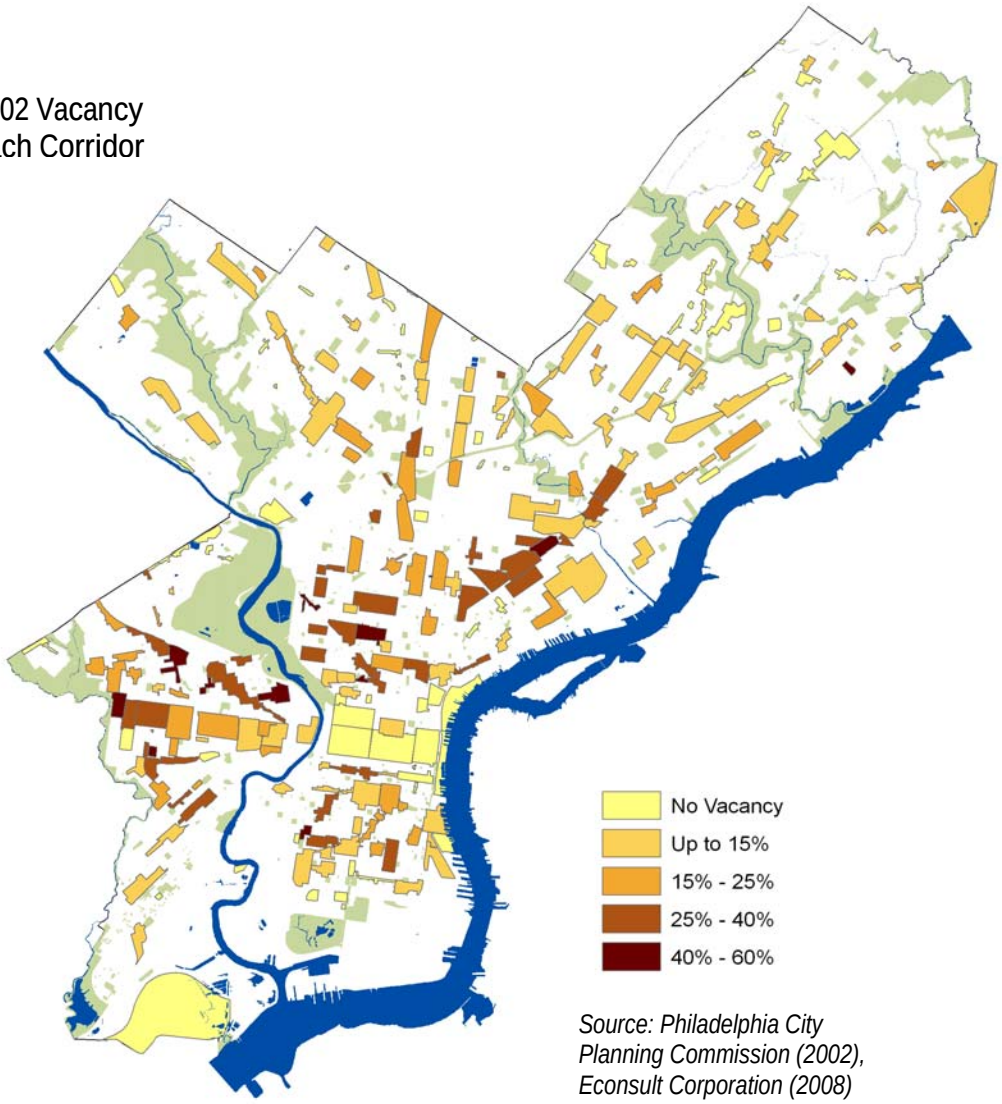
Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.10 Vacancy Rate

V*acancy rate* captures the percentage of all commercial spaces that were vacant at the time of the 2002 Philadelphia Shops Update (see Figure 2.12 and Figure 2.13).[19] Note the marked reduction in Center City vacancies, combined with some pockets of increasing vacancy rates further away from Center City.

"Vacancy rate" refers to the percentage of all commercial spaces within a corridor that are not occupied. Corridors range from essentially no vacant spaces to well over half vacant spaces.

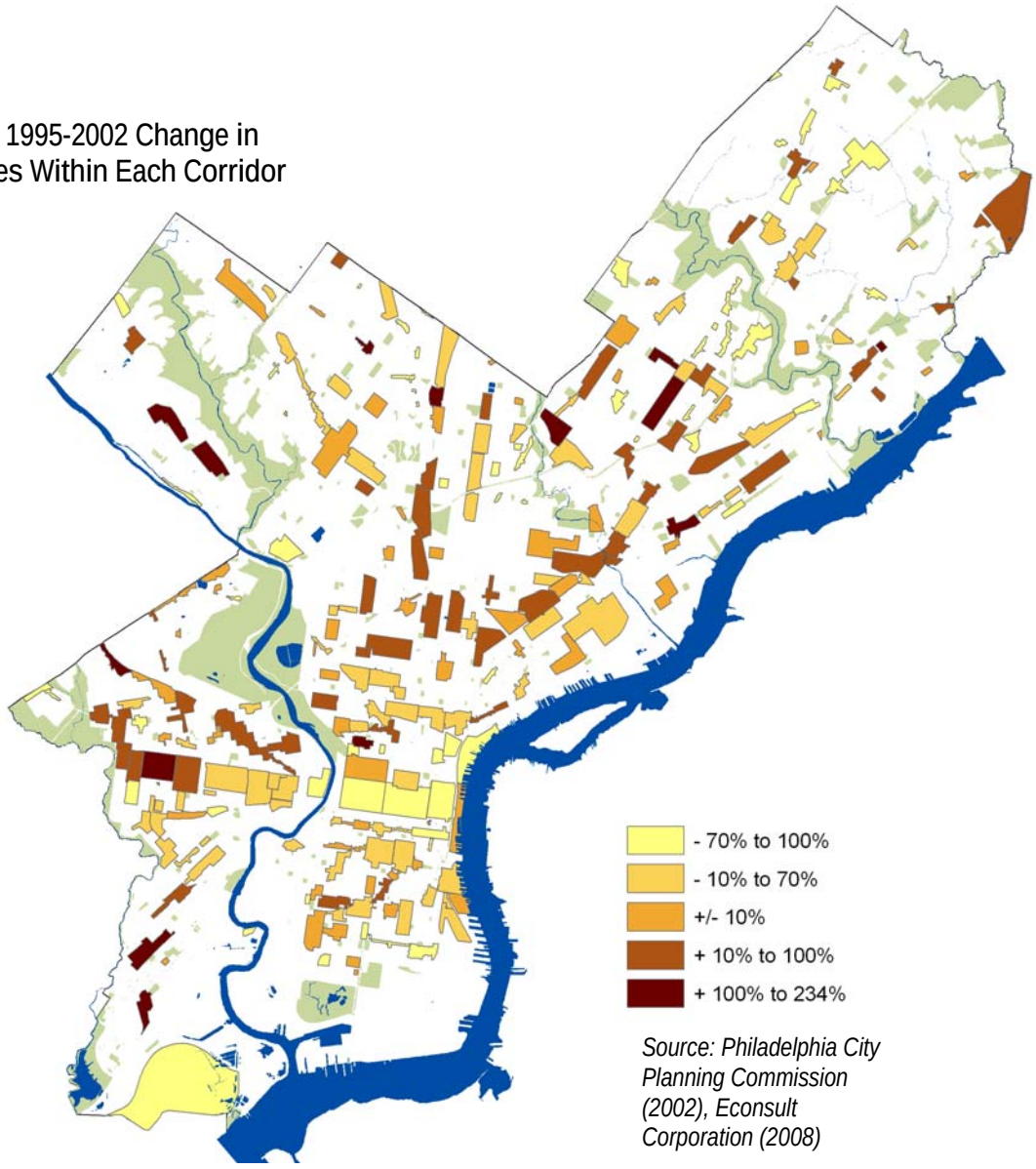
Figure 2.12 – 2002 Vacancy Rates Within Each Corridor



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

[19] See Appendix M for additional corridor characteristics maps and figures.

Figure 2.13 – 1995-2002 Change in Vacancy Rates Within Each Corridor



Source: Philadelphia City Planning Commission (2002), Econsult Corporation (2008)

2.11 Perceptions

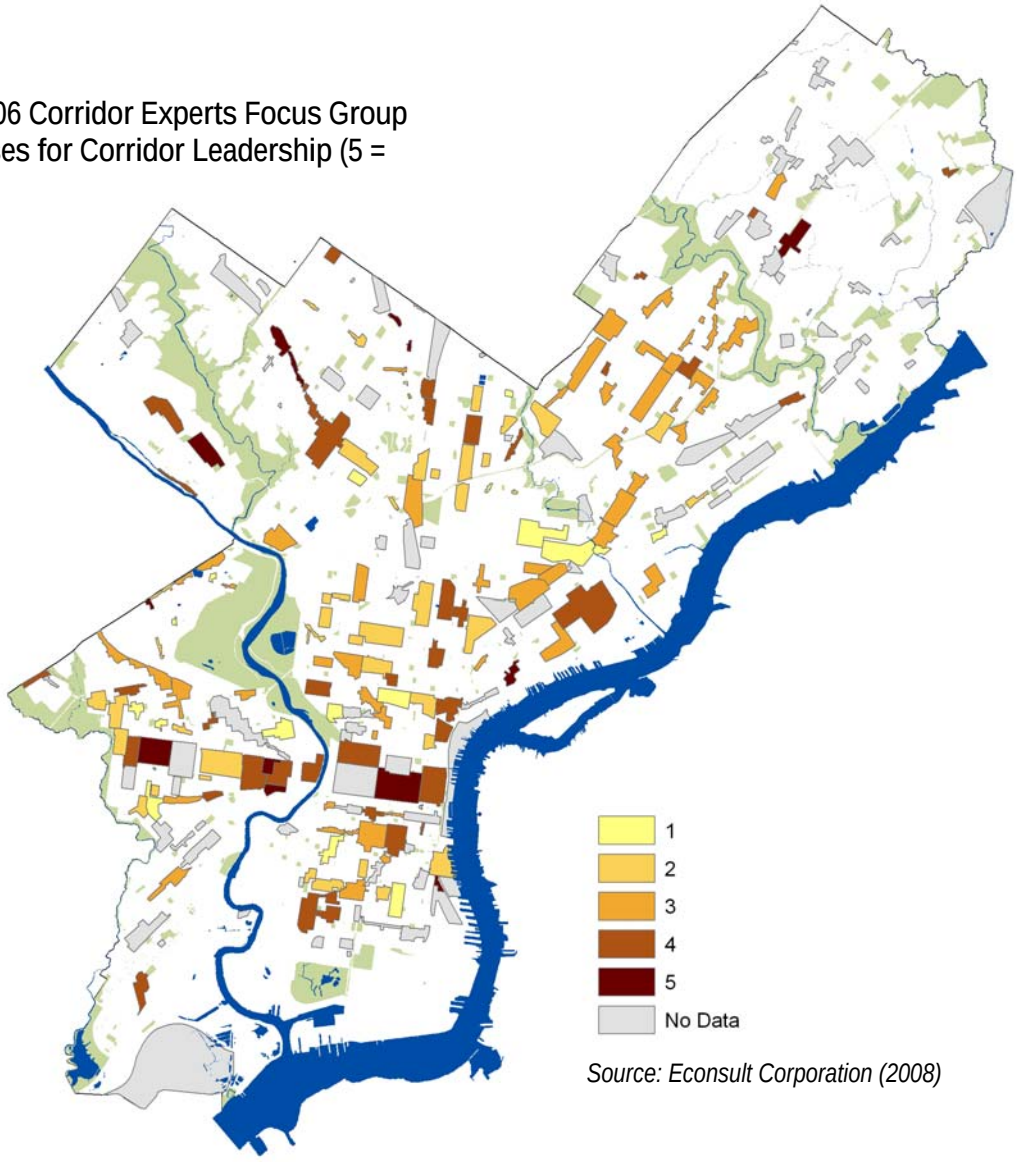
We augment PCPC data with the results of a survey of corridor experts that we conducted in Fall 2006, in which we asked about cleanliness and safety, corridor leadership, and store mix.

In October 2006, *we surveyed various public and private sector leaders* who were asked to evaluate corridors in the following categories: leadership, retail mix, cleanliness and safety,[20] non-financial importance to the immediate community, and overall health.[21] While the survey results certainly represent subjective opinions, they are still a useful proxy for the general perceptions of various corridors in Philadelphia. Note, for example, the pockets of strong leadership in Center City, Mt. Airy, West Oak Lane, and University City (see Figure 2.14). Notably, in this and other categories, insufficient knowledge of corridors on the periphery of the City prevented respondents from assigning scores. In the category of leadership, this also reflects the perception that these corridors do not have active leadership in the same way that other corridors nearer to Center City do.

[20] The cleanliness and safety of a corridor was found to be a primary element of shoppers' perceptions of successful vs. unsuccessful corridors, according to a recent survey that explored shopper satisfaction: "Urban Neighborhood Shopper Satisfaction Analysis: Surveys from in Five Low- to Moderate-Income Urban Neighborhoods," Market Knowledge (March 2008).

[21] This was one of two focus groups we convened, the other being with actual corridor practitioners. See Appendix N for notes from these two gatherings, and Appendix O for the experts' survey results by corridor.

Figure 2.14 – 2006 Corridor Experts Focus Group Survey Responses for Corridor Leadership (5 = outstanding)



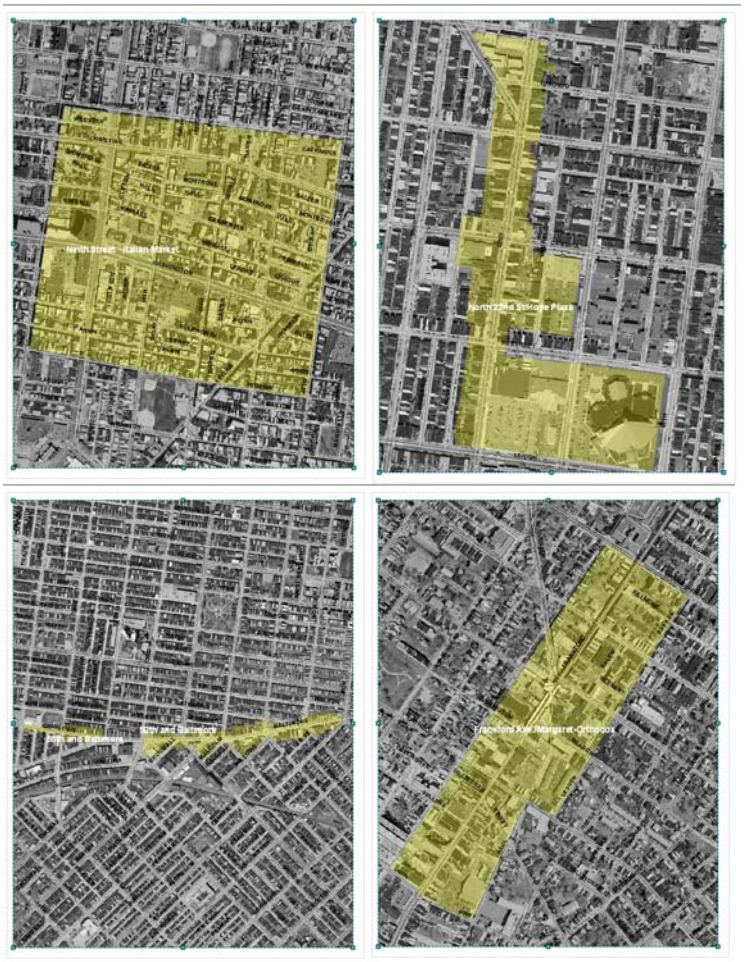
Source: Econsult Corporation (2008)

2.12 Corridor-Level Perspective

At times throughout this report, we supplement our citywide visuals with *a look at what is taking place at the corridor level*. For example, here we profile the four corridors that were studied in our previous commercial corridors report with Pennsylvania Economy League in December 2003: Frankford Avenue between Margaret and Orthodox Streets, North 22nd Street (also known as Hope Plaza), Baltimore Avenue between 48th and 56th Streets, and Washington Avenue between 6thand 12th Streets (also known as the Italian Market) (see Figure 2.15).

Throughout the report, we take a closer look at the four corridors that were studied in our 2003 report: Frankford Avenue, North 22nd Street, Baltimore Ave, and Washington Avenue/Italian Market

Figure 2.15 – Location of Four Corridors Analyzed in December 2003 Study



Source: Econsult Corporation (2003)

It is at this corridor level of perspective that a number of interesting characteristics and trends can be more appropriately observed. A quick look at the four corridors featured in our December 2003 study, for example, offers some interesting windows into the evolution and plight of corridors in recent years (see Figure 2.16 and Figure 2.17):

- *Frankford Avenue between Margaret and Orthodox Streets.* The New Kensington CDC has been hard at work to transform the area into an arts corridor, which has been well-received by residents and businesses alike, and may contribute to the reversal of a once-declining retail corridor.[22] The corridor is also the most transit-oriented of the group.
- *North 22nd Street.* Hope Plaza is an example of an adaptive reuse of an older corridor, in terms of refreshing the infrastructure and retail mix from a neighborhood development standpoint.
- *Baltimore Avenue between 48th and 56th Streets.* The eastern portions of this corridor are responding to changes in the University City neighborhood west of the University of Pennsylvania campus, in terms of store mix and infrastructure investment. These changes have not appeared to be as substantial along the western portions of this corridor.
- *Washington Avenue between 6thand 12th Streets.* The Italian Market area has experienced tremendous growth in its Asian and Hispanic populations, with resulting impact on retail offerings in this area; it is also a rapidly gentrifying neighborhood, as evidenced by soaring house prices.

Figure 2.16 – 2002 PCPC Characteristics of Four Corridors Analyzed in December 2003 Study

	Frankford Avenue	*North 22nd Street*	*Baltimore Avenue*	*Washington Avenue*
Type	Community Center	Community Center	Neighborhood Center	Specialty
Character	Pedestrian/Transit	Mixed	Pedestrian/Transit	Free-Standing
Decade of Initial Development	1900	1900	1920	1970
Stage of Development	Declining	Redeveloping	Stable	Stable

[22] "Frankford Avenue Arts Corridor - Corridor Plan," New Kensington Community Development Corporation (November 2004).

	Frankford Avenue	*North 22nd Street*	*Baltimore Avenue*	*Washington Avenue*
Store Mix (Change Since 1995)	Fair (No Change)	Excellent (Increased)	Good (No Change)	Fair (No Change)
Vacancy Rate	34%	17%	33%	16%
Parking Spaces / 1000 SF	0.90	1.61	1.54	1.53
Commercial Space (000 SF)	547	231	140	454

Source: Philadelphia City Planning Commission (2002)

Figure 2.17 – 2002 Experts Survey Results of Four Corridors Analyzed in December 2003 Study

	Average for All Corridors	*Frankford Ave.*	*North 22nd Street*	*Baltimore Ave.*	*Washington Ave.*
Perception of corridor leadership	3.0	3	2.5	4	3
Perception of the efficacy of recent interventions	2.9	3	3	3	4
Perception of cleanliness and safety	3.0	2	2.5	3	2
Perception of the non-financial importance of the corridor to its immediate neighborhood	3.2	5	2.5	4	5
Perception of the corridor's overall health	3.1	3	2	3	4

Source: Econsult Corporation (2007)

3.0 NEIGHBORHOOD CHARACTERISTICS

3.1 Overview

We describe the neighborhoods near each corridor by looking at a number of characteristics: anchor institutions, transit accessibility, crime, demographics, home lending, and foreclosure.

In addition to considering the characteristics of the commercial corridors themselves, we have assembled data on the characteristics of their surrounding neighborhoods. These data are likely to have implications for the success of the corridor, both in terms of shoppers represented in these neighborhoods as well as the extent to which outside shoppers are attracted to or repelled from certain neighborhoods based on the perceptions of its characteristics. There are distinct spatial patterns in these data, and they are one set of factors to be considered when assessing the performance of corridors and the system of retailing in the City.

- We begin by noting the proximity of each corridor to *various amenities and anchor institutions*. We calculate each corridor's distance to Center City, rivers, and parks. We also count the number of nearby universities, hospitals, health centers, tourist attractions, banks, and arts organizations. These locational characteristics help describe the neighborhoods in which various corridors are located.

- We also consider *the transit accessibility* of various neighborhoods around corridors. We locate various lines and stations to determine the transit accessibility to and from each corridor. We also note where these characteristics have changed over time, in terms of service additions and subtractions, strikes, and major reconstructions.

- Of course, *crime is* an important attribute of a neighborhood. Therefore, we map crime by year and by police sub-sector, as provided by the Philadelphia Police Department, and from there calculate the amount of crime that has taken place each year near each corridor.

- We then turn to US Census Bureau data to define these neighborhoods from a *demographic* standpoint. We assign data to corridors by adding or averaging data for each block group within a quarter-mile of each corridor. This approach enables a reasonably accurate view of the income, race, and other characteristics of a neighborhood.

- *Home lending data has* proven to be a useful measure of a neighborhood's economic condition in similar research. Information made available by the Home Mortgage Disclosure Act (HMDA) provides census tract level information on the characteristics of loan applicants in neighborhoods each year, and can thus be assigned to corridors to provide a year-by-year description of neighborhoods in this regard.

- Finally, because of Federal Deposit Insurance Corporation (FDIC) data, we can map when and where there are *foreclosures*. Thus, we can understand this important data point across time and geography.

3.2 Proximity to Amenities and Anchor Institutions

As is the case with all of these corridor attributes in Chapters 2 through 5, the goal in looking at each data set is to more richly describe corridors in Philadelphia. Also, we are interested in identifying all possible variables that may strongly correlate, either positively or negatively, with corridor success.

We are interested in knowing how many various amenities and anchor institutions each corridor is near, to the extent that they may represent drivers of foot traffic and therefore retail activity, arts organizations, and banks.

We begin with *a corridor's proximity to amenities and anchor institutions*, to the extent that they may or may not represent drivers of foot traffic and therefore retail activity (see Figure 3.1). We calculated each corridor's distance to Center City, the Delaware River, and the Schuylkill River. We also determined how much park space was near each corridor.

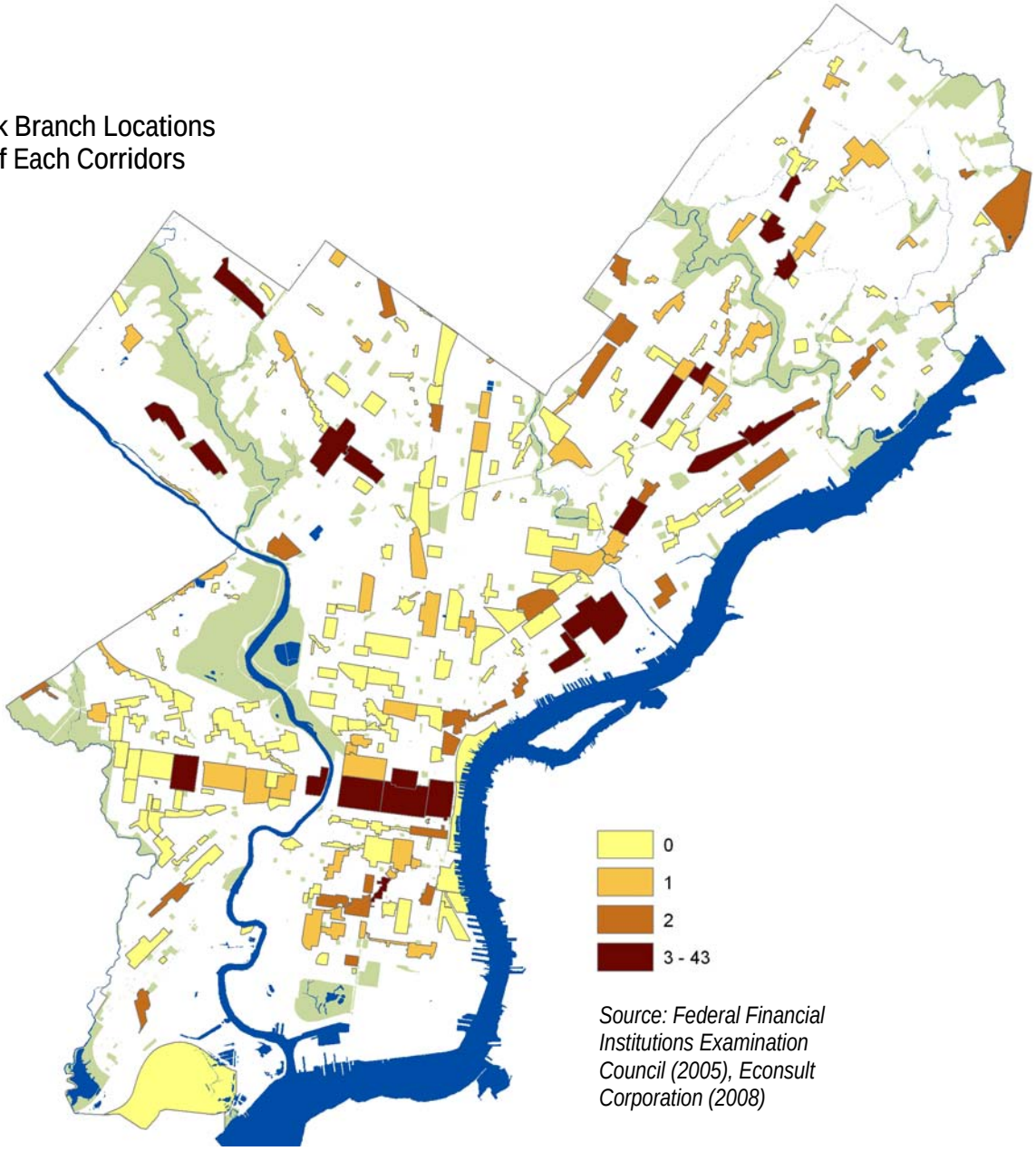
Figure 3.1 – Anchor Institutions Included in Characterizing Neighborhoods

Institution Type	*Definition / Source*
Universities	Major universities only
Hospitals	Major hospitals only
Health centers	City of Philadelphia Department of Health District Centers
Tourist attractions	Top tourist attractions by number of visitors (Philadelphia Business Journal, 2007)
Arts Organizations (see Figure 3.X)	Members of the Greater Philadelphia Cultural Alliance
Banks (see Figure 3.X)	Federal Deposit Insurance Corporation
Park Space	Fairmount park System

As for anchor institutions, we counted the number of each type within or near each corridor. Not surprisingly, many of the locations of these types of institutions are clustered in and around Center City, particularly arts organizations and banks. Therefore, in our analysis we account for this "Center City effect" so we can effectively isolate the impact of the institutions themselves."[23]

[23] See Appendix P for additional maps of corridors and anchor institutions.

Figure 3.2 - Bank Branch Locations within 1/2 Mile of Each Corridors



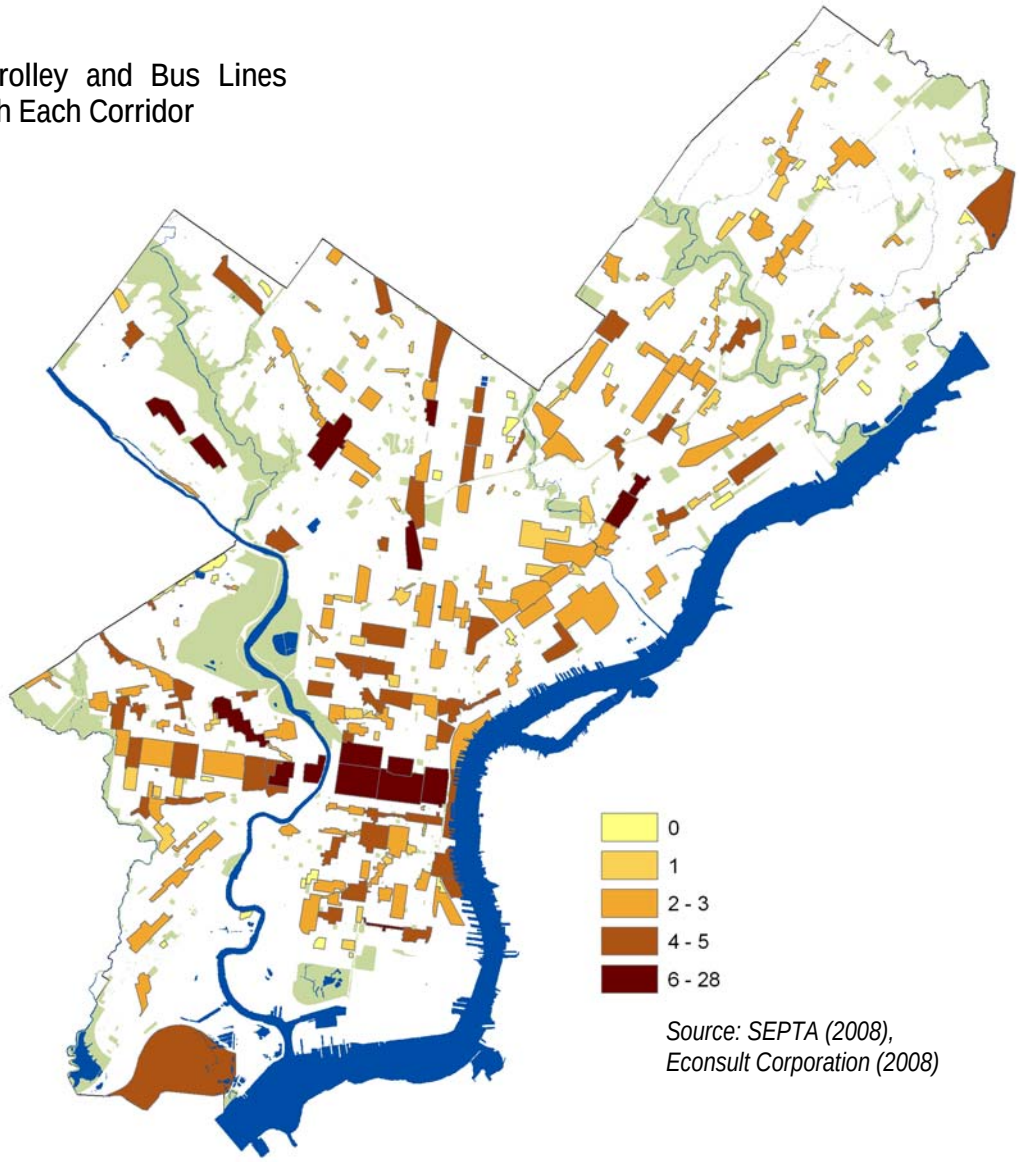
Source: Federal Financial Institutions Examination Council (2005), Econsult Corporation (2008)

3.3 Transit Access

We also consider *the transit accessibility of various neighborhoods around corridors*, since accessibility plays an important role in a shopper's choice of mode of travel and of shopping destination. We locate various lines and stations, and calculate the frequency of the trips, to determine the transit accessibility to and from each corridor. We also note where these characteristics have changed over time, in terms of service additions and subtractions, strikes, and major reconstructions (see Figure 3.3). To the extent that mobility affects shopper choice, transit access can play a huge role in the success of a corridor; furthermore, the station themselves can be amenities or disamenities.

We are interested in knowing how much transit access each corridor has, as well as the location of Philly Car Share pods, to the extent that accessibility influences a shopper's choice of destination.

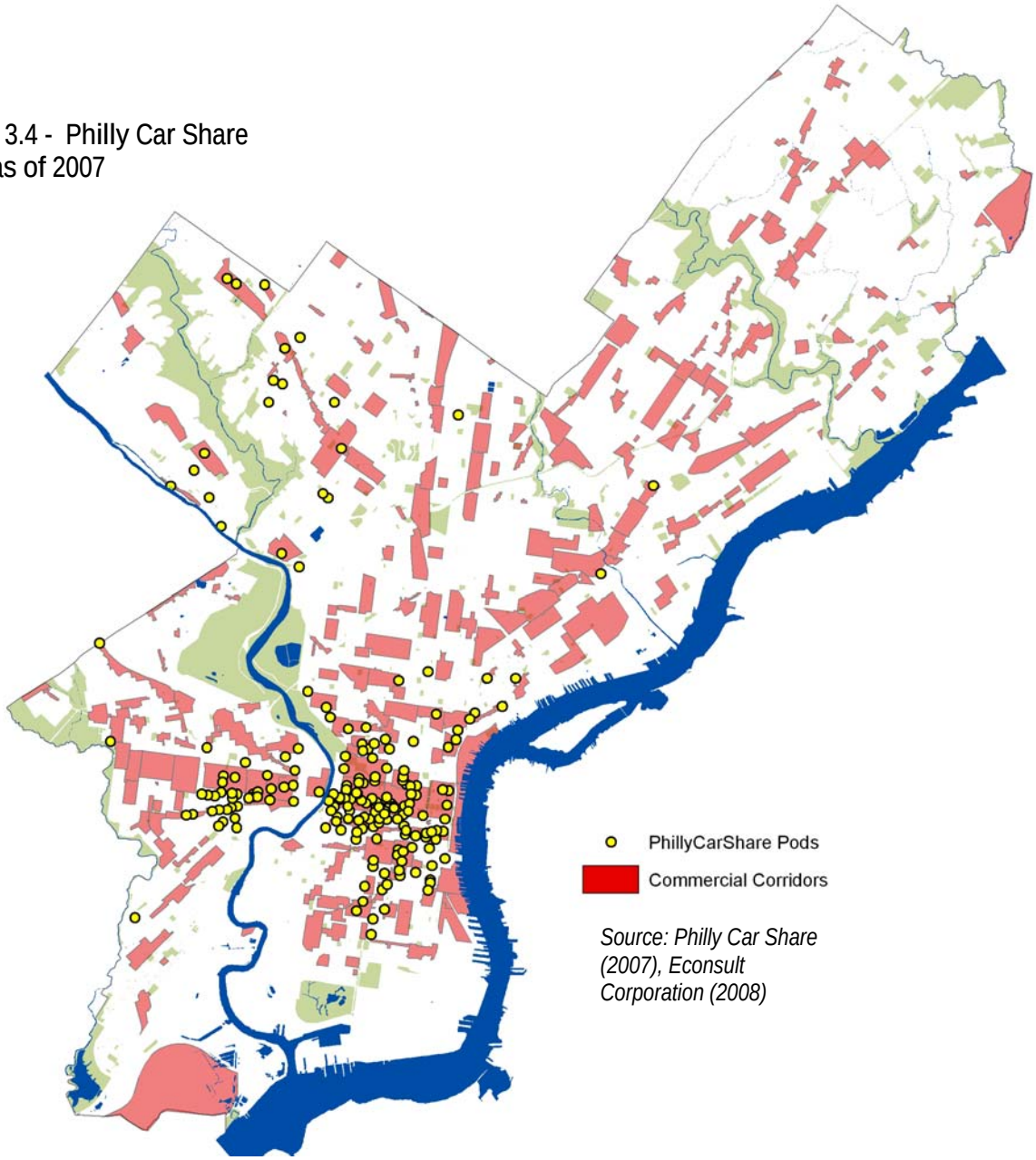
Figure 3.3 – Trolley and Bus Lines Passing Through Each Corridor



Source: SEPTA (2008), Econsult Corporation (2008)

Importantly, an increasingly popular form of transportation in Philadelphia is Philly Car Share, whereby members pay per hour for vehicles that are parked throughout the City (see Figure 3.4). As more "pods" are added, this service becomes more convenient for all manner of uses, including shopping. Therefore, we consider the role of Philly Car Share pods on retail patterns in the City. For now, we note the density of pods in Center City, University City, and South Philadelphia, consistent with what we would expect based on data on car access and automobile orientation.

Figure 3.4 - Philly Car Share Pods as of 2007



Source: Philly Car Share (2007), Econsult Corporation (2008)

3.4 Crime

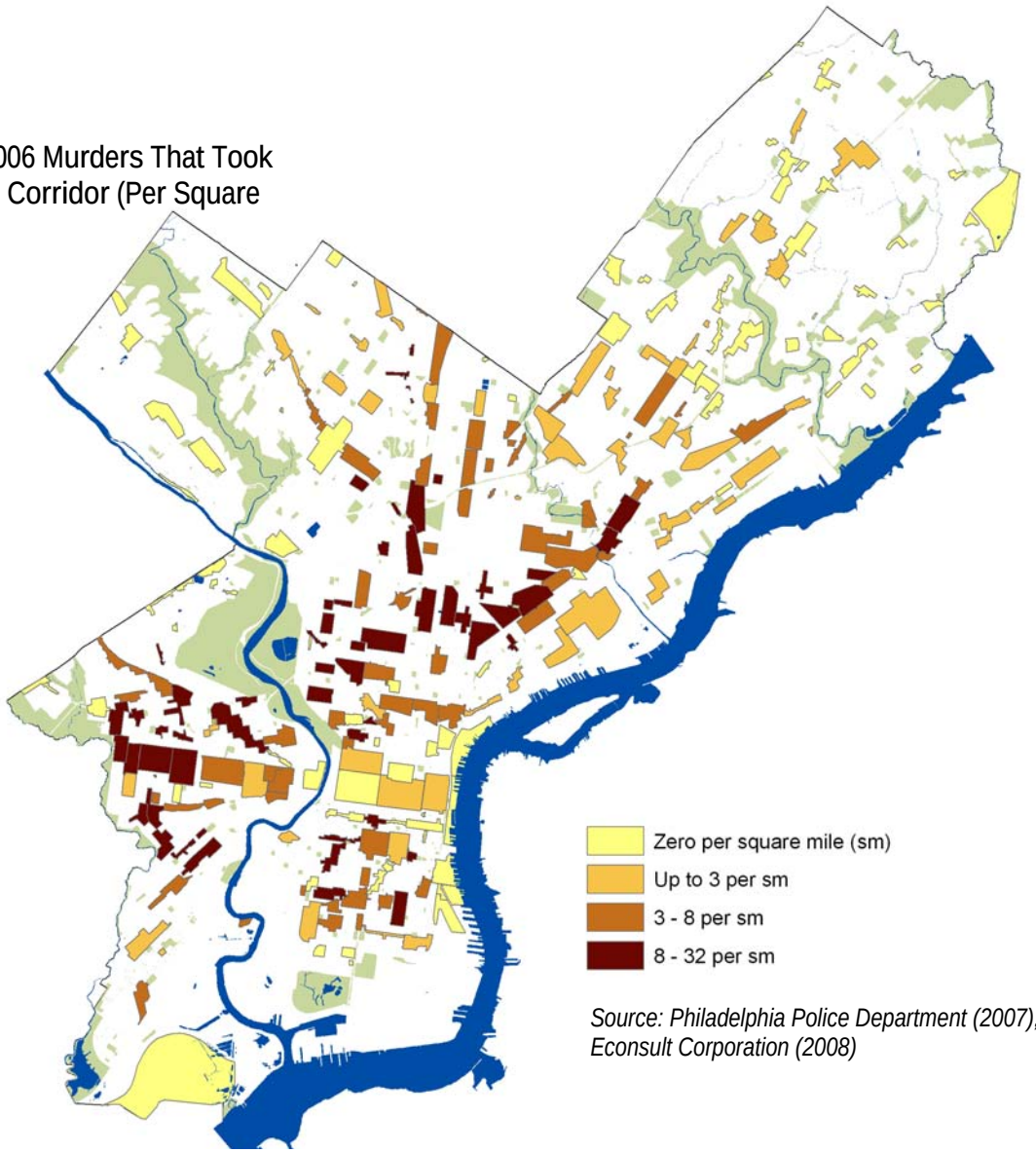
We are interested in knowing how much crime took place near each corridor, to the extent that shoppers are influenced by perception of crime.

We purchased annual counts of the following crimes from the Philadelphia Police Department (PPD), aggregated to the police sub-sector level: murders, rapes, robberies, aggravated assaults, burglaries, thefts, and auto thefts (see Figure 3.5 and Figure 3.6), we also downloaded data from the University of Pennsylvania's Cartographic Modeling Lab (CML), aggregated to the Census block group level.[24] Our goal was to understand *the spatial distribution of crime near corridors*, and to test its correlation to corridor success, since it is likely that shoppers are influenced by perception of crime. The maps seem to suggest that North Philadelphia and West Philadelphia have higher occurrences of crime activity, and that there have been a number of parts of the City where crime has gone up or down significantly over the past decade.[25]

[24] CML data does not include murders and rapes; because of the ongoing investigative nature of these crimes, their counts are not made available by PPD to CML. There are also differences in the way PPD and CML define auto theft. Due in part to these data constraints, in our analysis we found that aggravated assaults were the best proxy for accounting for the effect of crime at the corridor level.

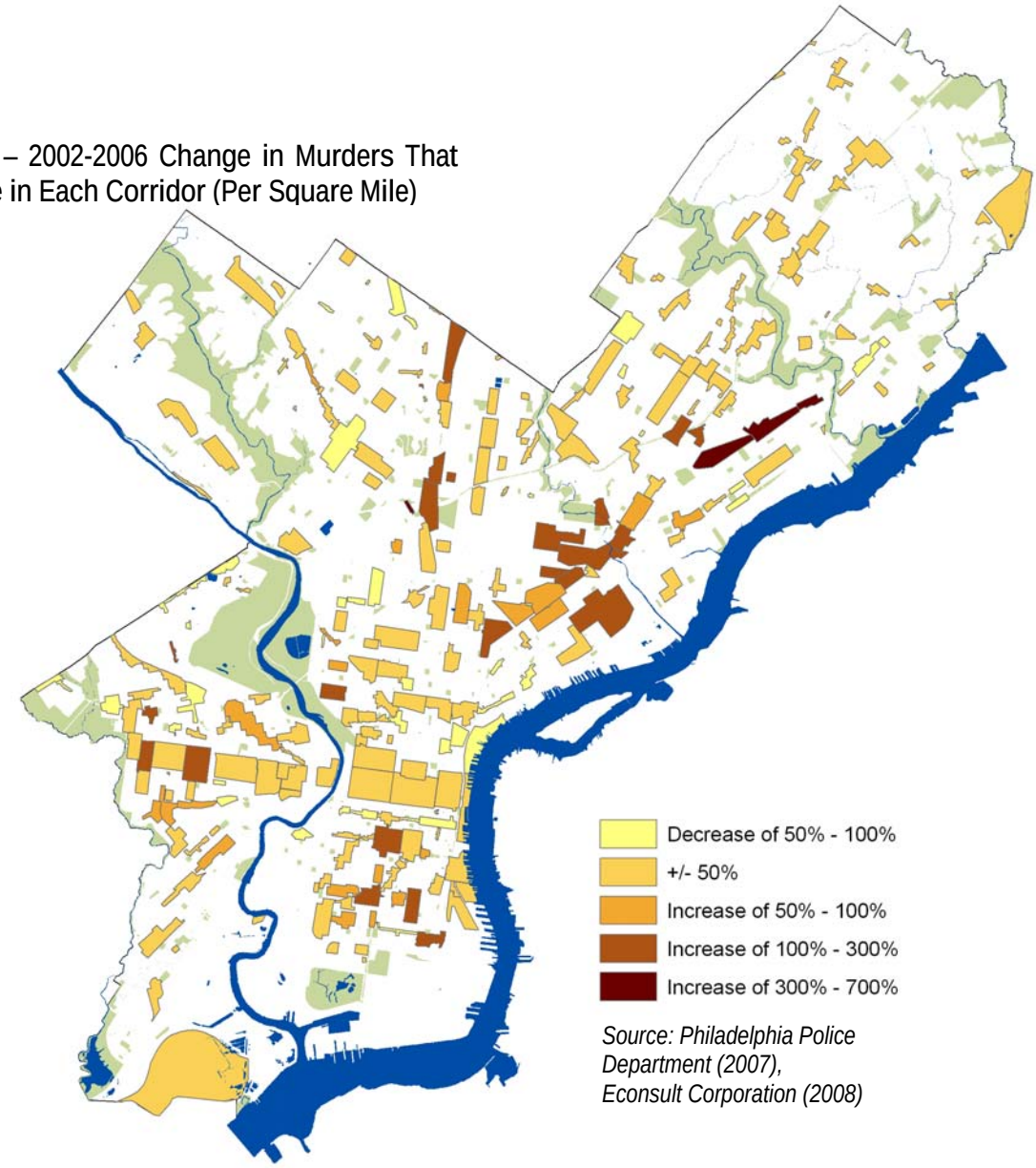
[25] See Appendix Q for additional maps or corridors and crime.

Figure 3.5 - 2006 Murders That Took Place in Each Corridor (Per Square Mile)



Source: Philadelphia Police Department (2007), Econsult Corporation (2008)

Figure 3.6 – 2002-2006 Change in Murders That Took Place in Each Corridor (Per Square Mile)



Source: Philadelphia Police Department (2007), Econsult Corporation (2008)

This crime data can also be compared with peoples' perception of safety at the corridor level. To explore this connection, we determined the correlations between corridors' score on safety in our experts' survey with actual crime activity. The correlations are almost all negative, suggesting that the more crime that occurs within a corridor, the lower that corridor will be rated in terms of safety, which makes sense. Murder, rape, and aggravated assault are the three crime categories that have the most negative effect on a corridor's perception, which also makes sense (see Figure 3.7).

We also can correlate actual crime data with perception of crime; not surprisingly, murder, rape, and aggravated assault have the most negative effect on corridor perception.

Figure 3.7 – Correlation of 2006 Crime Data vs. 2006 Focus Group Survey of Cleanliness and Safety

Crime Category	*Correlation to PPD Data*	*Correlation to CML Data*
Aggravated Assault	-0.39	-0.37
Auto Theft	-0.21	-0.17
Burglary	-0.22	-0.21
Graffiti	N/A	0.01
Murders	-0.31	N/A
Narcotics	N/A	-0.018
Rape	-0.36	N/A
Robbery	-0.24	-0.25
Theft	0.03	-0.01
Vandalism	N/A	-0.21

Source: Philadelphia Police Department (2007), University of Pennsylvania Cartographic Modeling Lab (2007)

3.5 Demographic Characteristics

We are interested in knowing the various demographic characteristics of neighborhoods near each corridor, to the extent that shopper choice may depend both on racial/ethnic, age, and income characteristics of the shopper and of various locations he or she chooses.

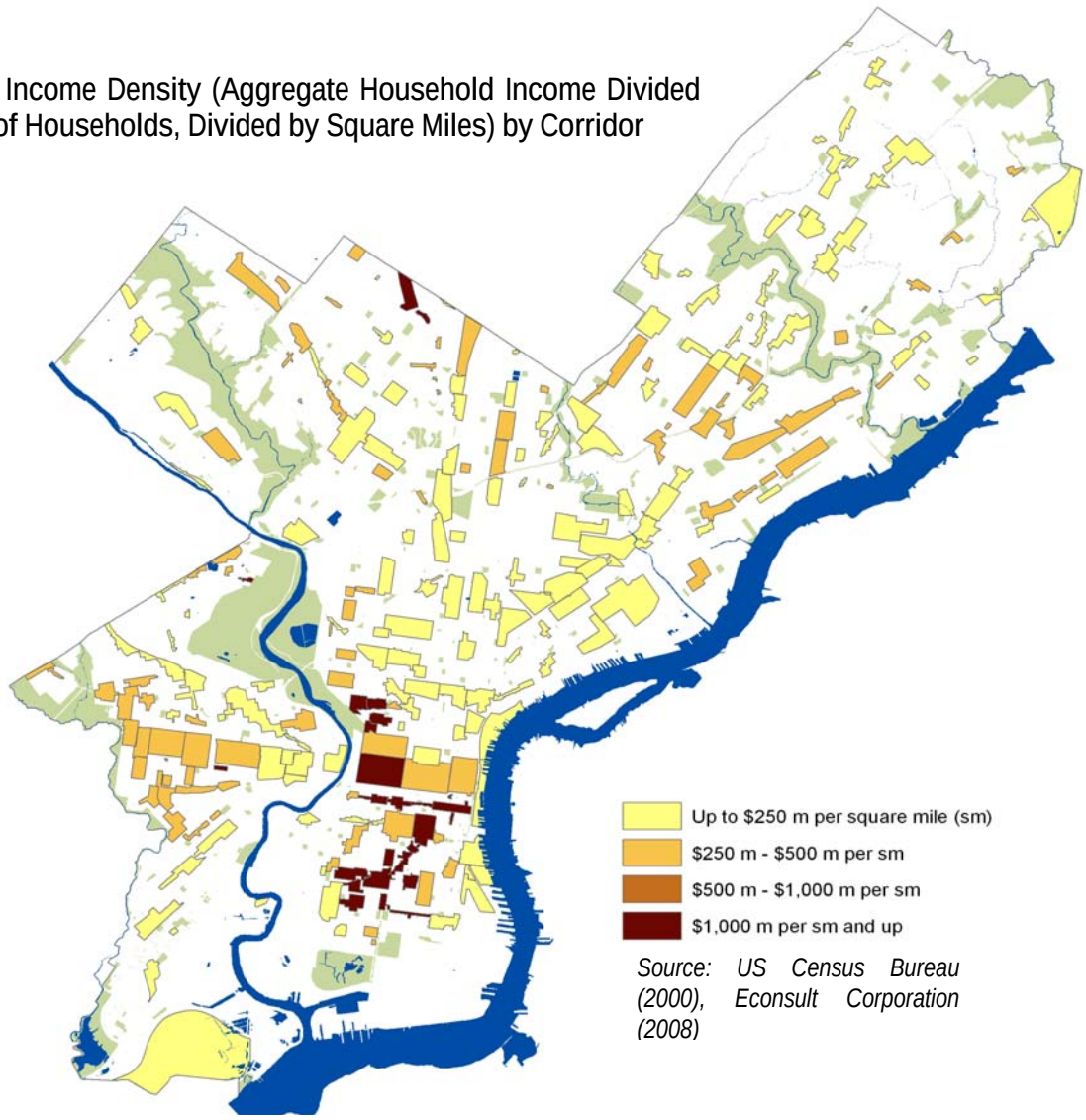
The demographic and economic characteristics of a neighborhood are doubly important to a study of commercial corridors: shopper choice may depend on the characteristics of the shopper, and it may depend on the characteristics of the various locations he or she chooses. Therefore, we mapped various demographic and economic information that is available from the US Census Bureau. Again, these visuals offer a distinct understanding of the spatial distribution of important demographic and economic categories, and lay the groundwork for the econometric analysis that will be further discussed later in the report.

Specifically, we mapped a number of neighborhood characteristics, all of which have some relevance to understanding corridors (see Figure 3.8 and Figure 3.9).[26] These snapshots provide a demographic and economic backdrop to understand what is taking place in the neighborhoods around our corridors. They also serve as a basis from which further econometric work can be performed, to determine where and how corridors respond to these big-picture demographic and economic shifts.[27]

[26] Since Census data is available at the block group level, we can convert that level of geography into corridors in the following manner: 1) share block group data down to the block level, 2) determine which blocks are within a corridor's boundaries, 3) accumulate the data from all such blocks to the entire corridor, weighting by land area.

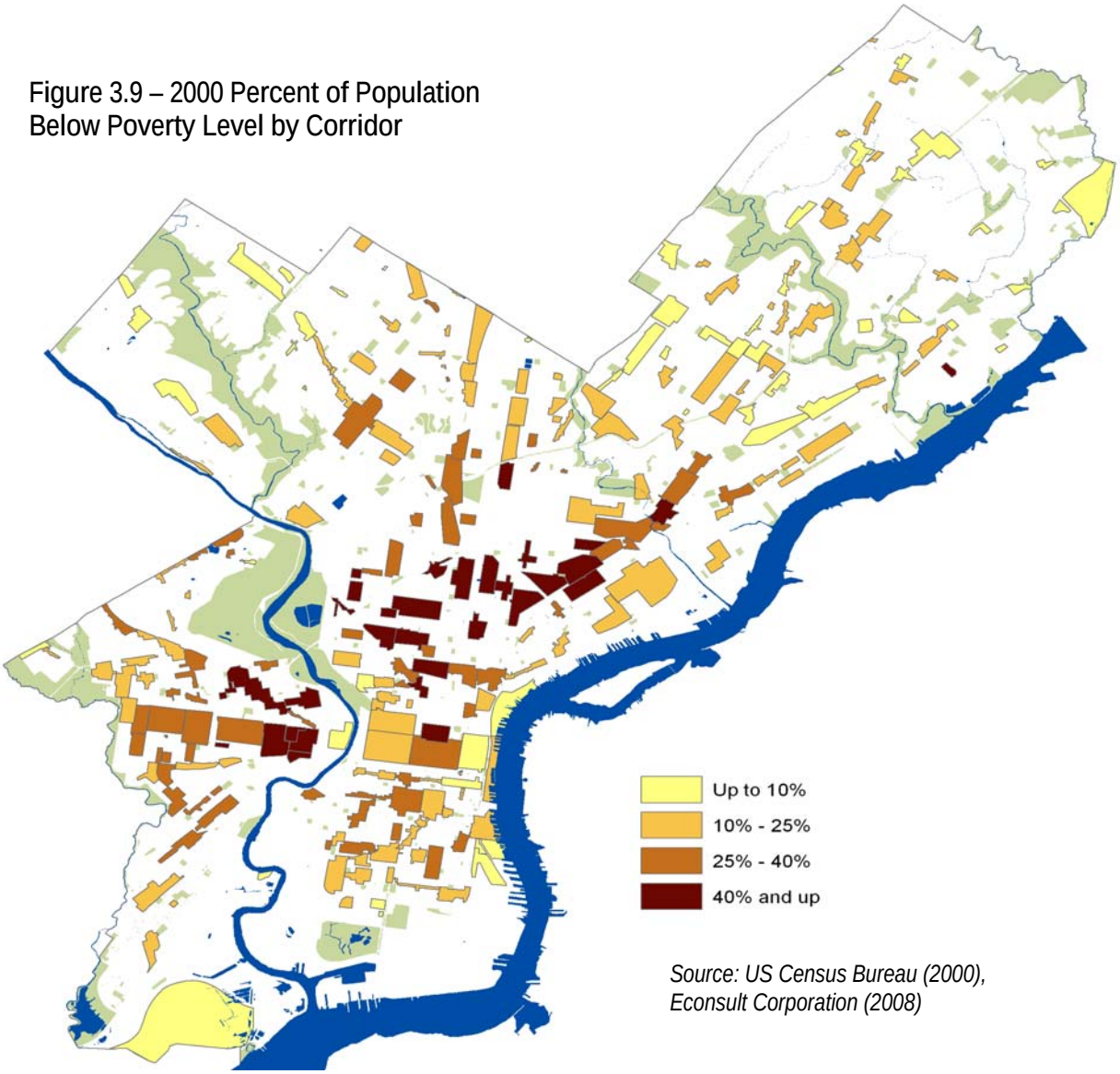
[27] See Appendix R for additional maps on corridors and demographic data.

Figure 3.8 - 2000 Income Density (Aggregate Household Income Divided by Total Number of Households, Divided by Square Miles) by Corridor



Source: US Census Bureau (2000), Econsult Corporation (2008)

Figure 3.9 – 2000 Percent of Population Below Poverty Level by Corridor



Source: US Census Bureau (2000), Econsult Corporation (2008)

At the individual corridor level, let us again take a closer look at what is taking place at the census tract level for the four corridors analyzed in Econsult's December 2003 study of commercial corridors, as well as at two additional census tracts (see Figure 3.10). Note that all four of these corridors, none of them being primarily auto-oriented, are denser in population and income and have a lower percentage of people with access to a car than the city as a whole.

We can also depict these demographic characteristics at the single-corridor level.

Figure 3.10 – 2000 Demographic Information on Census Block Groups for Selected Corridors

Corridor	*Citywide*	*Frankford Avenue*	*North 22nd Street*	*Baltimore Avenue*	*Washington Ave*
Population Density	11,234/ sq. mi	16,976/ sq. mi	19,485/ sq. mi	25,094/ sq. mi	29,248/sq. mi
Income Density	$185MM/ sq. mi	$228MM/ sq. mi	$237MM/ sq. mi	$368MM/ sq. mi	$601MM/ sq. mi
Mean Household Income	$41,525	$34,810	$33,147	$40,805	$42,977
% Population Below Poverty Level	22.9%	28.6%	31.2%	24.1%	17.6%
% Population with Car Access	64.3%	46.3%	49.3%	54.6%	55.4%
% Population White	47.8%	36.8%	7.5%	10.4%	69.3%
% Population Black	40.2%	48.0%	96.7%	84.5%	7.7%
% Population Asian	3.5%	1.9%	0.6%	2.0%	18.7%
% Population Hispanic	6.5%	15.7%	1.5%	1.7%	4.6%

Corridor	*Citywide*	*Frankford Avenue*	*North 22nd Street*	*Baltimore Avenue*	*Washington Ave*
% Population Non-White	52.2%	63.2%	99.2%	89.6%	30.7%
% Population Under Age 18	25.3%	30.8%	30.4%	28.2%	14.4%
% Population Under Age 35	51.1%	57.4%	51.0%	52.2%	43.7%
% Population Over Age 65	14.1%	9.8%	13.5%	10.3%	17.4%
% Foreign-Born	9.0%	6.5%	0.7%	4.8%	21.3%
% Population With Less Than High School Diploma	21.3%	15.4%	17.4%	8.9%	18.8%
% Population With High School Diploma Only	33.3%	21.1%	23.0%	21.8%	18.6%
% Population With Bachelor Degree or More	17.9%	4.2%	1.5%	5.7%	13.8%

Source: US Census Bureau (2000)

3.6 Home Lending Characteristics

Home lending data is a useful determinant in characterizing neighborhoods, to the extent that it can identify racial/ethnic and income changes across space and time

Home lending data has been demonstrated to be a very useful determinant in characterizing neighborhoods, because it is available on an annual basis, and changes in a neighborhood's demographic make-up can be picked up and isolated. For example, in seeking a small set of easily obtainable measures that capture multiple dimensions of neighborhood performance, George Galster of Wayne State University found that three of the four indicators were based on Home Mortgage Disclosure Act data.[28]

For confidentiality purposes, HMDA data is only available at the Census Tract level, and is therefore mapped accordingly. The aggregation of HMDA loan information to the tract level means that the matching of the HMDA data to specific corridors is necessarily imperfect, but the advantage of observing neighborhood changes over time in applicant income, loan denial rate, subprime lending, applicant race and applicant ethnicity is very useful. Specifically, we consider the following depictions of HMDA data:[29]

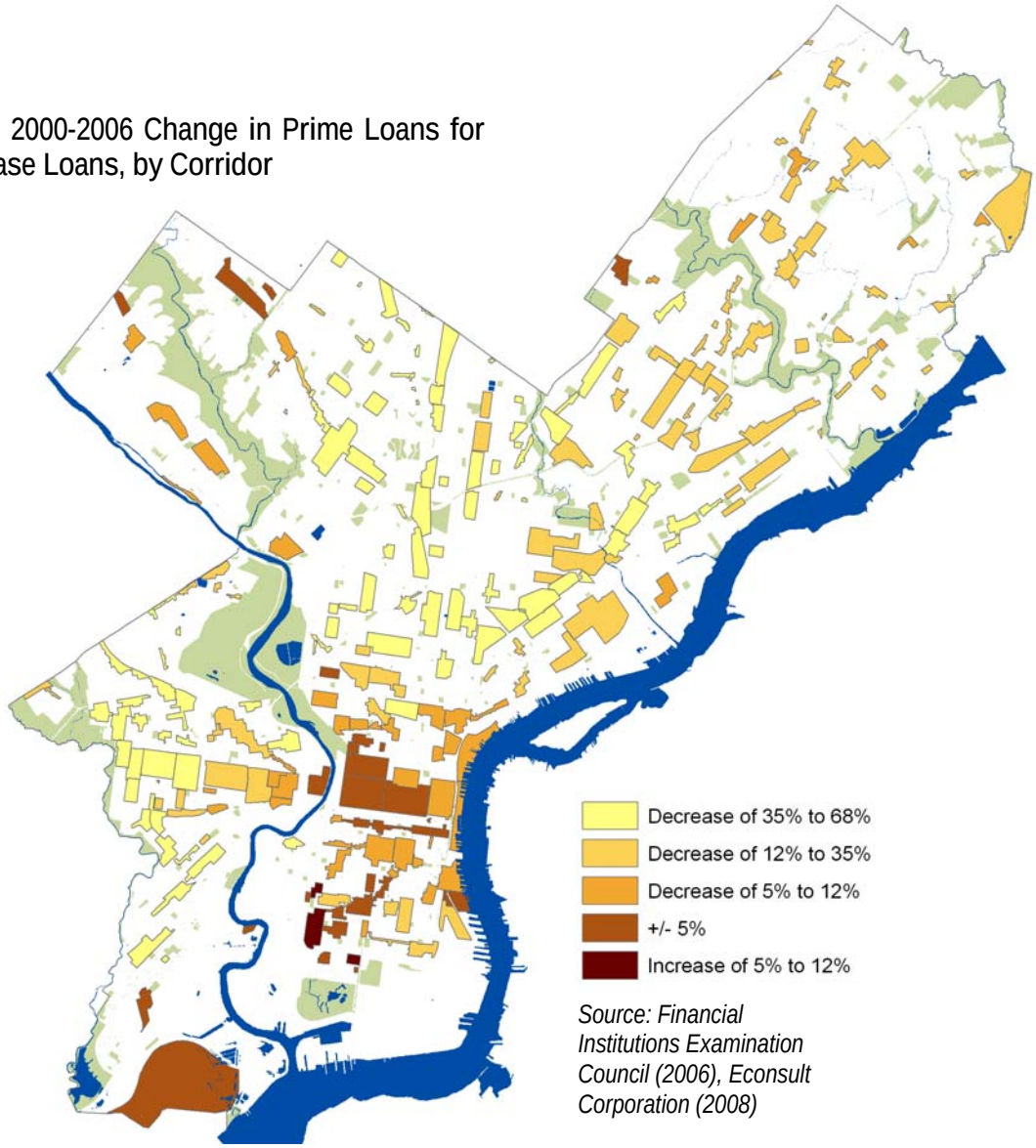
- 2000-2006 change in prime loans for home purchase loans (see Figure 3.11) – note the increases in Center City and South Philadelphia
- 2000-2006 change in subprime loans for home purchase loans (see Figure 3.12) – note the rapid growth citywide
- 2000-2006 change in mean income of owner-occupied borrower (see Figure 3.13) – note the rapidly gentrifying areas in Kensington and parts of South Philadelphia
- 2006 % of home purchase loans to non-whites (see Figure 3.14) – note the relatively high proportions in North and West Philadelphia[30]

[28] "Identifying Robust, Parsimonious Neighborhood Indicators," George Galster (2004).

[29] Since HMDA data is available at the Census Tract level, we can convert that level of geography into corridors in the following manner: 1) share tract level data down to the block level, 2) determine which blocks are within a corridor's boundaries, 3) accumulate the data from all such blocks to the entire corridor, weighting by land area.

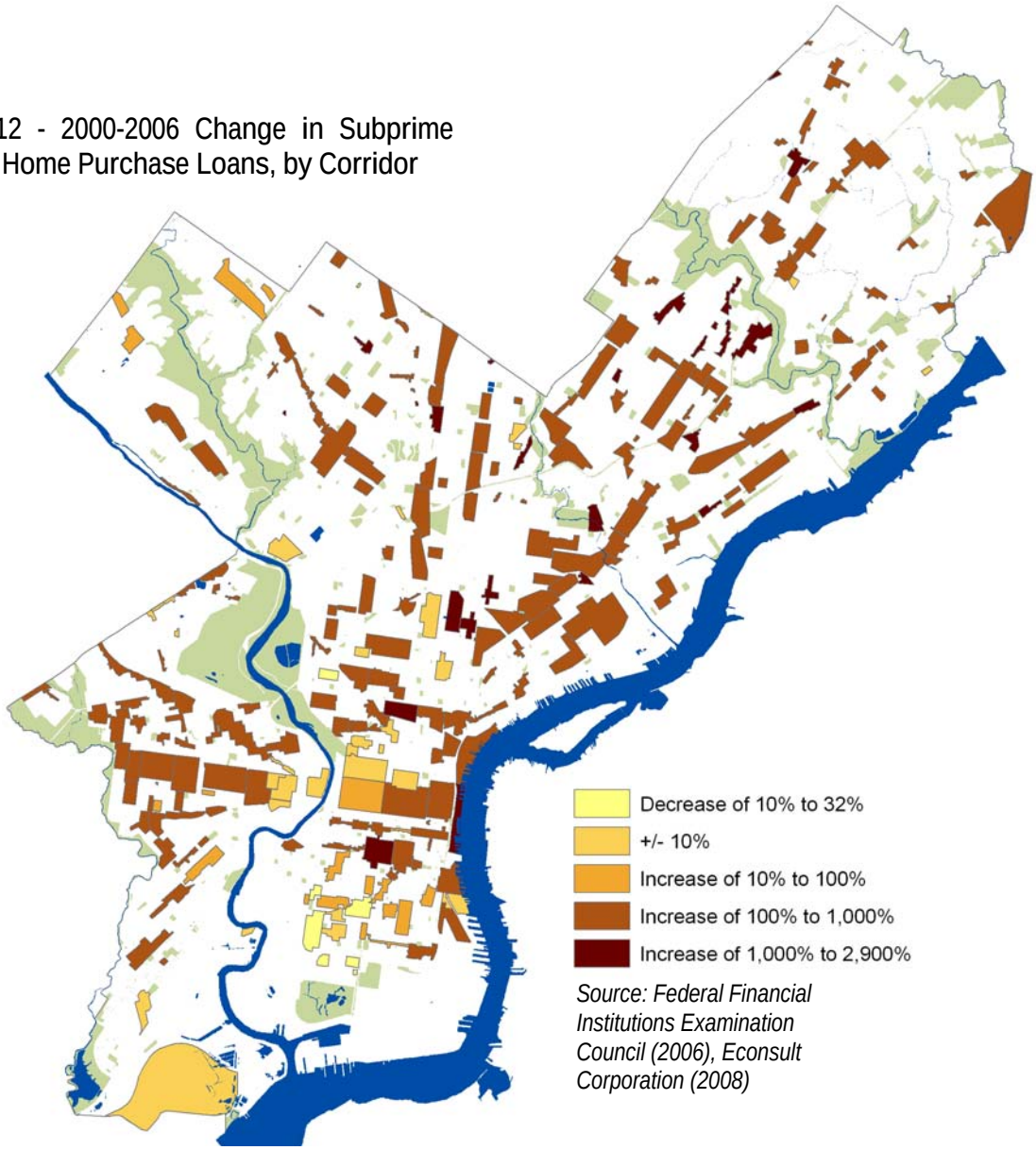
[30] See Appendix S for additional maps of corridors and home lending characteristics.

Figure 3.11 - 2000-2006 Change in Prime Loans for Home Purchase Loans, by Corridor



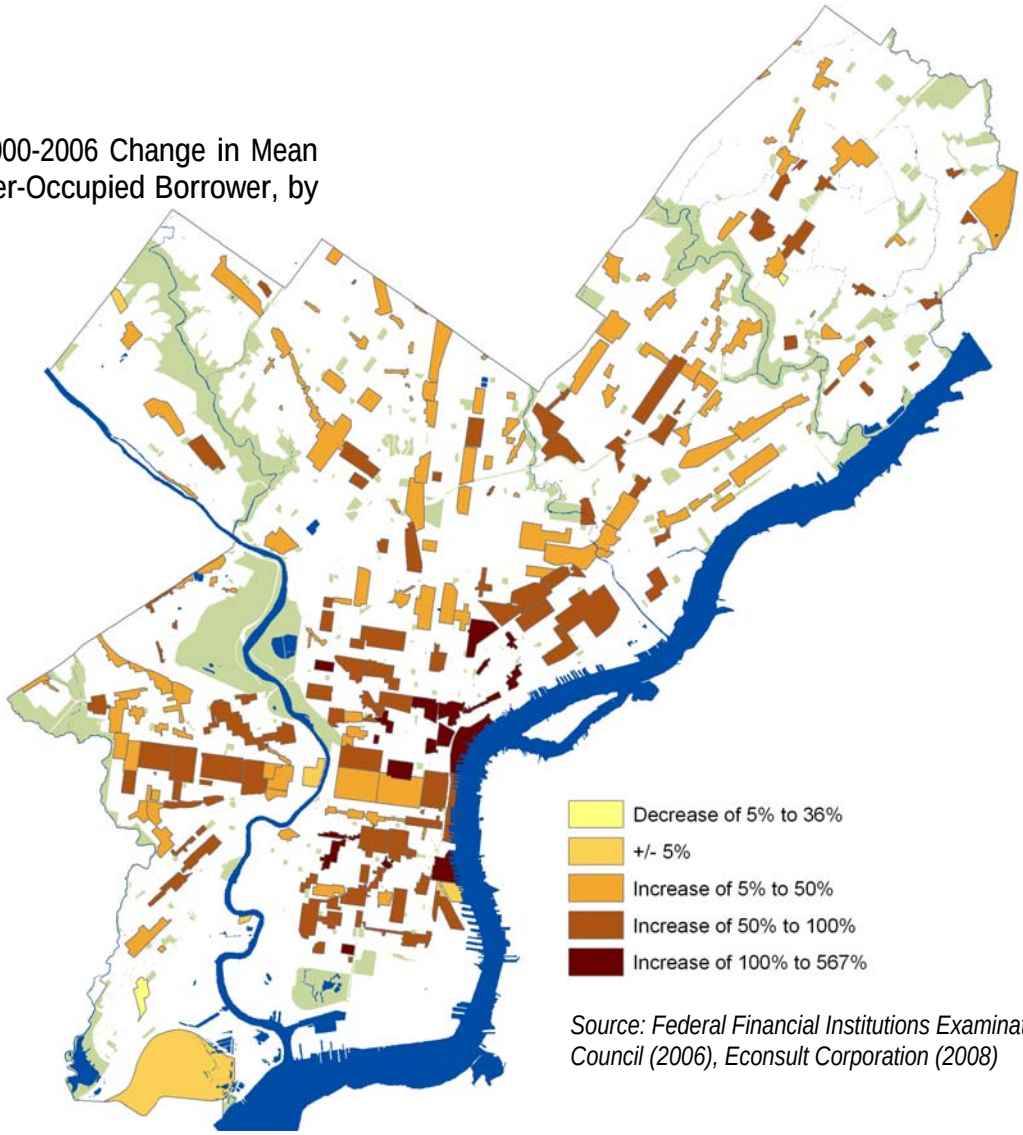
Source: Financial Institutions Examination Council (2006), Econsult Corporation (2008)

Figure 3.12 - 2000-2006 Change in Subprime Loans for Home Purchase Loans, by Corridor



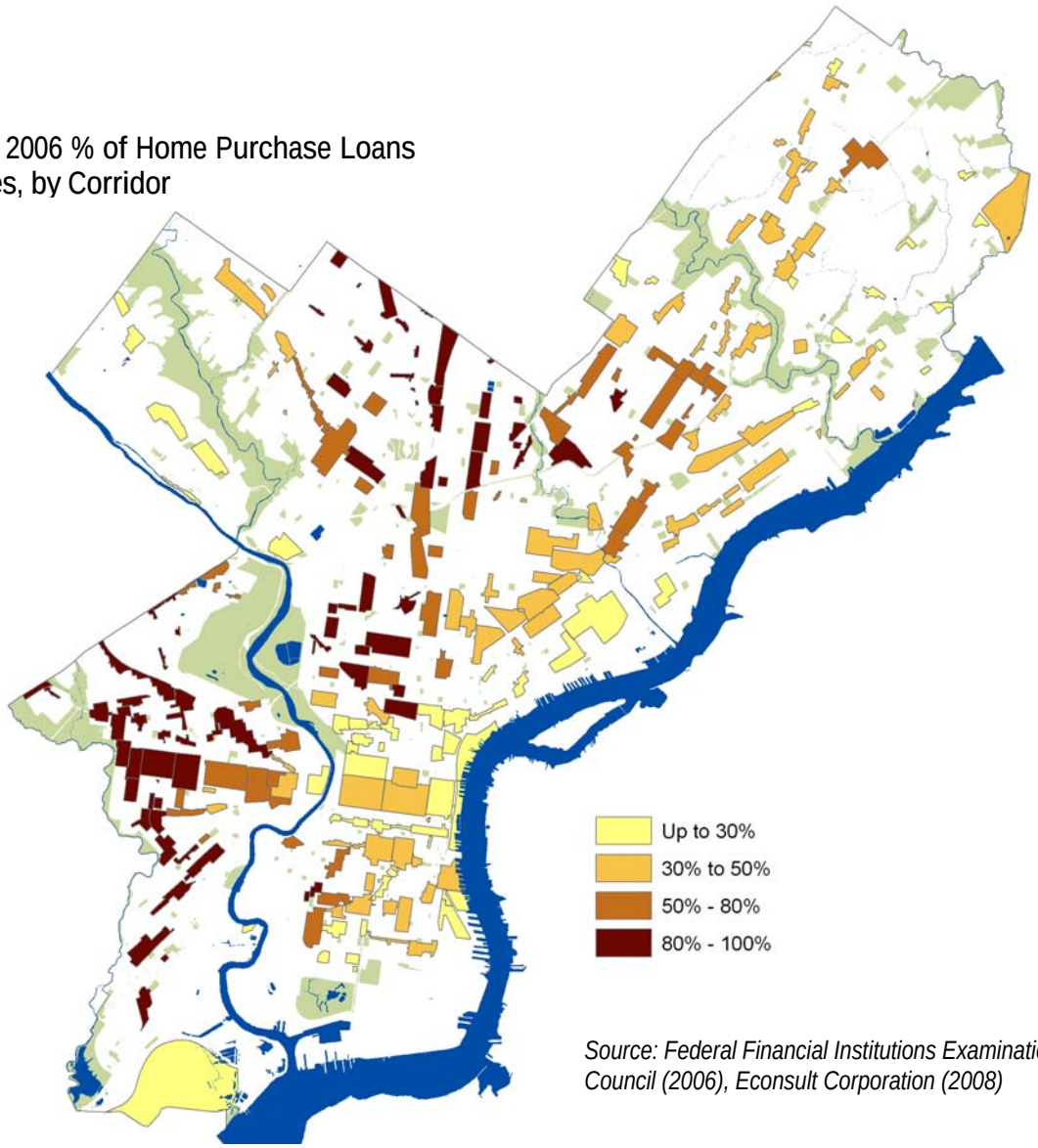
Source: Federal Financial Institutions Examination Council (2006), Econsult Corporation (2008)

Figure 3.13 - 2000-2006 Change in Mean Income of Owner-Occupied Borrower, by Corridor



Source: Federal Financial Institutions Examination Council (2006), Econsult Corporation (2008)

Figure 3.14 - 2006 % of Home Purchase Loans to Non-Whites, by Corridor



Source: Federal Financial Institutions Examination Council (2006), Econsult Corporation (2008)

These snapshots provide further clarity to the condition of neighborhoods around our corridors. To the extent that they depict important indicators of trends related to neighborhood economic health, they also serve as a basis from which further econometric work can be performed, to determine where and how corridors respond to these big-picture demographic and economic shifts.

We can also depict home lending characteristics at the single-corridor level.

At the individual corridor level, let us again take a closer look at what is taking place at the four corridors analyzed in Econsult's December 2003 study of commercial corridors; note in

particular the almost 100 percent increase in mean borrower income from 2000 to 2006 at the Washington Avenue Corridor (see Figure 3.15).

Figure 3.15 – 2000, 2006 Mortgage Information on Census Tracts for Selected Corridors

Corridor	*Citywide* *2006* *(2000)*	*Frankford Avenue* *2006* *(2000)*	*North 22nd Street* *2006* *(2000)*	*Baltimore Avenue* *2006* *(2000)*	*Washington Avenue* *2006* *(2000)*
Mean Income Among Owner-Occupied Loan Originations	N/A *(N/A)*	$45,629 ($30,810)	$37,570 ($25,761)	$71,035 ($42,847)	$85,545 ($43,339)
% Owner Occupied of Originated Loans	N/A *(N/A)*	63.2% (87.1%)	57.1% (88.4%)	72.6% (88.2%)	84.6% (88.1%)
% Owner-Occupied Originated Loans to Hispanics	9.1% *(N/A)*	5.2% (22.5%)	0.0% (0.0%)	1.5% (1.9%)	0.0% (3.9%)
% Loans to Whites	55.1% *(N/A)*	37.1% (18.3%)	17.2% (2.2%)	35.7% (27.4%)	69.7% (62.6%)
% Loans to Blacks	36.0% *(N/A)*	39.2% (40.1%)	68.8% (69.6%)	40.2% (48.4%)	5.4% (8.7%)
% Loans to Asians	8.6% *(N/A)*	3.1% (1.4%)	2.2% (0.0%)	3.0% (1.3%)	13.4% (17.4%)
% Loans Insured by FHA	N/A *(N/A)*	17.5% (59.9%)	6.5% (37.0%)	8.0% (22.3%)	6.4% (10.4%)
% Loans Subprime	35.9% *(N/A)*	47.9% (7.7%)	47.3% (13.0%)	31.7% (12.1%)	8.7% (1.7%)
% Loans Prime	64.1% *(N/A)*	52.1% (92.3%)	52.7% (86.7%)	68.3% (87.9%)	91.3% (98.3%)
% Denial Rate	22.4% (21.3%)	29.9% (25.7%)	37.4% (34.4%)	27.1% (23.7%)	18.6% (26.4%)

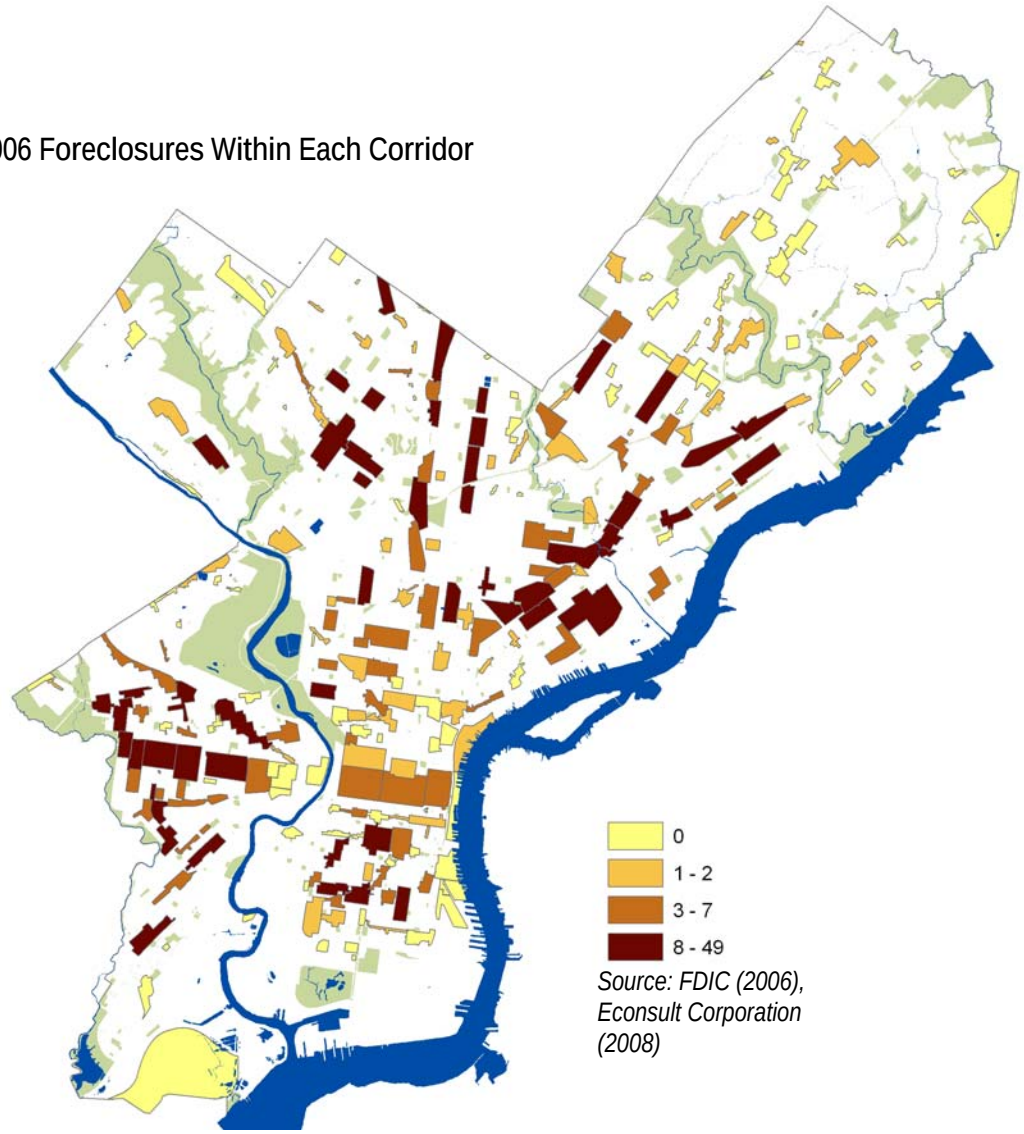
Source: Federal Financial Institutions Examination Council (2005)

3.7 Foreclosures

Related to HMDA home lending data in characterizing a neighborhood is foreclosure data, which tracks negative outcomes on the back end of a home purchase loan. These too provide additional context in understanding a neighborhood's overall health, and are analyzed accordingly in subsequent chapters in terms of their correlation to other economic events (see Figure 3.16 and Figure 3.17). Note, for example, the relatively high number of foreclosures that took place in North and West Philadelphia.

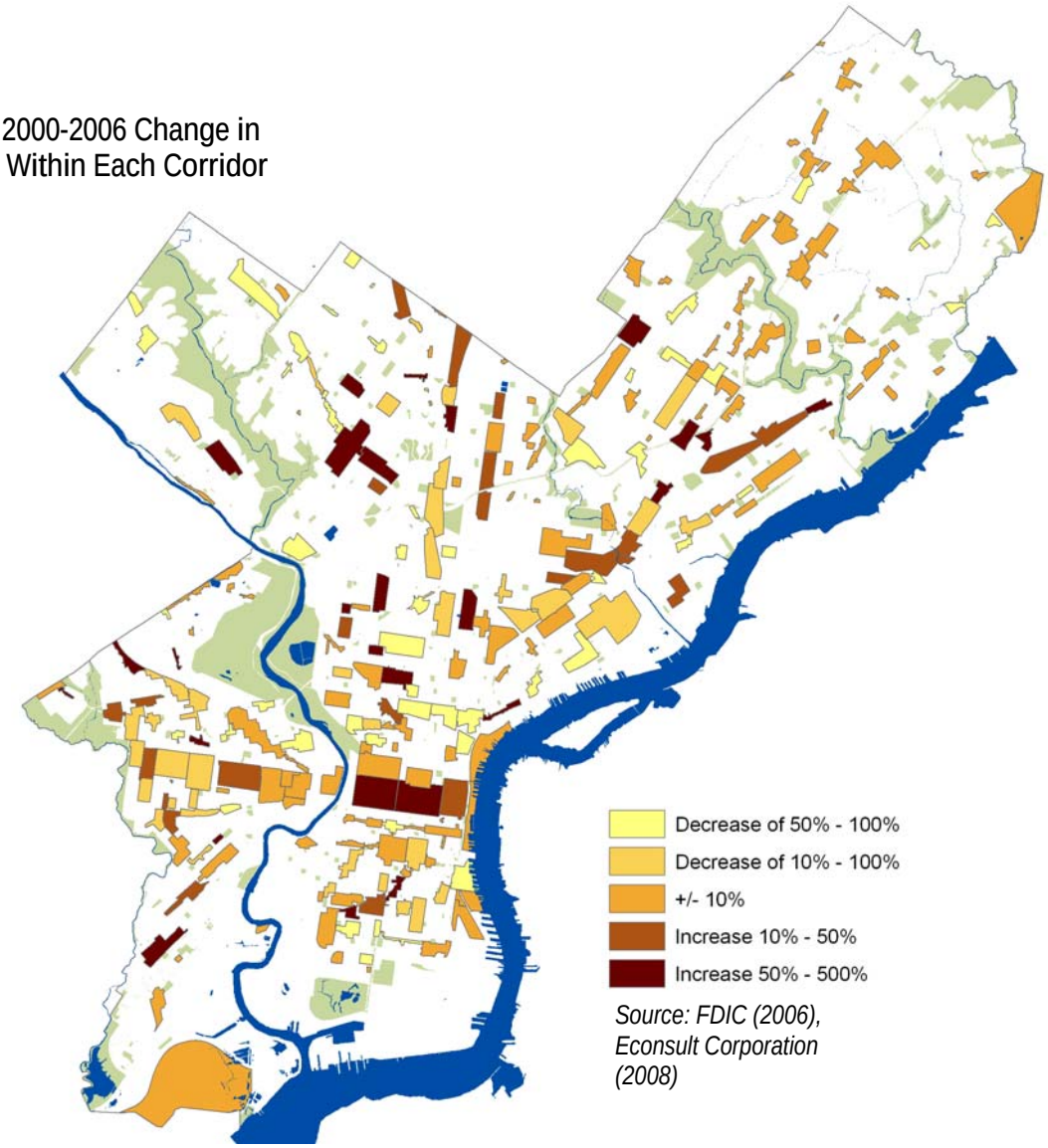
Foreclosures data provides additional context in describing the neighborhoods near each corridor.

Figure 3.16 – 2006 Foreclosures Within Each Corridor



Source: FDIC (2006), Econsult Corporation (2008)

Figure 3.17 – 2000-2006 Change in Foreclosures Within Each Corridor



Source: FDIC (2006), Econsult Corporation (2008)

These snapshots provide further clarity to the condition of neighborhoods around our corridors. To the extent that they depict important indicators of and trends related to neighborhood economic health, they also serve as a basis from which further econometric work can be

performed, to determine where and how corridors respond to these big-picture demographic and economic shifts.

At the individual corridor level, let us again take a closer look at what is taking place at the four corridors analyzed in Econsult's December 2003 study of commercial corridors (see Figure 3.18). Somewhat surprisingly, for three out of the four corridors, the number of foreclosures is down, albeit from small starting levels. To be sure, foreclosure activity has intensified since 2006 and future analysis should therefore be mindful to include and track this data.

We can also depict this foreclosure data at the single-corridor level.

Figure 3.18 – 2006 Foreclosure Information on Census Tracts for Selected Corridors

Corridor	*Citywide 2006 (2000)*	*Frankford Avenue 2006 (2000)*	*North 22nd Street 2006 (2000)*	*Baltimore Avenue 2006 (2000)*	*Washington Ave 2006 (2000)*
2006 # Foreclosures	5129 (5063)	9 (11)	11 (7)	5 (8)	7 (8)
2000-2006 % Change in Foreclosures	1%	-18%	57%	-38%	-13%

Source: FDIC (2005)

4.0 CORRIDOR COMPETITION

4.1 Overview

Decentralization has led to the growing prominence of auto-oriented, big box chain stores, with important implications for existing corridors.

The relative decline of urban commercial corridors is a familiar one to those who understand cities. After World War II, US cities experienced a massive exodus to the suburbs of its upper and middle class populations. Federal policies that subsidized highway construction and suburban housing construction hastened this suburbanization, and redlining practices exacerbated the concentration of poverty and disinvestment in central cities. The growing popularity of the automobile accelerated *the migration of retail activity from cities to suburbs*, as spacious shopping centers built on cheap suburban land took sales away from smaller retailers in neighborhood business districts.[31]

Dramatic changes in the retail sector – first with the development of auto-oriented strip shopping centers, then regional malls, and more recently big-box retailing, power centers and on-line retailing – has changed the landscape of retail competition in the City and the suburbs. In response, some corridors have deteriorated significantly, while others have successfully reinvented themselves, no longer viewing themselves as self-contained retail universes but rather positioning themselves to capitalize on unique product and service niches.[32]

This chapter characterizes commercial corridors by their proximity to other forms of retail competition. Specifically, we consider large-scale chain retailers, chain drug stores, and chain grocery stores. We also take a preliminary look at the extent to which corridors face competition from other nearby corridors. Together, this represents a reasonably sufficient, although not completely comprehensive, depiction of corridor competition. [33]

[31] "Inner City Commercial Revitalization," Karl Seidman (2001).

[32] "Retail Businesses That Work in America's Downtowns," Nation's Cities Weekly (October 2007).

[33] Data on the location and open date of big box retailers, chain stores, and supermarkets is largely obtained from InfoUSA, a leading provider of industry data. See Appendix T for additional information on corridor competition data sources.

4.2 Large-Scale Chain Retailers

We are interested in the spatial distribution of large-scale chain retailers and specifically big box stores, to the extent that we can determine the impact of their arrival over time on corridors.

Big box general merchandise retail stores like Walmart, Target, and Kmart, as well as *"category killers"* such as Lowes, Borders, and Dick's Sporting Goods, have had a profound effect on retail purchasing patterns. Shoppers' growing reliance on the car has been both cause and effect of the growing prominence of such national chains. Their relatively recent introduction to the Philadelphia retail scene has certainly affected the competitive landscape for the City's commercial corridors.

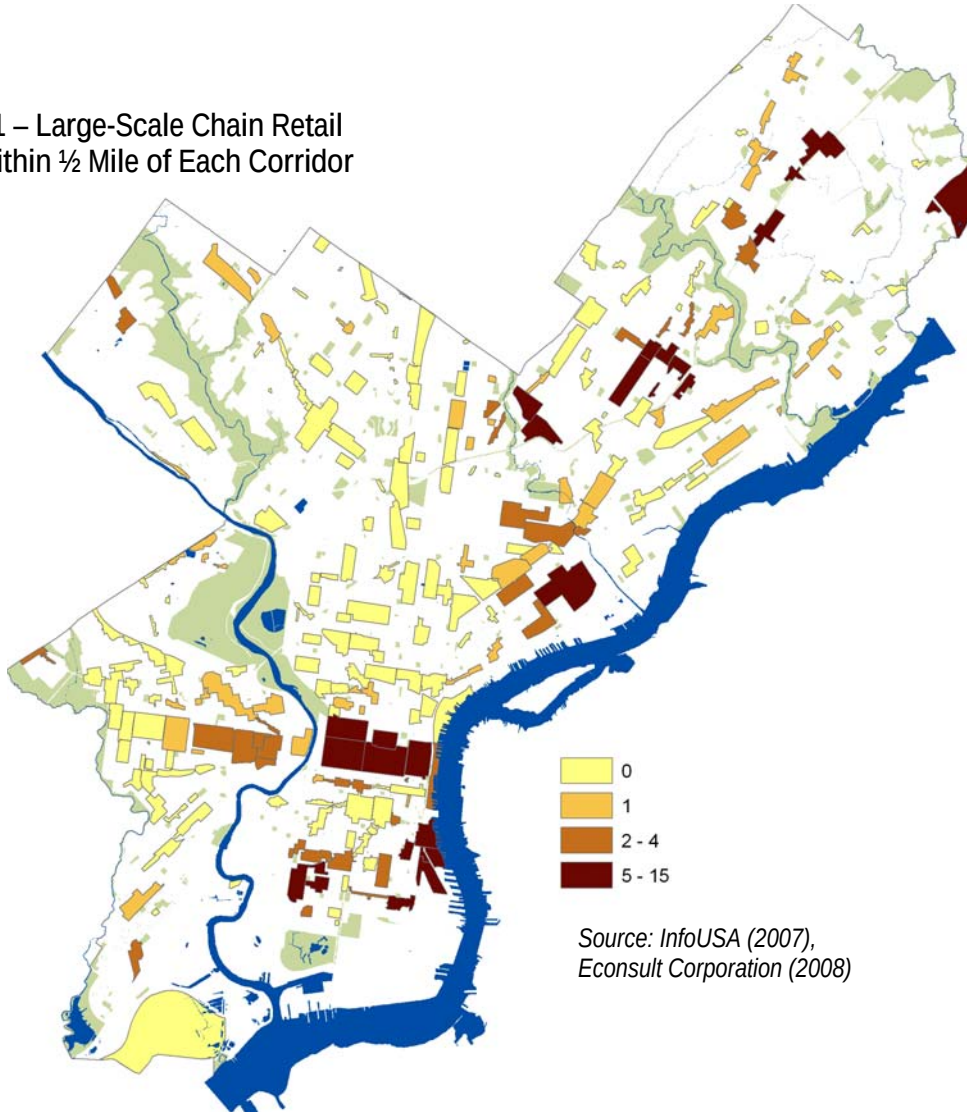
Mapping the location of these large-scale chain retailers, and getting a sense of how many are relatively new to the area, is an instructive initial step in determining that impact; this is particularly true of the big box general merchandise retail stores, which we consider and map as a distinct subset of the universe of large-scale chain retailers (see Figure 4.1 and Figure 4.2).[34] Note the clustering of such retail options in Center City, Northeast Philadelphia, and the far eastern part of South Philadelphia, as well as the recent influx of such offerings on Aramingo Avenue.

We revisit this clustering in Section II, to determine whether the effect on corridors is a more localized one or is a more regional one, and whether and how such stores have a positive or negative effect on existing retail options in nearby commercial corridors. For example, Ting Zhu of Carnegie Mellon University conjectures that the entry of a big box chain store may be positive for smaller stores that are nearby, which can capitalize on the added foot traffic and still offer some differentiation from the big box store, but negative for smaller stores that are further away who lose business to the big box store and do not gain anything back from close proximity.[35]

[34] See Appendix U for additional information on our definition of large-scale chain retailers and for a list of store names included in this analysis. Importantly, though the maps in this chapter only depict stores that currently exist, our analysis also attempts to include stores that used to exist during our study period but have since closed.

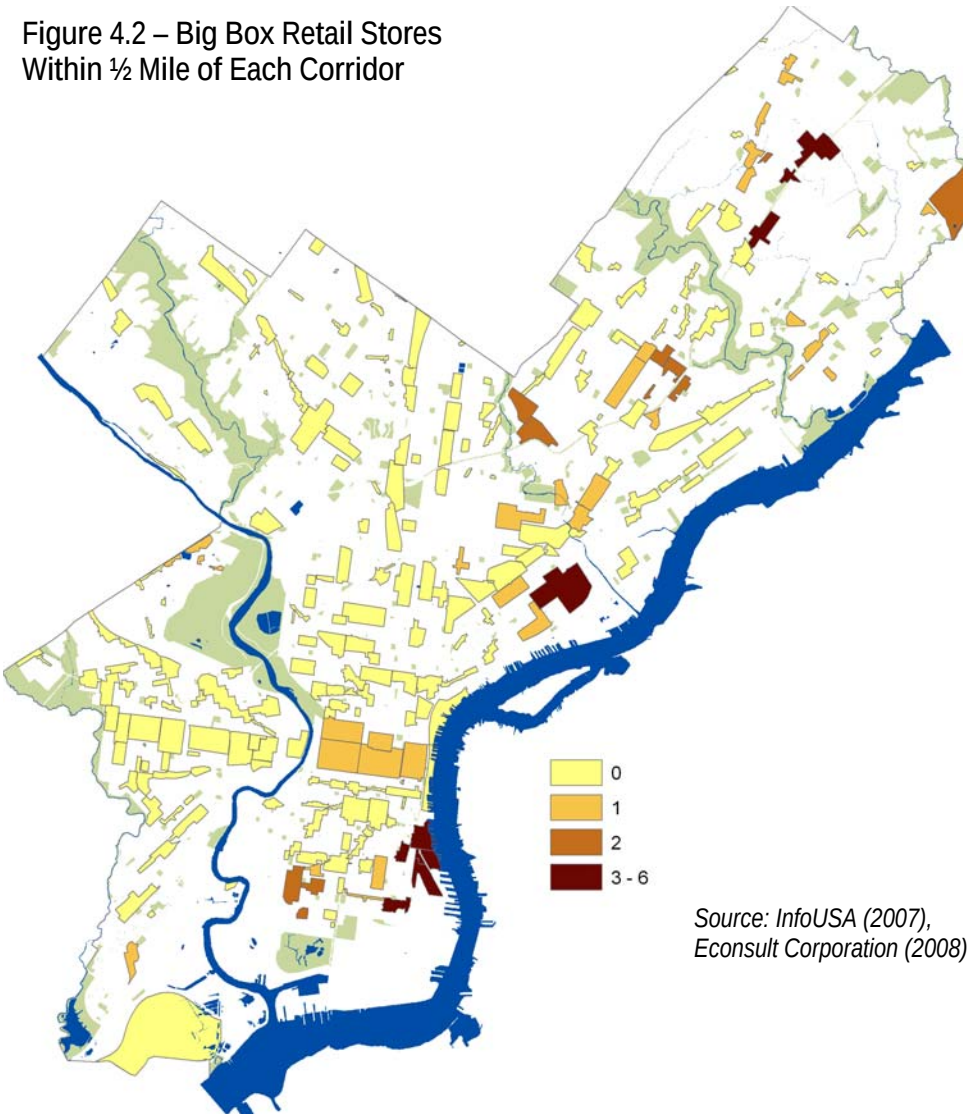
[35] "Local Competition and the Impact of Entry by a Dominant Retailer," Ting Zhu (2005).

Figure 4.1 – Large-Scale Chain Retail Stores Within ½ Mile of Each Corridor



Source: InfoUSA (2007), Econsult Corporation (2008)

Figure 4.2 – Big Box Retail Stores
Within ½ Mile of Each Corridor



Source: InfoUSA (2007), Econsult Corporation (2008)

4.3 Chain Drug Stores

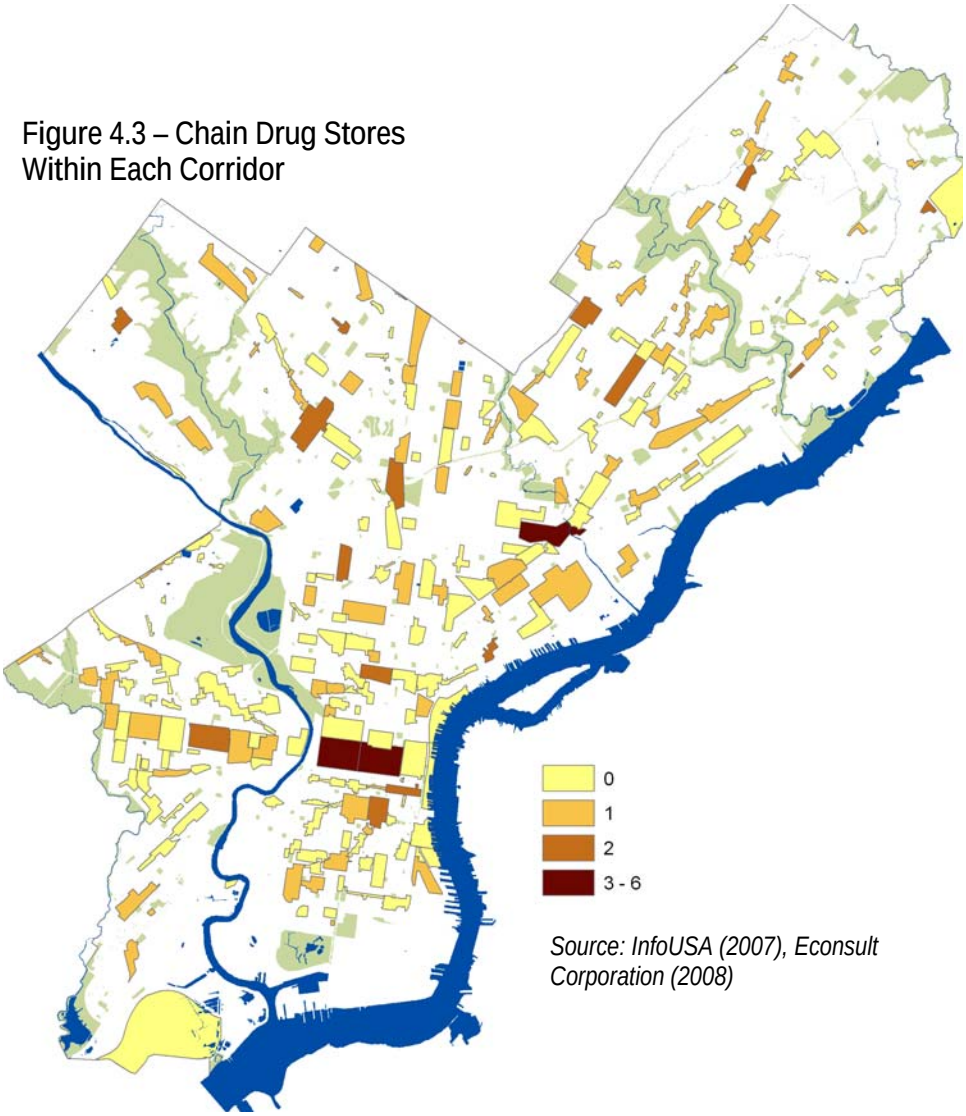
Chain drug stores have risen in prominence in the retail arena, replacing single-store locations in the same way that Home Depot has taken business away from neighborhood hardware stores. Moreover, these chain drug stores sell a broader variety of merchandise than once typified pharmacies.

We are interested in the spatial distribution of chain drug stores, to the extent that we can determine the impact of their arrival over time on corridors.

Because of their potential impacts on the retail competitive landscape, we have assembled data on the distribution, spatially and temporally, of all CVS, RiteAid, Walgreens, and Eckerd pharmacies. These data are mapped and tracked relative to commercial corridors, particularly those in predominantly residential neighborhoods (see Figure 4.3). Note the relative dearth of chain drug stores in North Philadelphia and in many parts of Northeast Philadelphia.

We return to this topic at length in Section II, since their growing presence in and near residential neighborhoods is important to analyze against existing retail locations and residential real estate. In particular, as stated earlier in this chapter, we can see what effect the introduction of new chain drug stores in or near a corridor has on the sales levels of existing retail stores.

Figure 4.3 – Chain Drug Stores Within Each Corridor



Source: InfoUSA (2007), Econsult Corporation (2008)

4.4 Chain Grocery Stores

Grocery stores represent an important component of a shopper's retail consumption. Mapping the locations of *chain grocery stores* and their year of arrival can provide a useful visual sense of the spatial distribution of this important retail outlet; it also helps inform other analysis later in the report.

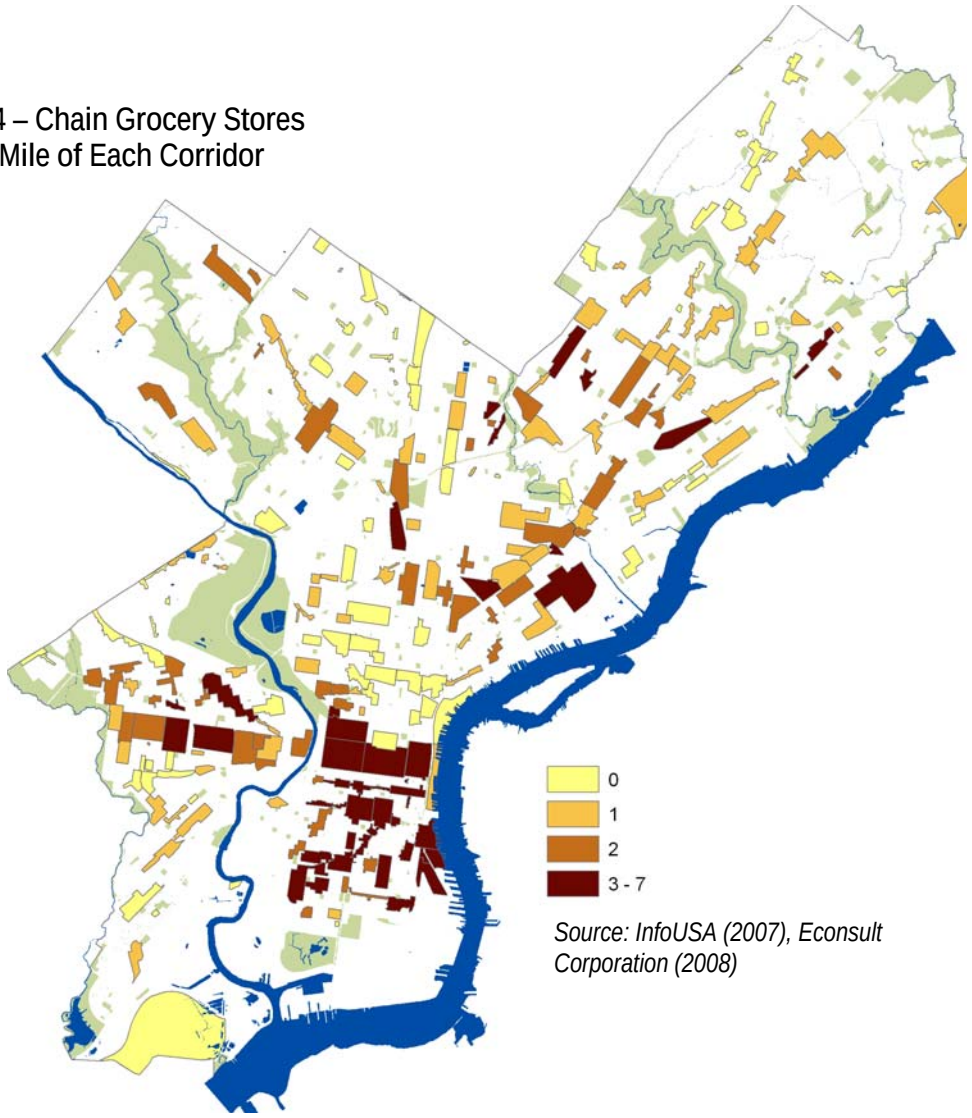
We are interested in the spatial distribution of chair grocery stores, to the extent that we can determine the impact of their arrival over time on corridors.

Much has been said about the importance of commercial corridors, from the standpoint of providing neighborhood residents with easy access to essential goods and services. It is a similar argument that is put forth when considering the introduction of grocery stores into the City. Thus, their spatial distribution is important; note, for example, the relative dearth of chain grocery stores in North Philadelphia, as well as the recent influx of such offerings along Frankford Avenue (see Figure 4.4).[36]

In Section II, we can look more closely at the effect of the introduction of these retail offerings on corridors in general, and on existing stores within corridors in specific. In particular, as stated earlier in this chapter, we can see what effect the introduction of new chain grocery stores in or near a corridor has on the sales levels of existing retail stores.

[36] See Appendix V for additional corridor competition maps.

Figure 4.4 – Chain Grocery Stores
Within ½ Mile of Each Corridor



Source: InfoUSA (2007), Econsult Corporation (2008)

4.5 Other Corridors

To be sure, *other corridors* represent a form of competition for a given corridor. What is further explored in Section II is whether, all else being equal, a corridor is better off being near other corridors or more isolated. Moreover, we can examine the issue of whether corridor consolidation could improve performance. Notably, corridors are relatively well dispersed across the City, with very few pockets of areas with few corridors nearby.

Other corridors represent a form of competition for a given corridor.

4.6 Corridor-Level Perspective

Again, the interplay between these larger, chain competitors and existing retail options in corridors will be further investigated in Section II. For now, we can take a closer look at the four corridors analyzed in our December 2003 study, as well as at two additional corridors, to see the amount and type of penetration into corridors of such retail competition (see Figure 4.5).

We can depict the competitive landscape at the single-corridor level.

Figure 4.5 – Retail Competition Near Selected Corridors

Corridor	*Frankford Avenue*	*North 22nd Street*	*Baltimore Avenue*	*Washington Avenue*
Large-Scale Chain Retailers (1/2 mile radius)	1	0	0	0
Chain Drug Stores (within)	0	3	1	3
Chain Grocery Stores (1/2 mile radius)	2	0	0	7
Other Corridors (1/2 mile radius, 1/4 mile radius for pedestrian/transit corridors)	3 (1/4 mile)	1 (1/4 mile)	4 (1/4 mile)	8 (1/4 mile)

Source: Info USA (2007), Econsult Corporation (2008)

5.0 CORRIDOR INTERVENTIONS

5.1 Overview

Whether a retail center is an amenity or a disamenity for its immediate neighborhoods depends on a number of factors. To the extent that it offers convenient access to essential goods and is aesthetically attractive, it can be a huge selling point for nearby homes, thus adding to property values. Conversely, to the extent that there are high vacancies or decaying infrastructure, proximity to a corridor can make a neighborhood less attractive.

All else equal, a commercial corridor is a disamenity to its immediate neighborhood, since it creates traffic congestion and noise pollution; but well-kept corridors can mitigate those negative effects and even create positive effects.

All else equal, retail centers can generally be considered disamenities, to the extent that they create traffic congestion and noise pollution; although this broad sentiment is changing in places that are warming to mixed-use communities and readier access to retail options. Nevertheless, commercial corridors that are well-kept and provide a healthy mix of retail offerings can mitigate those negative effects and even create positive effects on their surrounding neighborhoods.

There are a number of approaches that public sector and private sector decision-makers can take and in fact have taken in *investing in commercial corridors*, for this very purpose.[37] In many cases, municipalities seek to make strategic investments at the corridor level, in order to catalyze a virtuous cycle of improvements that lead to more attractive retail districts. An example of a recent public intervention intended for this purpose is a $300,000 matching grant program for façade improvements initiated by the City of South Bend, Indiana, which has led to an additional $700,000 in private sector investments.[38]

Investments and programs can be targeted to physical places or to the residents and businesses that inhabit those locations. Strategies can focus on the corridor as a distinct economy or as part of a broader, regional economy:

- *Governments* can designate areas for special tax incentives, infrastructural enhancements, and/or relaxations on restrictions.

[37] "Ten Principles for Rebuilding Neighborhood Retail," Urban Land Institute (2007); "The Competitive Advantages of the Inner City," Michael Porter (1995); "Inner City Commercial Revitalization: A Literature Review," Karl Seidman (June 2002).

[38] "Mayor Touts Success of Residential and Commercial Corridor Improvement Matching Grants," City of South Bend (January 16, 2007). See also Washington DC's support of street beautification programs along key commercial corridors in the Brightwood neighborhood: "Investment Goals and Strategies," DC Office of Planning (2008); and Detroit LISC's collaboration with the City of Grosse Pointe Park: "Commercial Corridor Redevelopment as a Social Equity Strategy," Detroit LISC (January 27, 2006).

- Public, quasi-public, or private *management entities* can be instituted to manage corridors: business improvement districts, centralized retail management, or Main Street programs.
- Non-profits can intervene with *technical assistance* for business owners, support services for neighborhood residents, or even more comprehensive services.
- *Commercial development corporations* tend to focus on housing and/or business tenant recruitment, while chambers of commerce and other local or regional entities often play a role in local *business development, retention, and attraction*.[39]

Public and private entities have made a number of different kinds of investments in corridors; our aim is to understand when and where these interventions have taken place, and which have been the most effective in improving corridor performance.

Before we can determine which of these strategies is most effective in improving the performance of commercial corridors, we must have some sense of the geographic distribution of various interventions. That is the topic of this chapter. While the datasets used in this chapter by no means represent an exhaustive list of corridor interventions, they are a reasonably adequate mix of public sector and private sector investments.[40] Thus, we map this mix of interventions, and then associate them to corridors if they were targeted to the corridors specifically or to areas within a quarter-mile of the corridor's boundaries.

[39] "Inner City Commercial Revitalization," Karl Seidman (2001).

[40] See Appendix W for more information on corridor intervention data sources.

5.2 City of Philadelphia

The City is a major investor in corridors, offering a number of different programs to corridors and the entities that support them.

The City itself is, of course, a major investor in its commercial corridors. *The City has developed a number of innovative programs designed to provide public resources to improve commercial corridors*. Five sources are profiled here, and mapped in summary (see Figure 5.1 and Figure 5.2).[41]

Note that while much of the City's interventions are concentrated in or near the core of the City (Center City, North Philadelphia, West Philadelphia, and South Philadelphia), high intervention counts are also seen in auto-oriented parts of Near Northeast Philadelphia, and in such up-and-coming corridors as Aramingo Avenue and Frankford Avenue (Lower Mayfair).

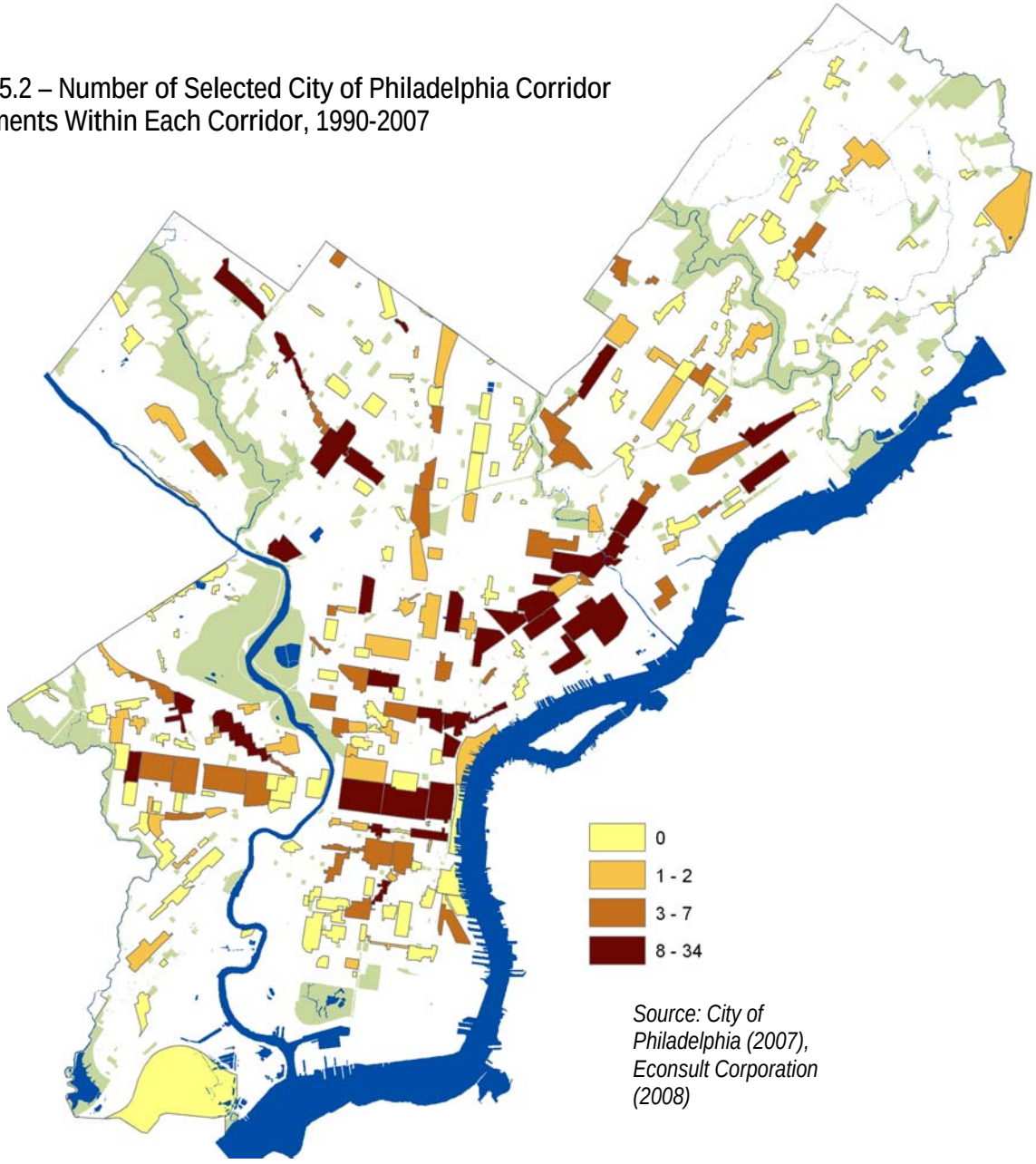
Figure 5.1 – Summary of Selected City of Philadelphia Corridor Investments, 1990-2007

City Program	*Description*	*Years Data is Available*	*Total Amounts Awarded During That Time Period*
Small Business Community Improvement Program	Investments to assist businesses with façade improvement and security resources (formerly known as the Security Assistance Program and the Exterior Commercial Improvement Program)	1995-2007	936 projects Total cost $14,535,388 City portion $2,952,079
Economic Stimulus Funding	Disbursements from the City's Commerce Department	1994-2005	63 projects $15,128,151
Tax Credit Partnership groups	Participants in the City's ten-year, $100,000 tax credit partnership program	2001-2007	25 partnerships
Business Improvement Districts / Neighborhood Improvement Districts	Boundaries of BIDs and NIDs established within the City	1990-2007	12 Districts

Source: City of Philadelphia (2007)

[41] Data was obtained with the assistance of the City's Neighborhood Transformation Initiative. See Appendix X for individual maps of select City interventions.

Figure 5.2 – Number of Selected City of Philadelphia Corridor Investments Within Each Corridor, 1990-2007



Source: City of Philadelphia (2007), Econsult Corporation (2008)

5.3 Other Interventions

We have included a number of non-City interventions in our analysis as well, including initiatives by both other government entities as well as local non-profits.

Certainly, there are other important investments being made on commercial corridors besides those being made by the City itself. *Foundations, non-profits, state and federal entities, and quasi-governmental agencies* in particular play a role by mobilizing financial, technical, and infrastructural resources to improve commercial corridors. While the interventions we gathered is by no means an exhaustive list, we feel that it represents the diversity of intervention types, and in doing so provides some sense of the distribution and the effectiveness of non-municipal interventions on commercial corridors (see Figures 5.3 and Figure 5.4).[42] Here we detect a similar pattern as with City interventions, although with a broader distribution further from the City.

- *Community Design Collaborative Design Grants* – The Community Design Collaborative of the American Institute of Architects in Philadelphia (CDC) is a community design center serving non-profit organizations. As such, one of its roles is to mobilize professional architects, planners, and designers on pro-bono design projects around the City. CDC provided Econsult with a list of such design projects, including location and the dollar value of professional services donated.

- *Local Initiatives Support Corporation corridor investments* – The Local Initiatives Support Corporation (LISC) is a major advocate and investor in commercial corridors in Philadelphia. Their recent financial and technical investments have been catalogued and provided to Econsult, and those that can be reasonably assigned to a specific geographic area included in our analysis. Importantly, we account separately for corridor investments and capacity-building grants, so that we can separately depict these investments and determine their impact on corridors.

- *Miscellaneous federal and state incentive zones* – We also map Renewal Communities and Empowerment Zones, which are federal designations, as well as Enterprise Zones, which is a Commonwealth of Pennsylvania designation.

- *Mural Arts Program Murals* – The Mural Arts Program has been responsible for the design and production of almost 3,000 murals in the City, as well as for the community engagement process involved in each mural. It provided Econsult with the location and completion date of a large subset of its murals.

- *Pennsylvania Horticultural Society plantings* – The Pennsylvania Horticultural Society provides a number of events, activities, and publications designed to utilize horticulture to

[42] See Appendix Y for individual maps of select other interventions.

improve the quality of life in the region. It has kept a meticulous database of plantings by location and date, which it made available to Econsult for the purposes of this study.[43]

- *Philadelphia Association of Community Development Corporations (PACDC) membership* – Corridor leadership and capacity are, of course, vitally important to corridor success; and yet, human and organizational capital are notoriously difficult to quantify and to monitor. A possible proxy is membership in various associations, and PACDC is an appropriate one for this study, as inclusion in such a group represents some level of capacity on the part of the corridor, in the form of the existence of active leadership and a connected organization.

- *Supermarkets initiated as a result of major public intervention* – Although supermarkets were covered in the previous chapter as a form of competition, an important subset of these locations are a form of intervention, to the extent that they resulted from significant and intentional public subsidy for purposes of making healthy and affordable food available to certain neighborhoods. Therefore, we map these locations as a special type of intervention.

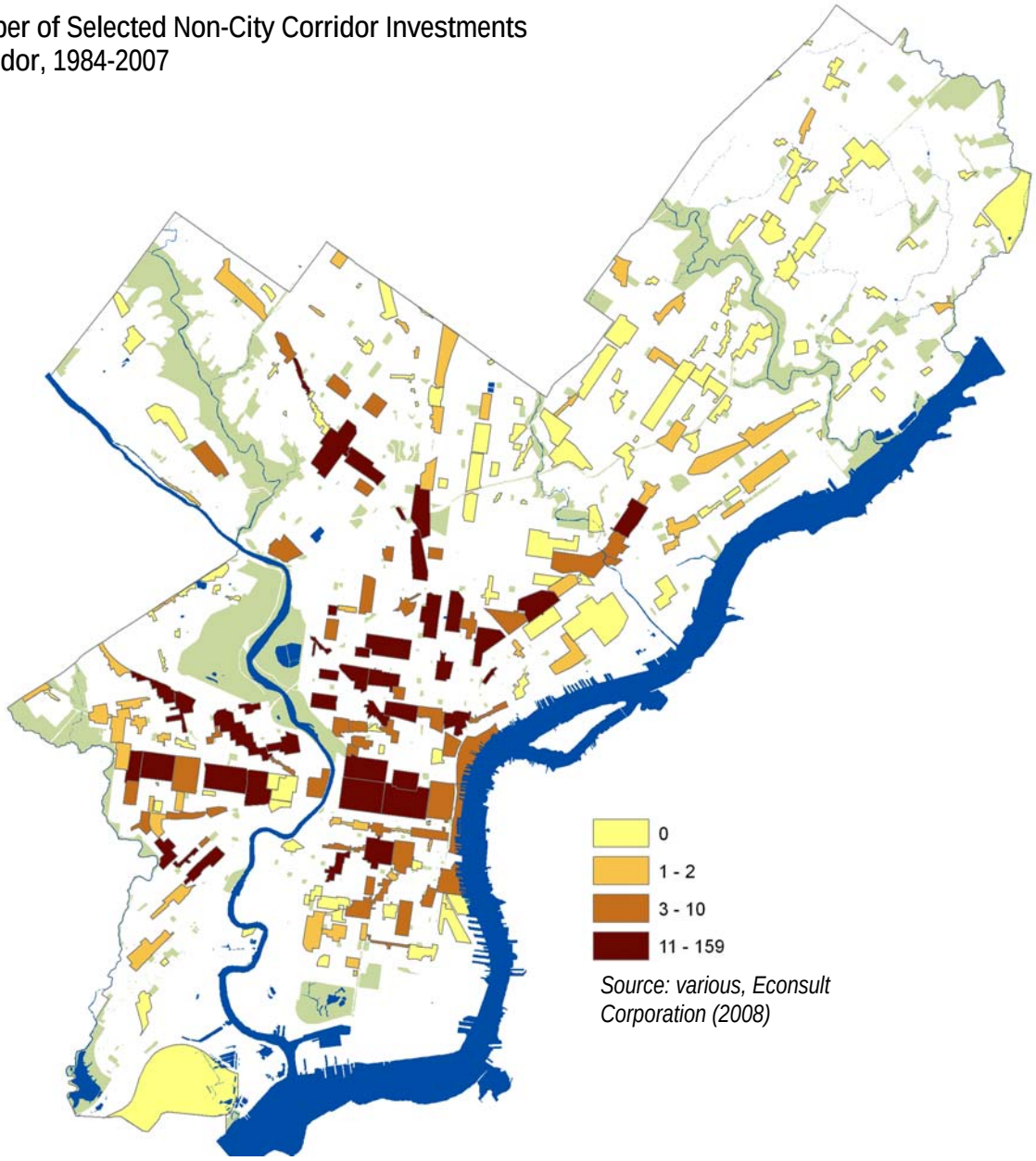
[43] See Appendix Z for location of Pennsylvania Horticultural Society Investments.

Figure 5.3 – Summary of Selected Non-City of Philadelphia Corridor Investments, 1954-2007

Non-City Intervention	*Years Data is Available*	*Description*
Federal Empowerment Zones	1994-2007	3
Pennsylvania Enterprise Zones	1995-2005	4
PACDC	2007	45 members as of 12/31/07
Mural Arts Program	1984-2008	1,439 murals as of 1/1/2008
Subsidized Groceries	2004-2007	14 projects / $2,150,000
Penn Horticultural Society Land Stabilization	2002-2007	3,711 projects
Penn Horticultural Society Treevitalize	2006-2007	7 projects / 385 trees
Penn Horticultural Society Community Landcare	2007	1,493 projects
Penn Horticultural Society Public Landscape Gateways	1987-2006	36 projects
Penn Horticultural Society ReStore Plantings	2006-2008	33 projects / 400 trees
Penn Horticultural Society Signature Corridors	2000-2007	14 projects
Penn Horticultural Society Stormwater Management	2003-2006	13 projects
Penn Horticultural Society Park Revitalization	1993-2006	92 projects
Community Design Collaborative	1996-2006	51 projects / $482,337

Source: various

Figure 5.4 – Number of Selected Non-City Corridor Investments Within Each Corridor, 1984-2007



Source: various, Econsult Corporation (2008)

5.4 Corridor-Level Perspective

The correlation between these various City and non-City interventions on corridor success will be further investigated in Section II. For now, we can take a closer look at the four corridors analyzed in our December 2003 study, to see the amount and type of penetration into corridors of such interventions (see Figure 5.5).

We can depict the distribution of interventions at the single-corridor level.

Figure 5.5 – Selected Corridor Investment Programs Within Selected Corridors

Corridor	*Frankford Avenue*	*North 22nd Street*	*Baltimore Avenue*	*Washington Avenue*
# Total City Interventions	22	19	12	23
# Total Other Non-City Interventions	26	36	31	63

Source: City of Philadelphia (2007), Econsult Corporation (2008)

6.0 CONSUMER CHOICE CHARACTERISTICS

6.1 Overview

Consumer choice is an important measure of corridor success because it depicts a corridor's ability to attract shopping dollars. To give but one example, businesses measure their competitive position in terms of "market share" – the percentage of sales in a given category that they are able to secure; in the same way, corridors can and should be measured by their *market share, or the percentage of shopping trips that they are able to attract*.

In fact, understanding shopping patterns is a vital aspect of deciphering the system of commercial corridors and recommending a strategic framework to ensuring their future viability. Chain stores such as CVS and Rite Aid use affinity programs to keep meticulous data on their shoppers, and mine that data for useful information for purposes of site selection, inventory management, and product promotion. Corridor managers, as well as public sector and private sector decision-makers who make investments in corridors, should have access to that level of sophistication.

The City of Philadelphia last commissioned a major shopping survey in 1984. Since then, of course, technology makes displaying and analyzing survey results much more robust. In light of this fact, *Econsult commissioned a large household survey in early 2007* to ask people about the characteristics of their most recent shopping trips. Based on the results of this survey, we are able to produce a number of very interesting visuals, which together provide a vivid sense of shopping patterns in Philadelphia.[44]

A large household survey has yielded a vivid understanding of shopping patterns in Philadelphia, most notably a sense of the "market share" of shoppers for each corridor.

[44] See Appendix AA for more information on consumer choice data sources.

6.2 General Survey Results

Econsult hired the survey firm, the reed group, to conduct a phone survey of 3,000+ respondents totaling 10,000+ shopping trips.[45] Over 94 percent of geocodable shopping trips ended up in a corridor, with less then six percent ending up in non-corridor locations.

Working with the reed group, and with input from LISC and the Advisory Committee, a survey script and general methodology was developed, tested, refined, and finalized. Procedures consistent with the latest survey industry practices were incorporated in the selection of phone numbers to call and in the conducting of the surveys themselves. Survey results were then weighted so that the final data set was more closely representative of the demographic breakdown of the City.[46]

PCPC designations of a corridor's trade area are largely accurate, in terms of distance traveled.

These survey results can be particularly useful when considering the Philadelphia City Planning Commission's various corridor classifications. For example, corridor type largely defines the trade area from which a retail center draws its customers; and the survey results indicate that corridor types labeled as having larger trade areas did in fact capture shopping trips involving longer travel distances by car or transit, even taking into consideration the fact that only Philadelphia residents were surveyed and thus the even longer distances traveled by suburban shoppers visiting regional and super-regional centers are not included (see Figure 6.1).

PCPC designations of a corridor's functional layout are largely accurate, in terms of mode of transportation used.

Secondly, corridors designated as pedestrian/transit in character were in fact more likely to capture shopping trips involving transit, walking, or biking; driving accounted for only 40 percent of trips to pedestrian/transit corridors but over 80 percent of auto-oriented and free-standing corridors (see Figure 6.2). Furthermore, the larger the trade area, the more likely cars were used instead of transit or foot, with the notable exception of regional centers and superregional centers, which include such transit-oriented and pedestrian-oriented locations as Market West – Center City and Market East – Center City (see Figure 6.3).[47]

[45] Respondents were asked about recent purchases in seven good categories, and more were able to remember trip information for three or four. Each of these household survey shopping trips can be considered to equal approximately 300 shopping trips per week. See Appendix AB for the household survey script.

[46] See Appendix AC for a demographic breakdown of the respondents, as compared to the demographic breakdown of the City of Philadelphia, and Appendix AD for a field report from the reed group.

[47] Again, the trip length results for regional centers and superregional centers is also low because only Philadelphia residents were surveyed, so long car trips by suburban shoppers are not involved.

Figure 6.1 – Median Distance Traveled in Miles by Corridor Type

Corridor Type	*All Trips*	*Car Trips*	*Transit Trips*	*Walk/Bike Trips*
Neighborhood subcenter	0.6	0. 9	0.9	0.2
Neighborhood center	0.7	0.8	1.1	0.2
Community center	1.1	1.3	1.3	0.2
Regional center	0.5	2.2	2.0	0.2
Superregional center	1.8	2.2	2.5	0.4
Specialty center	0.7	1.8	1.2	0.2

Source: the reed group (2007), Econsult Corporation (2008)

Figure 6.2 – Distribution of 2007 Household Survey Shopping Trips, by Mode of Transportation

Corridor Character	*Auto*	*Transit*	*Walk/Bike*	*% Trips <1 Mile*
Pedestrian / transit	37.8%	22.4%	39.8%	59.7%
Auto-oriented	84.1%	4.7%	11.2%	49.5%
Free-standing	85.1%	5.3%	9.6%	48.0%
Specialty[48]	N/A	N/A	N/A	N/A
Mixed	76.8%	7.2%	16.0%	59.3%
Total	65.6%	11.7%	22.4%	53.4%

Source: the reed group (2007), Econsult Corporation (2008)

[48] Corridors of this character were not included in the analysis

Figure 6.3 – Distribution of 2007 Household Survey Shopping Trips, by Mode of Transportation

Corridor Type	*Auto*	*Transit*	*Walk/Bike*	*% Trips <1 Mile*
Neighborhood subcenter	66.9%	9.2%	23.9%	64.2%
Neighborhood center	70.1%	7.8%	22.1%	63.0%
Community center	75.1%	9.2%	15.7%	46.7%
Regional center	24.4%	25.1%	50.5%	58.8%
Superregional center	34.8%	40.9%	24.3%	38.4%
Specialty center	38.2%	12.7%	49.1%	58.2%
All Trips	66.0%	11.7%	22.4%	53.8%

Source: the reed group (2007), Econsult Corporation (2008)

6.3 Retaining, Importing, and Exporting Shoppers

Another interesting way to mine this shopping data is to consider *the net flow of shoppers for a given area*. In other words, we can know the following totals for a given area[49]

We can compare the inflows and outflows of shoppers (Center City, Upper Northeast) versus losing them to other parts of the City (North Philadelphia, West Philadelphia)

- Retaining shoppers – shoppers whose origin and destination are the area in question
- Importing shoppers – shoppers whose origin is outside the area and whose destination is inside the area[50]
- Exporting shoppers – shoppers whose origin is inside the area and whose destination is outside the area[51]

"Net flow" would then be the number of retained shoppers plus the number of imported shoppers, less the number of exported shoppers, for trips that end in a corridor. That net figure would offer a sense of which parts of the City are successfully drawing in retail spending versus losing it to other parts: note, for example, the heavy exodus of shoppers from North and West Philadelphia, as well as the very positive net flow of shoppers to the Upper Northeast, despite the fact that our survey data does not account for non-Philadelphia residents northeast of the City that come to such regional draws as the Franklin Mills Mall (see Figure 6.4).

We can further distinguish between good type (healthy draw in South Philadelphia for food and in Center City for apparel) as well as mode of transportation (transit users to Center City, auto users to Upper Northeast and Kensington-Frankford.

Figure 6.4 – Net Flow of Shoppers, by Region (n = 6,198 corridor shopping trips)

Region	*Shoppers Imported*	*Shoppers Retained*	*Shoppers Exported*	*Net Flow*	*Percent Imported*	*Percent Exported*
	(A)	*(B)*	*(C)*	*(A-C)*	*(A/(A+B))*	*(C/(C+B))*
University City	115	50	56	59	69.7%	52.8%
West	100	457	270	-170	18.0%	37.1%
South	207	475	128	79	30.4%	21.2%
Center City	373	580	265	108	39.1%	31.4%

[49] The areas used in this sub-chapter are real estate sub-markets, to express the extent to which distinct residential sectors of the City are net imports or net exports of shoppers.

[50] "Percent imported" for a given area is therefore the number of shoppers coming from outside that area to shop within that area, divided by the number of shoppers that end up in that area regardless of where they started.

[51] "Percent exported" for a given area is therefore the number of shoppers leaving that area to shop outside that area, divided by the number of shoppers that originate from that area regardless of where they end up.

Region	*Shoppers Imported*	*Shoppers Retained*	*Shoppers Exported*	*Net Flow*	*Percent Imported*	*Percent Exported*
	(A)	*(B)*	*(C)*	*(A-C)*	*(A/(A+B))*	*(C/(C+B))*
Northwest	105	290	97	8	26.6%	25.1%
North	199	858	511	-312	18.8%	37.3%
Lower Northeast	295	802	268	27	26.9%	25.0%
Upper Northeast	259	558	109	150	31.7%	16.3%
Knsngtn-Frnkfrd	161	314	110	51	33.9%	25.9%

Source: the reed group (2007), Econsult Corporation (2008)

By further analyzing these results by good type, one can further understand pockets of opportunity in terms of imbalances between supply of a certain type of retail offering and demand for it: the data seems to suggest, for example, that food is a healthy draw in South Philadelphia and apparel in Center City (see Figure 6.5). Finally, we can also differentiate between auto trips, transit trips, and pedestrian trips, to see the mode of transportation shoppers are using to travel within or between corridors: Center City is, not surprisingly, a net importer of transit riding shoppers, while auto-oriented plazas in the Upper Northeast and Kensington-Frankford are drawing driving shoppers (see Figure 6.6).[52]

Figure 6.5 – Net Flow of Shoppers by Good Type, by Region

Region	*Food (Use at Home)*	*Food (Away from Home)*	*Apparel*	*House*	*Healthcare*	*Personal Care*	*Hobby / Leisure*
University City	11	8	-2	5	28	5	4
West	-35	-19	-38	-10	-29	-19	-20
South	25	4	-3	28	-1	19	7
Center City	-12	10	86	-22	17	-2	31
Northwest	-1	-2	-2	4	-1	7	3

[52] See Appendix AE for additional import/export/retain figures, by zip code.

Region	*Food (Use at Home)*	*Food (Away from Home)*	*Apparel*	*House*	*Healthcare*	*Personal Care*	*Hobby / Leisure*
North	-35	-28	-87	-51	-31	-42	-38
Lower Northeast	8	-5	31	-1	1	-1	-6
Upper Northeast	23	21	22	34	14	19	17
Knsngtn-Frnkfrd	16	11	-7	13	2	14	2

Source: the reed group (2007), Econsult Corporation (2008)

Figure 6.6 – Net Flow of Shoppers by Mode of Transportation, by Region

Region	*Drive*	*Use Public Transportation*	*Walk or Bike*
University City	31	-65	16
West	-81	-65	-24
South	113	-14	-20
Center City	-35	127	16
Northwest	19	-12	1
North	-283	-30	1
Lower Northeast	25	-3	5
Upper Northeast	154	-4	0
Knsngtn-Frnkfrd	57	-3	16

Source: the reed group (2007), Econsult Corporation (2008)

6.4 Market Share

Five Planning Analysis sections together account for well over half of corridors and trips

Of course, the most interesting findings for such a survey are not the aggregated survey answers but *their distribution across the City*. The origin of these shopping trips is randomly distributed across the City, as per the survey methodology, but the destinations do exhibit some patterns. We begin by considering the distribution of these trips by the City's major sections, as defined by the Philadelphia City Planning Commission, [53] noting that five of the 12 Planning Analysis Sections – Far Northeast Philadelphia, Near Northeast Philadelphia, Center City, West Philadelphia, and South Philadelphia – together account for over 59 percent of all corridors and captured 65 percent of all shopping trips that ended up in a corridor (see Figure 6.7 and Figure 6.8).

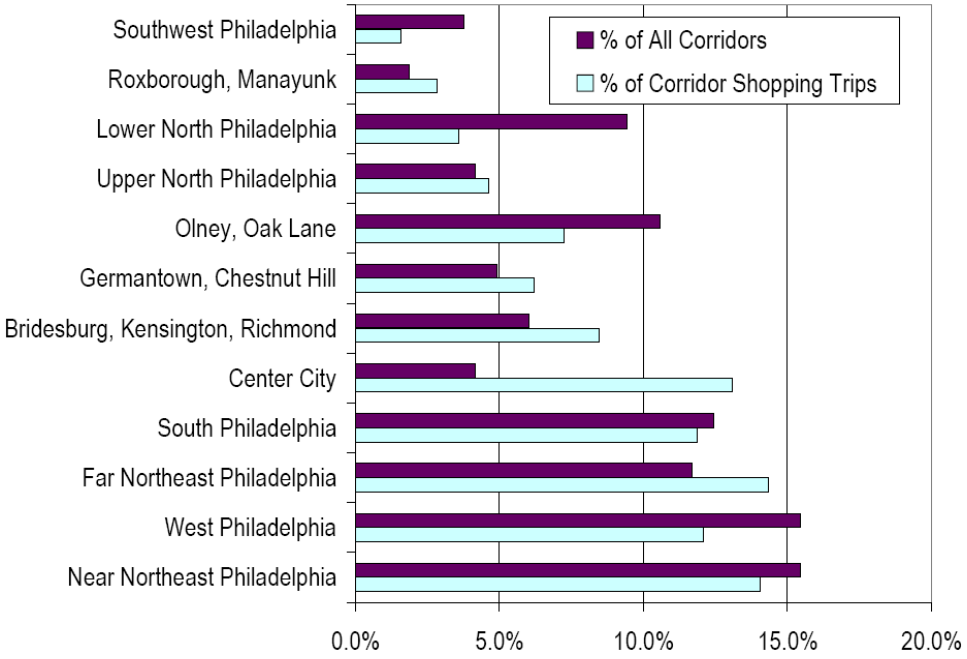
Figure 6.7 – Distribution of 2007 Household Survey Shopping Trips That End in Corridors, by Planning Analysis Section of Destination

Planning Analysis Section	*% of Corridor Shopping Trips*	*% of All Corridors*
Far Northeast Philadelphia	14.4%	11.7%
Near Northeast Philadelphia	14.1%	15.5%
Center City	13.1%	4.2%
West Philadelphia	12.1%	15.5%
South Philadelphia	11.9%	12.5%
Bridesburg, Kensington, Richmond	8.5%	6.0%
Olney, Oak Lane	7.2%	10.6%
Germantown, Chestnut Hill	6.2%	4.9%
Upper North Philadelphia	4.6%	4.2%
Lower North Philadelphia	3.6%	9.4%
Roxborough, Manayunk	2.8%	1.9%
Southwest Philadelphia	1.6%	3.8%

Source: the reed group (2007), Econsult Corporation (2008)

[53] Planning Analysis Sections were developed by the Philadelphia City Planning Commission to segment the City into regions. See Appendix AF for a map that depicts the boundaries of these areas.

Figure 6.8 – Distribution of 2007 Household Survey Shopping Trips That End in Corridors, by Planning Analysis Section of Destination



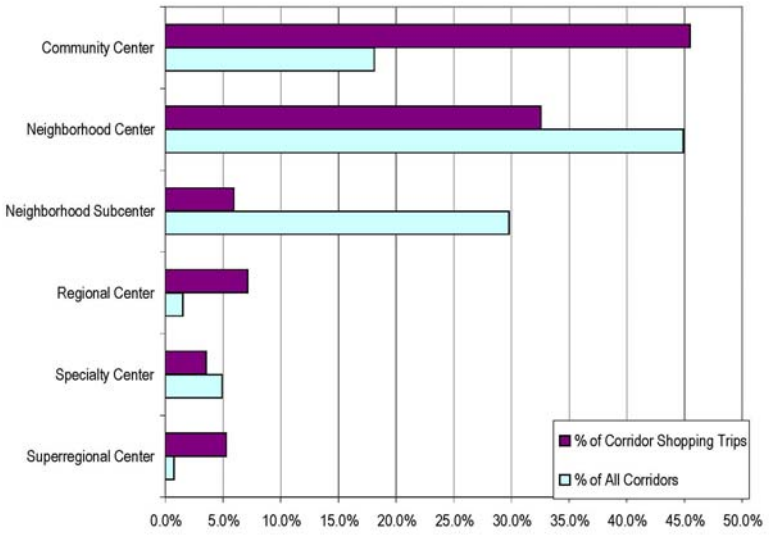
Source: the reed group (2007), Econsult Corporation (2008)

The performance of the Center City corridors is made all the more impressive by the fact that our household survey data captures only Philadelphia residents. Although Planning Analysis Sections on the edge of the City's boundaries are likely to also enjoy the spending dollars of non-residents coming into the City to shop (most notably Franklin Mills, which is rightfully defined as a super-regional center and which is on the northeastern boundary of the City), it is likely that Center City enjoys an even higher proportion, largely from tourists and suburban residents who come to the downtown area for work and/or play and who frequent nearby retail establishments while they are there.

Among corridor types, regional centers, superregional centers, and specialty centers accounted for only 7 percent of corridors and only 15 percent of all trips; while among corridor characters, pedestrian/transit corridors accounted for 42 percent of corridors and 34 percent of trips.

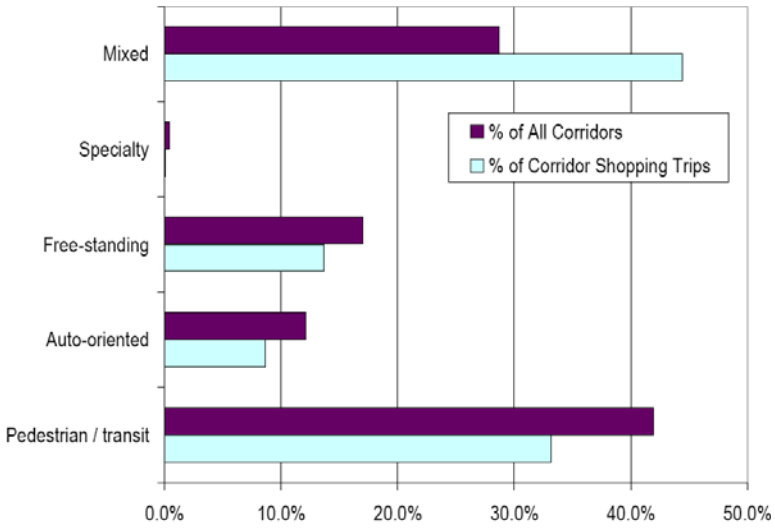
We can further consider the distribution of shopping trip destinations by corridor characteristics. Specifically, we can calculate *the market share of corridor trips* by corridor category, as defined as the percentage of all corridor trips that end up in a particular corridor category (see Figure 6.9 and Figure 6.10). Neighborhood sub-centers, neighborhood centers, and community centers account for 93 percent of all corridors and captured for 85 percent of shopping trips that ended up in a corridor; while pedestrian/transit corridors account for 42 percent of corridors and captured 34 percent of shopping trips that ended up in a corridor.

Figure 6.9 – Distribution of 2007 Household Survey Shopping Trips That End in Corridors, by Corridor Type of Destination



Source: the reed group (2007), Econsult Corporation (2008)

Figure 6.10 – Distribution of 2007 Household Survey Shopping Trips That End in Corridors, by Corridor Character of Destination



Source: the reed group (2007), Econsult Corporation (2008)

6.5 Corridor-Level Perspective

We can further consider the distribution of shopping trip destinations by individual corridor; for example, we can know the market share of *the top 20 corridors by market share plus the four corridors highlighted in the 2003 study* (see Figure 6.11) as well as the percentage of shopping trips captured by each corridor (see Figure 6.12).[54] Insufficient sample size prevents a more definitive set of conclusions that can be drawn from such data, but nevertheless it is informative to view household survey shopping trips at this level of detail. We note, for example, the relative strength of the Center City retail centers, even though this "market share" calculation does not include the heavy amount of shopping done by non-City residents who are in town for work or pleasure, but who were not surveyed as part of this study. We also note the popularity of auto-oriented corridors with multiple large-scale retail options, such as Aramingo Avenue, Quartermaster Plaza, and Snyder Plaza.

Identifying market share by corridor helps identify strong-performing corridors. The two Center City corridors and Aramingo Avenue were far and away the top three corridors by this indicator.

Figure 6.11 – Top 20 Corridors by Percent of 2007 Household Survey Shopping Trips Captured, Plus the Four Corridors Analyzed in 2003 Study

Rank	*Corridor*	*Mkt Share*	*Type*	*Character*
1	Market West - Center City	6.1%	Regional Center	Pedestrian/Transit Corridor
2	Aramingo Avenue	4.5%	Community Center	Mixed Character
3	Market East - Center City	4.1%	Superregional Center	Pedestrian/Transit Corridor
4	Castor and Cottman	4.0%	Community Center	Mixed Character
5	Snyder Plaza & Vicinity[55]	3.0%	Community Center	Free-Standing Center
6	24th Street/Orgen-Passyunk[56]	2.3%	Community Center	Mixed Character
7	Frankford Ave.-Lower Mayfair	2.3%	Community Center	Mixed Character
8	Grant and the Boulevard[57]	2.1%	Community Center	Mixed Character
9	One and Olney Square	1.5%	Community Center	Free-Standing Center

[54] These results can be depicted in two ways: market share of corridor trips (as is shown in this chapter) and market share of all trips (i.e. trips to a given corridor divided by all trips, including those that did not end up in a corridor). Of course, the relative ranking of corridors by market share is the same for both depictions. Here we depict market share of corridor trips; see Appendix AG for a full ranking by corridor of household survey market share of corridor trips and of all trips,.

[55] Includes Columbus Commons.

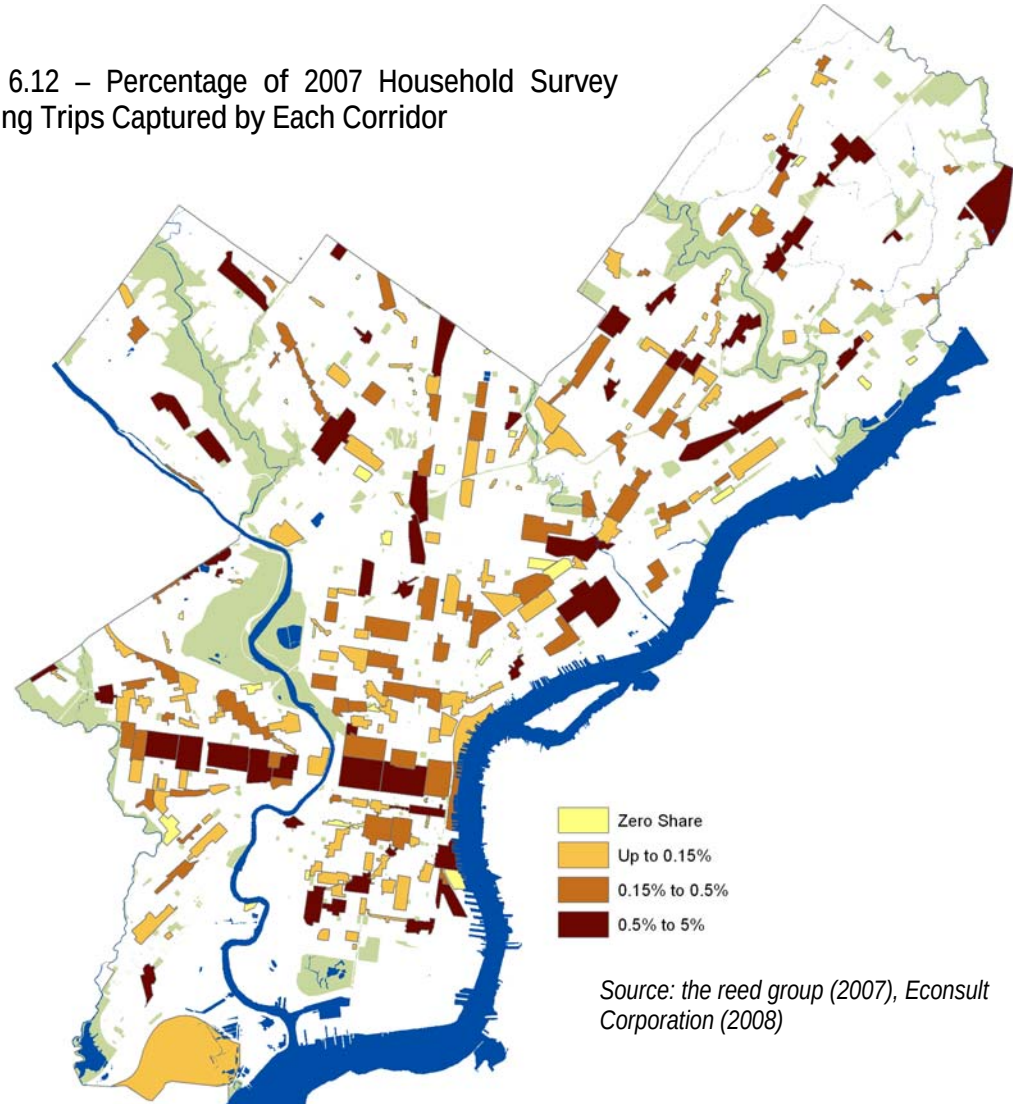
[56] To include Quatermaster Site.

[57] Includes Whitman site.

Rank	*Corridor*	*Mkt Share*	*Type*	*Character*
10	Chelten Ave/Ogontz-Wister	1.4%	Neighborhood Subcenter	Pedestrian/Transit Corridor
10	Roosevelt Plaza & Vicinity	1.4%	Neighborhood Center	Auto-Oriented Strip
12	Ivy Ridge Center & Vicinity	1.4%	Community Center	Mixed Character
13	Chestnut Hill	1.4%	Community Center	Mixed Character
14	56th and Market	1.3%	Neighborhood Subcenter	Pedestrian/Transit Corridor
15	Bustleton and Red Lion	1.3%	Neighborhood Center	Mixed Character
16	Whitman Plaza & Vicinity	1.3%	Community Center	Mixed Character
16	Franklin Mills	1.3%	Superregional Center	Free-Standing Center
18	Sears/Cottman-Bustleton Center	1.2%	Regional Center	Mixed Character
19	Oxford and Levick	1.2%	Neighborhood Center	Auto-Oriented Strip
20	Reed and Passyunk	1.2%	Neighborhood Center	Mixed Character
24	North 22nd St/Hope Plaza	1.0%	Neighborhood Center	Mixed Character
59	Ninth Street - Italian Market	0.5%	Specialty Center	Pedestrian/Transit Corridor
62	50th and Baltimore	0.4%	Neighborhood Center	Pedestrian/Transit Corridor
114	Frankford Ave./Margaret-Orthodox	0.2%	Community Center	Pedestrian/Transit Corridor

Source: the reed group (2007), Econsult Corporation (2008)

Figure 6.12 – Percentage of 2007 Household Survey Shopping Trips Captured by Each Corridor



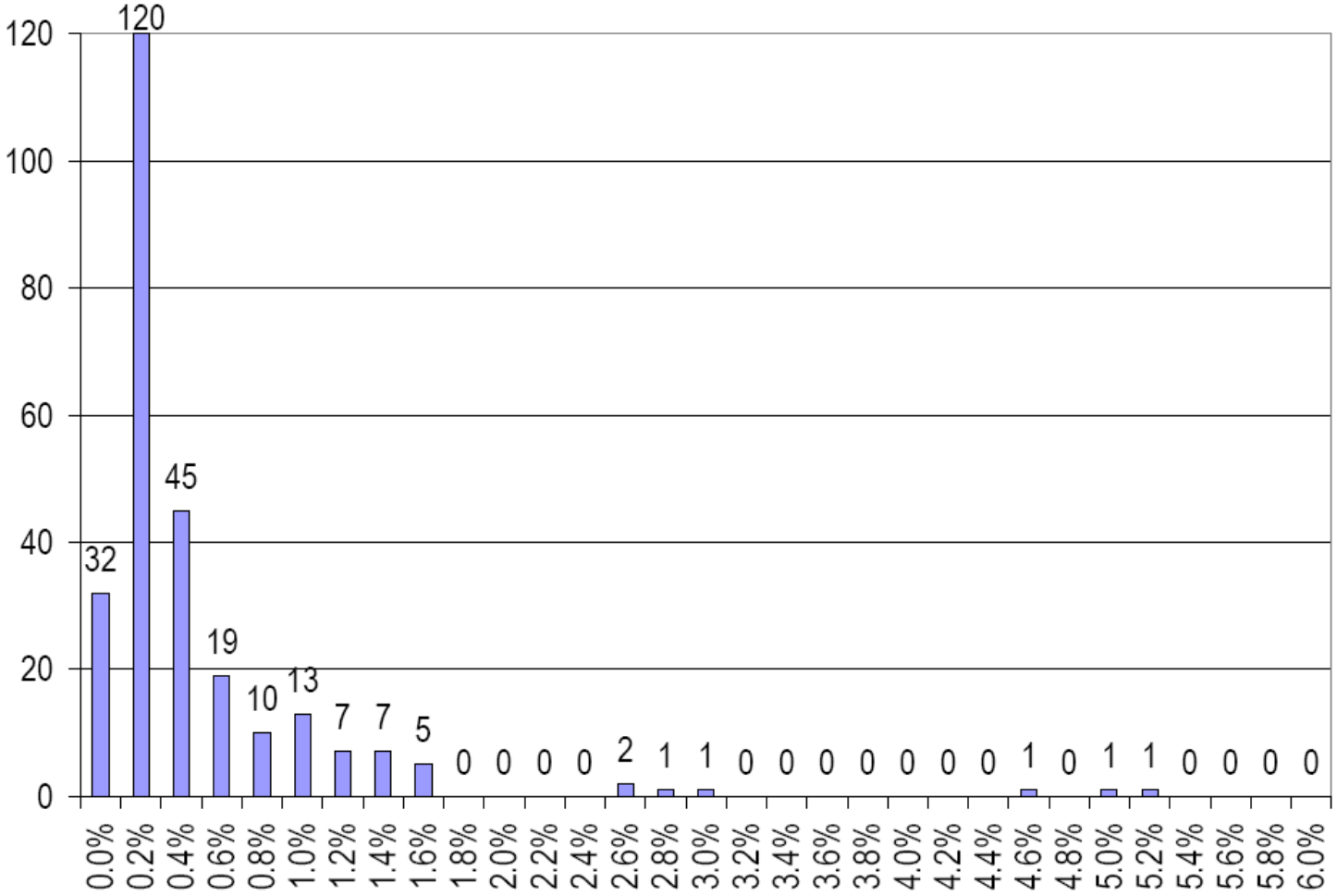
Source: the reed group (2007), Econsult Corporation (2008)

Finally, it is clear that *no one corridor type or character dominates Philadelphia retail*, but that local shoppers frequent a variety of retail centers. The top tier of corridors by market share represents a variety of corridor types and characters.

No one corridor type or character characterizes Philadelphia retail, although a very high proportion of corridors receive very little commercial activity: 30+ received no trips at all, and an additional 120 had a market share of less than 0.2 percent

At the other end of performance, notably a vast majority of the 265 retail centers identified by PCPC received less than one fifth of one percent of the shopping trips contained within our household survey: 32 (12 percent) received no trips at all, and an additional 120 (45 percent) had a market share between 0 and 0.2 percent (see Figure 6.13).

Figure 6.13 – Distribution of Household Survey Market Share by Corridor



Source: the reed group (2007), Econsult Corporation (2008)

In other words, there are a few corridors in Philadelphia that enjoy an extremely high level of retail activity, and a lot of corridors that enjoy *low levels of retail activity.* To put this perspective, consider that, at 265 distinct retail centers, the average market share of corridor trips is about 0.4 percent. Thus, there are three corridors (Aramingo Avenue and the two Center City corridors) that enjoyed ten times that share, and over 150 that enjoyed half or less that share.[58]

[58] These distributions of shoppers' destinantions, when combined with various corridor attributes as discussed in chapters 2 through 5, enable the construction of our shopper choice model, which is discussed in further detail in Section II.

6.6 Comparing Consumer Choice Performance

As household survey results are the first of our three corridor success measures, we can now begin to look at the effect of various characteristics, competition, and interventions on shopping patterns at a corridor-by-corridor level. Since our household survey data is time-invariant, we can only understand spatial patterns; in the ensuing chapters on retail sales characteristics and real estate characteristics, we are able to make comparisons and infer relationships across both time and space.

We can look at cross-tabulations of household survey market share by a number of different corridor attributes; while these results do not prove causation or correlation, it is useful to see how corridors perform across a range of characteristics.

We consider the effect of the following corridor characteristics:

- How many arts organizations does it house – the more arts organizations, the higher the market share
- How accessible is it by transit – the more accessible, the higher the market share
- How many murders took place there – very high murder density is associated with lower market shares
- What is the income density – note that the lower and higher levels have higher market shares
- What proportion of nearby residents live in poverty – results are inconclusive here
- How many large-scale chain retailers are nearby – the more of this type of retail type, the higher the market share
- How many chain drug stores does it house – the more of this type of retail type, the higher the market share
- How many chain grocery stores are nearby – the more of this type of retail type, the higher the market share
- How many other corridors are nearby – the more nearby corridors, the higher the market share
- How many City interventions has it received – the more City interventions a corridor has received, the higher the market share, except if it is in the highest range of City interventions
- How many non-City interventions has it received – results are inconclusive here

Importantly, we note that the cross tabulations above are simply *aggregations of household survey market share by corridor, sorted by various corridor categorizations*. They do not necessarily demonstrate causation or even correlation, but simply give a sense of how corridors with different characteristics perform relative to one another in terms of capturing shopping trips. Our econometric work in Section II demonstrates what effect these variables have on shopping trips, when holding other variables constant. Thus, if there is a variable here that appears positive or negative but that washes it in our regressions, that simply mean that variable does not necessarily lead to positive or negative outcomes, merely that it is collinear with some other, more influential explanatory variable.

7.0 RETAIL SALES

7.1 Overview

Tax data, while highly sensitive and therefore difficult to obtain and analyze, can provide a vivid understanding of corridor performance over time, to the extent that important indicators such as *retail sales levels and number of establishments can be tracked on a year-to-year basis*. In fact, Econsult was given access by the City's Revenue Department to Business Privilege Tax returns from 1995 to 2005. We then calculated for each year the total sales within each corridor. This provides a useful comparison across corridors as well as across time.

Tax data, though difficult to process, provides a useful comparison of corridor performance across space and time.

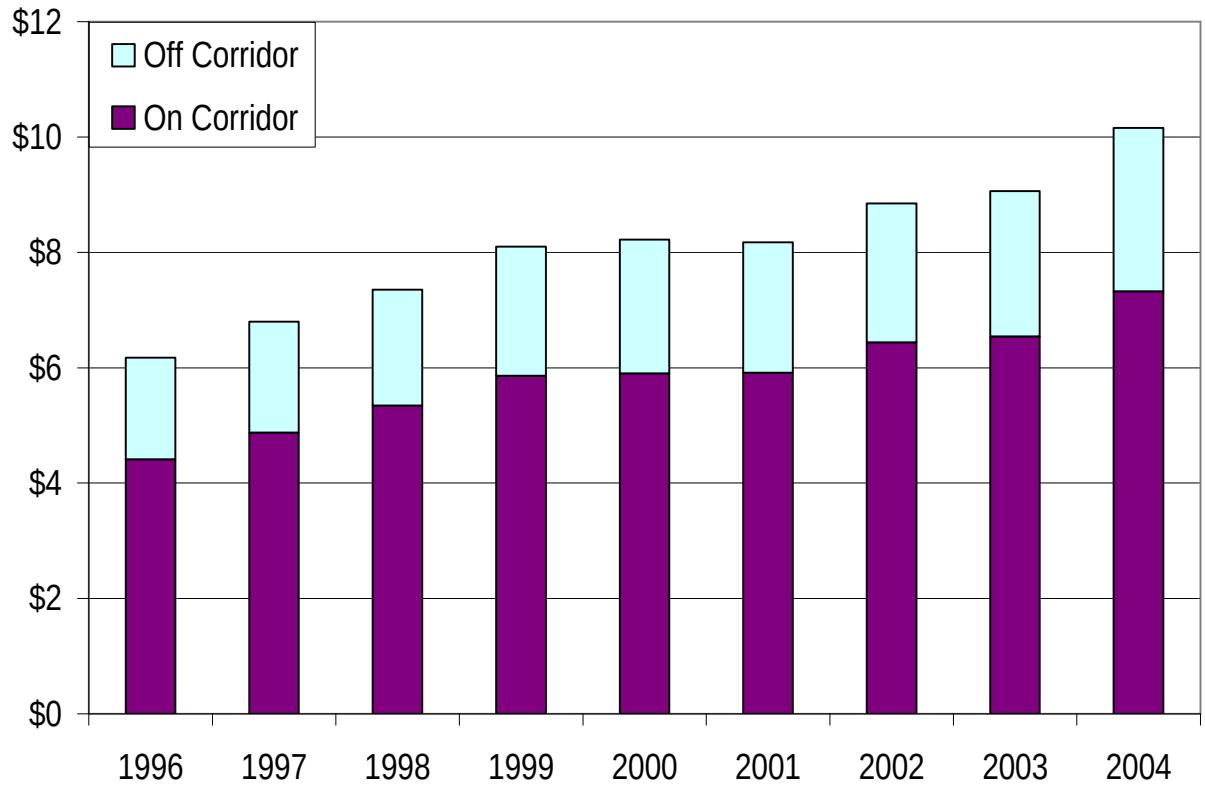
The Business Privelege Tax data were recorded to serve the purpose of revenue collection, not corridor measurement, and therefore required considerable manipulation before being useful for the purpose of this project.

7.2 Citywide Performance

We can measure corridor retail activity throughout the City across time and space by looking at retail sales levels (corridor sales grew steadily from $4 billion in 1996 to $7 billion in 2004), the number of establishments, and the number of "births" (new stores that did not previously exist) and "deaths" (stores that close or move) within corridor boundaries (see Figure 7.1, Figure 7.2, and Figure 7.3). We can also depict this information at the corridor level (see Figure 7.4 and Figure 7.5).[59] Note, for example, the ascendancy over time of auto-oriented corridors such as Snyder Plaza and Aramingo Avenue.

Corridor sales grew steadily from $4 billion in 1996 to $7 billion in 2004, and in particular auto-oriented corridors grew impressively.

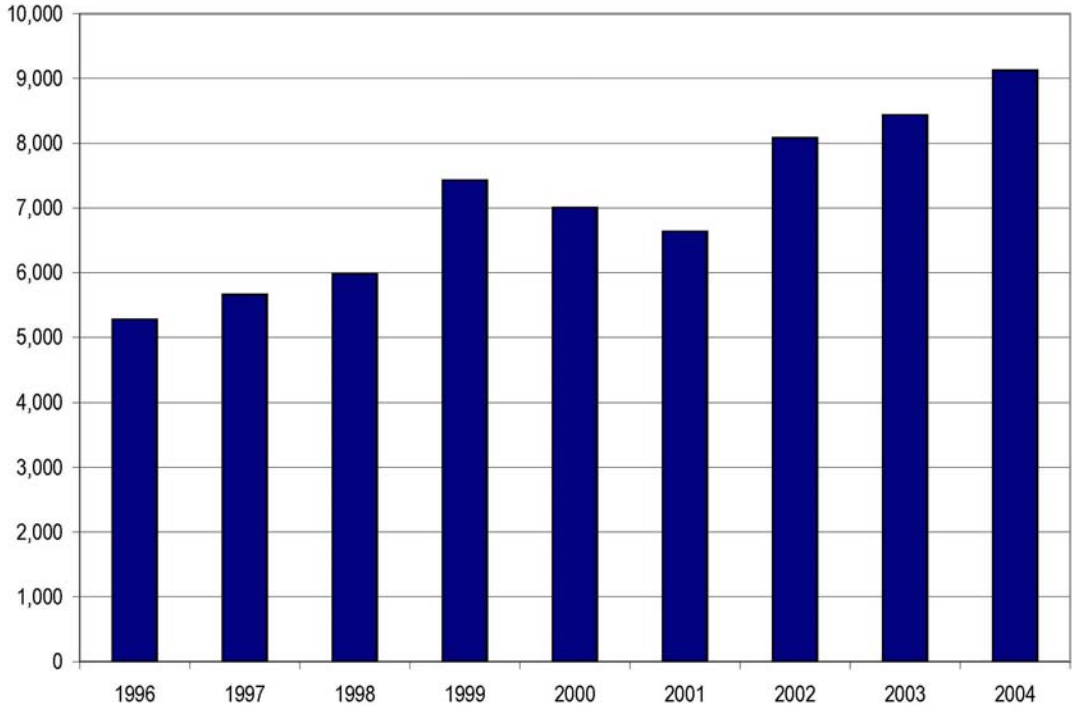
Figure 7.1 – Retail Sales Within Philadelphia Corridors (in $ B)



Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

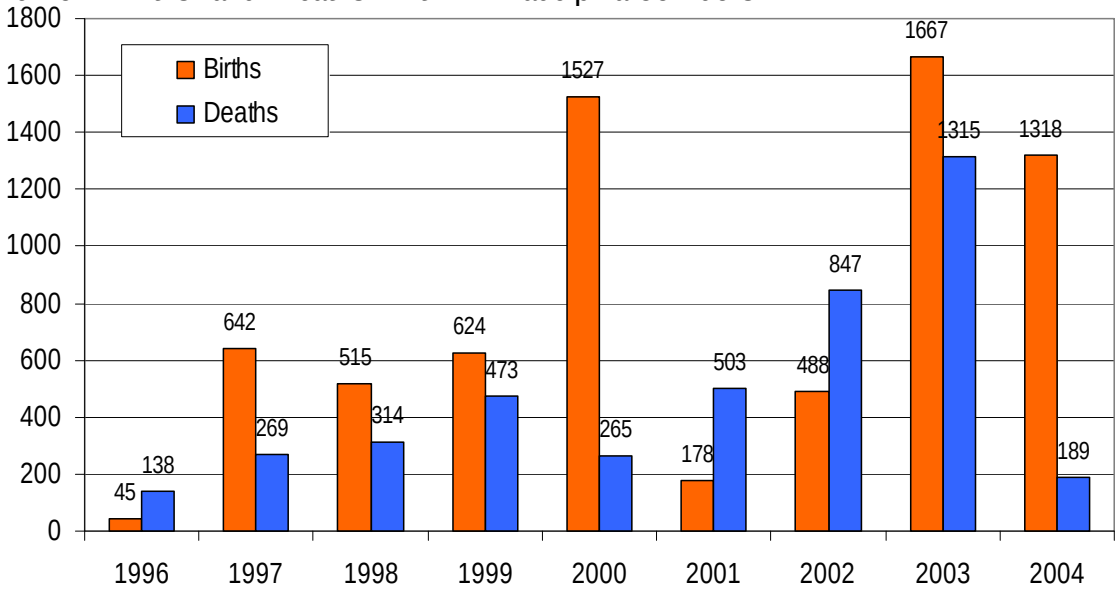
[59]See Appendix AI (retail sales levels), Appendix AJ (rettail sales market share), AK (same-store sales growth), Appendix AL (number of establishments), Appendix AM (number of "births"), and Appendix AN (number of "deaths") for more retail sales results by corridor year. In some cases, we have trimmed our date range from 1995-2005 to 1996-2004 to minimize distortions from the front and back end of our study period.

Figure 7.2 – Number of Establishments Within Philadelphia Corridors



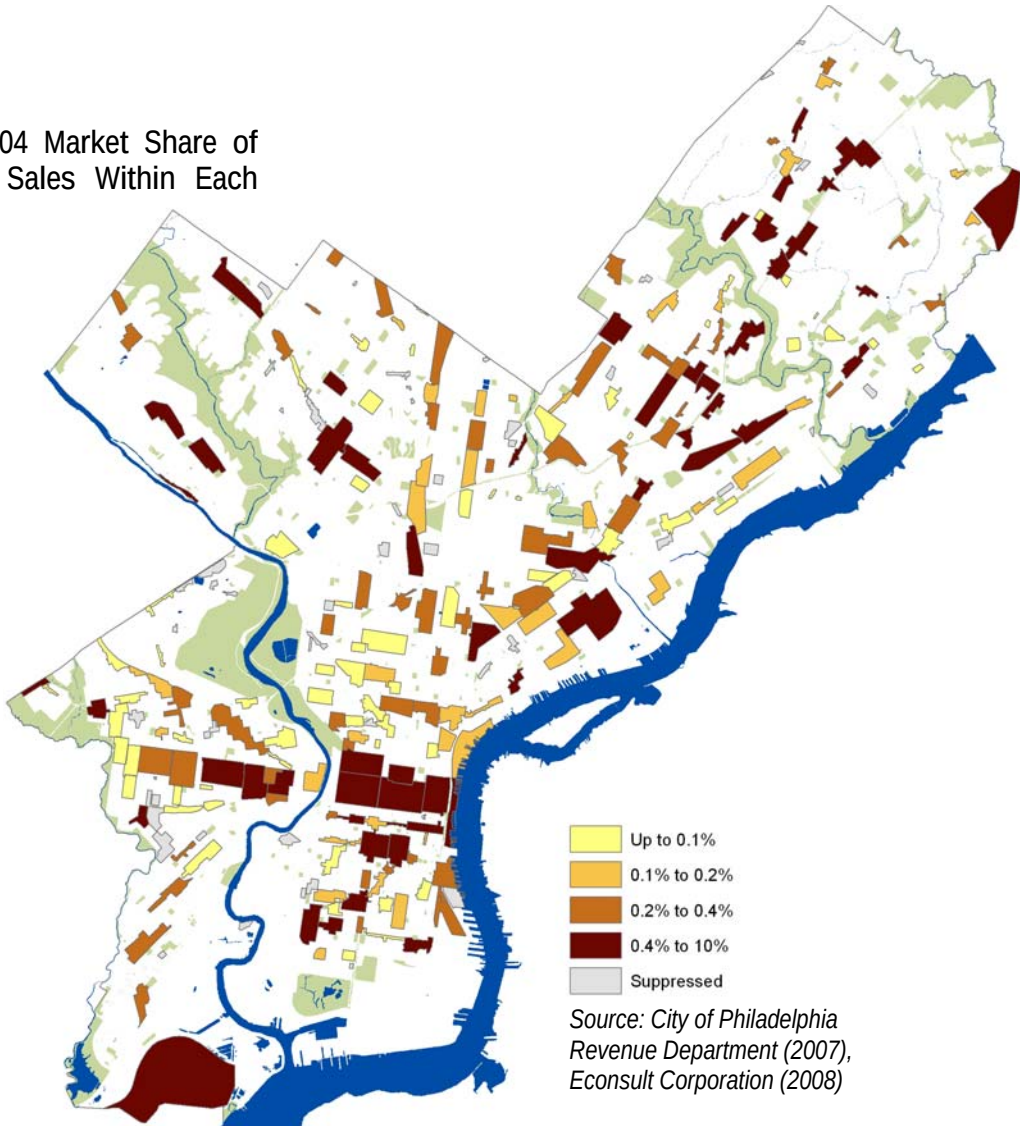
Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

Figure 7.3 – "Births" and "Deaths" Within Philadelphia Corridors



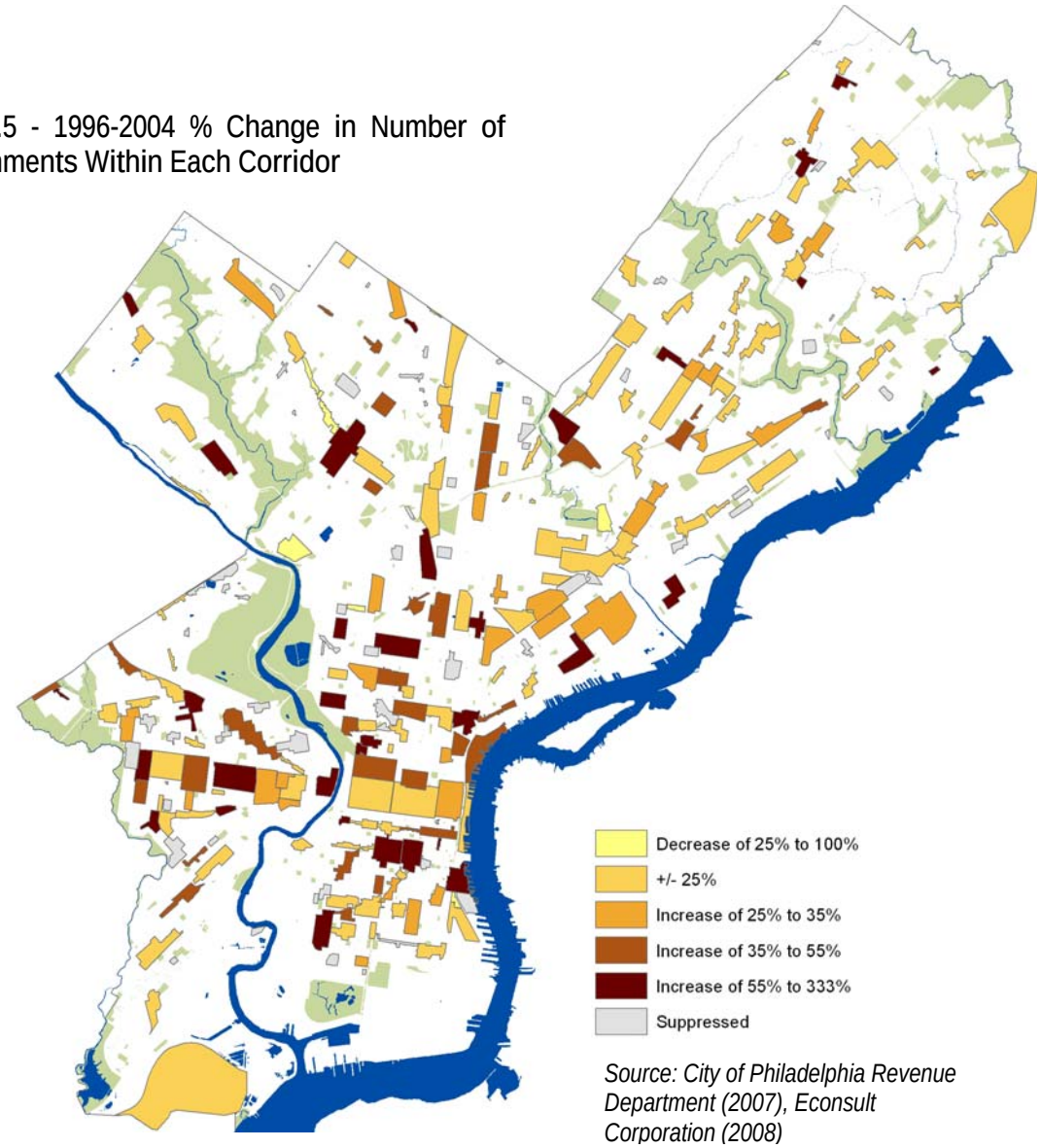
Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

Figure 7.4 – 2004 Market Share of Corridor Retail Sales Within Each Corridor



Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

Figure 7.5 - 1996-2004 % Change in Number of Establishments Within Each Corridor



Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

7.3 Corridor-Level Perspective

The correlation between these various City and non-City interventions on corridor success will be further investigated in Section II. For now, we can take a closer look at the four corridors analyzed in our December 2003 study (see Figure 7.6, Figure 7.7, and Figure 7.8). Of the four corridors, retail sales at Frankford Avenue grew the fastest, due in no small part to the completion of the reconstruction of that end of the Market-Frankford Line.

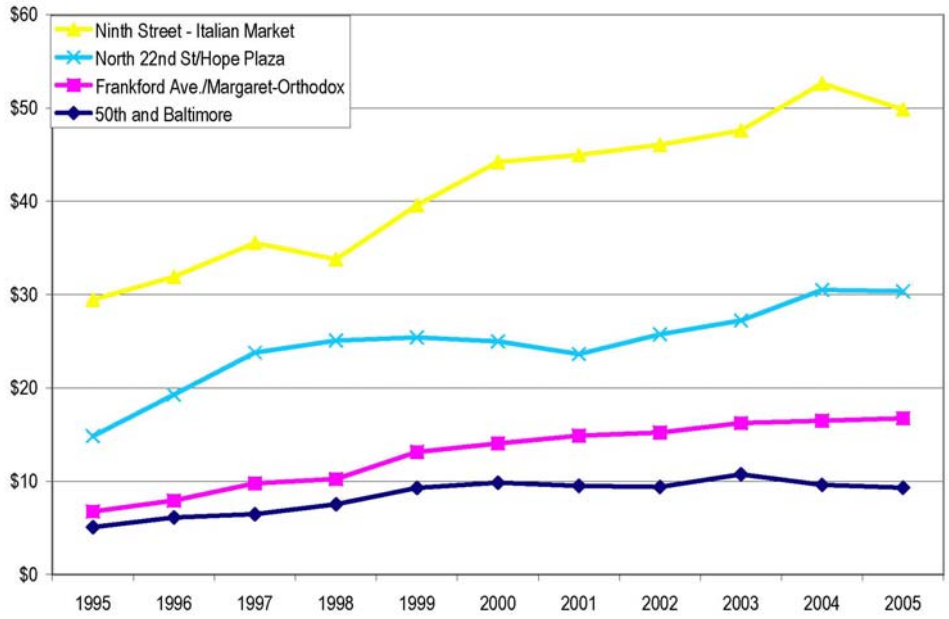
We can depict retail sales levels and counts of establishments at the single-corridor level.

Figure 7.6 – Revenue Department Data for Selected Corridors

Commercial Corridor	*2004 Philadelphia Sales ($M)*	*1996 Philadelphia Sales ($M)*	*1996-2004 % Change in Philadelphia Sales*
Frankford Ave.	$16	$8	100%
North 22nd Street	$30	$19	58%
Baltimore Ave.	$10	$6	67%
Washington Ave.	$53	$32	66%

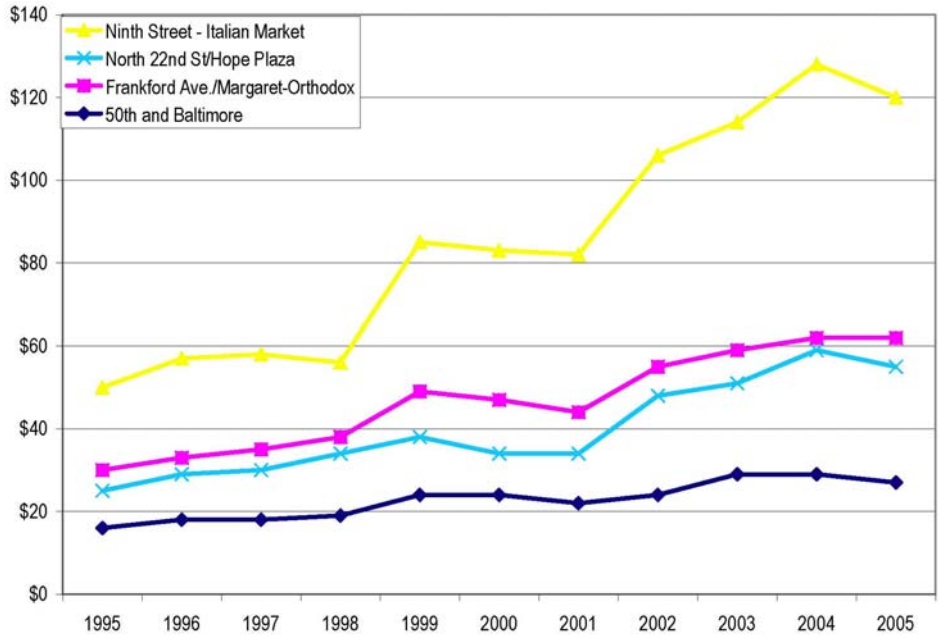
Source: City of Philadelphia Department of Revenue (2007)

Figure 7.7 –Retail Sales for Selected Corridors (in $M)



Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

Figure 7.8- Number of Establishments for Selected Corridors



Source: City of Philadelphia Revenue Department (2007), Econsult Corporation (2008)

Finally, as with household survey results, we can depict the top corridors in terms of market share of retail sales that ended up in a corridor in Philadelphia (see Figure 7.9). We can also depict the top corridors in terms of change in market share of retail sales over time (see Figure 7.10).[60] Note the prominence of the two core Center City corridors, which were far and away the top two corridors by total retail sales and together accounted for about a quarter of all corridor retail sales and about 15 percent of citywide retail sales.

We can rank corridors by 2004 retail sales levels and by 1996-2004 changes in levels; the two core Center City corridors were far and away the top two corridors by total retail sales.

Figure 7.9 – Top 10 Corridors by 2004 Retail Sales Levels (in $M)

Rank	*Corridor Name*	*Sales in 2004 ($M)*	*Type*	*Character*
1	Market West - Center City	$990	Regional Center	Pedestrian/Transit
2	Market East - Center City	$685	Superregional Center	Pedestrian/Transit
3	Frankford Ave.-Lower Mayfair	$169	Community Center	Free-Standing
4	Pier 70 Plaza	$166	Community Center	Free-Standing
5	Franklin Mills	$162	Community Center	Mixed
6	Aramingo Avenue	$158	Community Center	Mixed
7	42nd-49th/Market-Locust	$129	Community Center	Mixed
8	Old City/The Bourse	$123	Specialty Center	Pedestrian/Transit
9	Chestnut Hill	$114	Regional Center	Mixed
10	Boulevard Plaza	$111	Community Center	Mixed

Source: City of Philadelphia Department of Revenue (2007), Econsult Corporation (2008)

[60] Any corridor-year in which a corridor had less than five establishments had to be suppressed, so such corridor-years were excluded from these rankings.

Figure 7.10 – Top 10 Corridors by 1996-2004 Change in Retail Sales Levels

Rank	*Corridor Name*	*Pct. Change*	*Type*	*Character*
1	46th and Baltimore	1370%	Neighborhood Subcenter	Pedestrian/Transit
2	South and Grays Ferry	1327%	Neighborhood Center	Pedestrian/Transit
3	Washington Avenue West	588%	Specialty Center	Auto-Oriented
4	54th and Woodland	452%	Neighborhood Center	Pedestrian/Transit
5	Tenth and Snyder and Vicinity	424%	Neighborhood Subcenter	Pedestrian/Transit
6	Bustleton and Red Lion	410%	Neighborhood Center	Mixed
7	Frankford Ave/Bridge-Pratt	368%	Neighborhood Center	Pedestrian/Transit
8	Packer Park	357%	Neighborhood Center	Free-Standing
9	Broad and Stenton/Godfrey	303%	Neighborhood Center	Auto-Oriented
10	Chester Avenue	287%	Neighborhood Center	Pedestrian/Transit

Source: City of Philadelphia Department of Revenue (2007), Econsult Corporation (2008)

7.4 Comparing Consumer Choice Data with Retail Sales Data

We can compare market share of household survey shopping trips with market share of retail sales.

We can further replicate some of the visuals from Chapter 6, which depicted the geographic distribution of shopping trips, as per the 2007 household survey. In this case, instead of the raw number of shopping trips, we are depicting the total retail sales dollar amounts (see Figure 7.11, Figure 7.12, Figure 7.13, and Figure 7.14). Note the differences between shopping trip market share and retail sales market share for Center City and Far Northeast Philadelphia, reflecting the shopping activity of non-residents, which was not accounted for in our household survey but which was included in retail sales figures. In the opposite direction, poorer areas like Olney / Oak Lane and West Philadelphia have lower retail sales market share than shopping trip market share, because of a relative dearth of non-resident shopping and of high-ticket offerings.

Figure 7.11 – Distribution of All 2004 Retail Sales, by Destination

Trip Destination Type	*% of All Shopping Trips*	*% of all 2004 Retail Sales*
Off corridor	6%	28%
On corridor	94%	72%

Source: the reed group (2007), City of Philadelphia Department of Revenue (2007)

Figure 7.12 – Market Share of 2004 Retail Sales by Planning Analysis Section

Planning Analysis Section	*Number of Corridors*	*% 2004 Reported Revnues from Corridors*	*% of 2007 Household Survey Shopping Trips to Corridors*
Bridesburg; Kensington; Richmond	16	5.82%	7.55%
Center City	11	29.73%	13.55%
Far Northeast Philadelphia	31	13.16%	13.18%
Germantown; Chestnut Hill	13	3.75%	5.31%
Lower North Philadelphia	25	2.99%	3.16%
Near Northeast Philadelphia	41	13.85%	18.31%

Planning Analysis Section	*Number of Corridors*	*% 2004 Reported Revnues from Corridors*	*% of 2007 Household Survey Shopping Trips to Corridors*
Olney; Oak Lane	28	4.14%	8.00%
Roxborough; Manayunk	5	3.24%	3.08%
South Philadelphia	33	10.96%	11.97%
Southwest Philadelphia	10	1.53%	1.27%
Upper North Philadelphia	11	2.41%	4.23%
West Philadelphia	41	8.42%	10.37%

Source: City of Philadelphia Department of Revenue (2007)

Figure 7.13 – Market Share of 2004 Retail Sales by Corridor Type

Corridor Type	*Number of Corridors*	*% 2004 Reported Revenues from Corridors*	*% of 2007 Household Survey Shopping Trips to Corridors*
Neighborhood Subcenter	79	5.31%	6.15%
Neighborhood Center	119	25.56%	32.87%
Community Center	48	33.05%	44.08%
Regional Center	4	15.37%	8.26%
Superregional Center	2	11.56%	5.29%
Specialty Center	13	7.93%	3.13%

Source: City of Philadelphia Department of Revenue (2007)

Figure 7.14 – Market Share of 2004 Retail Sales by Corridor Character

Corridor Character	*Number of Corridors*	*% 2004 Reported Revenues from Corridors*	*% of 2007 Household Survey Shopping Trips to Corridors*
Pedestrian / transit	111	44.48%	32.69%
Auto-oriented	32	7.95%	10.55%
Free-standing	45	13.42%	13.78%
Specialty	1	0.34%	0.00%
Mixed	76	33.81%	42.98%

Source: City of Philadelphia Department of Revenue (2007)

No one corridor type or characterizes Philadelphia retail, although a very high proportion of corridors receive very little commercial activity: 50 had suppressed data due to too few stores, and an additional 100+ has market shares of less than 0.2 percent.

Finally, it is clear that no one corridor type or character dominates Philadelphia retail, but that local shoppers frequent a variety of retail centers. The top tier of corridors by market share represents a variety of corridor types and characters. Notably, a vast majority of the 265 retail centers identified by PCPC received less than one fifth of one percent of the retail sales captured by corridors: 50 (19 percent) had suppressed data due to too few stores, and an additional 103 (39 percent) had a market share between 0 and 0.2 percent (see Figure 7.15). In other words, as with the household survey data, a lot of corridors are enjoying very little retail activity.

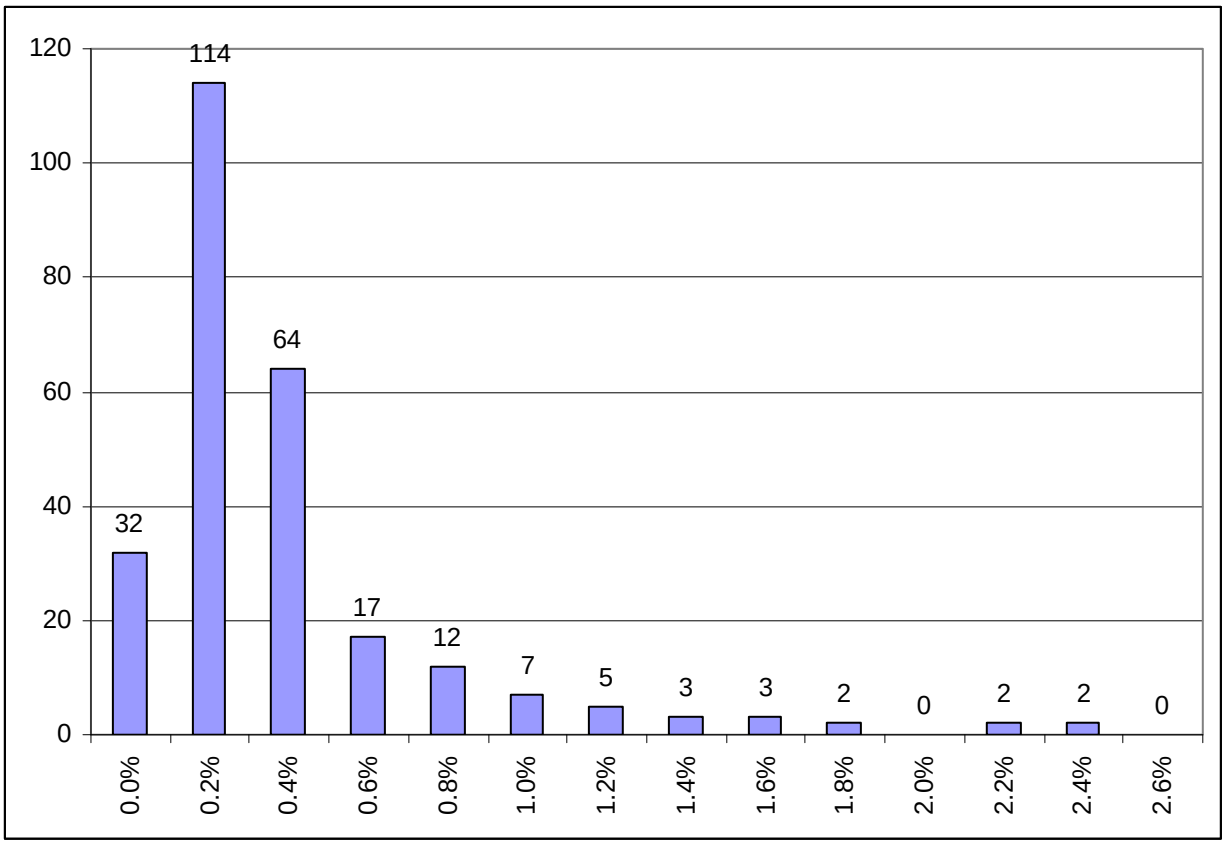
This distribution is similar to what we saw with our household survey market share results. A significant portion of corridors have essentially no activity: 32 (12 percent) received no household survey shopping trips, and retail sales data for 50 (19 percent) were suppressed because the corridor had less than five establishments file returns. At the other end of the spectrum, the overwhelmingly high performers were more or less the same for both performance indicators, although such regional draws as the two Center City corridors and Franklin Mills enjoyed even a greater scale of success in terms of retail sales levels, since that indicator includes shopping dollars by non-residents, while household survey shopping trips does not.[61]

Thus, as was the case with the distribution of household survey shopping trips, so it is with the distribution of retail sales, in that there are a few corridors in Philadelphia that enjoy an extremely high level of retail activity, and a lot of corridors that enjoy *low levels of retail activity.* To put this perspective, consider that, at 265 distinct retail centers, the average market share

[61] In general, there was fairly high correlation (about 0.6) between a corridor's household survey market share and its retail sales market share. As stated above, low-performing corridors in one indicator tended to be low-performing in the other, and high-performing corridors in one indicator tended to be high-performing in the other.

of corridor trips is about 0.4 percent. Thus, there are two corridors (the two Center City corridors) that enjoyed 20-25 times that share, and over 150 that enjoyed half or less that share.

Figure 7.15 – Distribution of 2004 Corridor Retail Sales Market Share by Corridor



Source: City of Philadelphia Department of Revenue (2007), Econsult Corporation (2008)
Does not include Market East or Market West corridors

7.5 Comparing Retail Sales Performance

As we did for the household survey results, we can aggregate retail sales by corridor, sorted by various corridor categorizations. Because the retail sales results are so similar in substance to the household survey results, we depict them side-by-side. Please see Appendix AV for these results.

We can look at cross-tabulations of retail sales levels by a number of different corridor attributes; while these results do not prove causation or correlation, it is useful to see how corridors perform across a range of characteristics, and to compare retail sales results with consumer choice results.

We consider the effect of the following corridor characteristics:

- How many arts organizations does it house – corridors with a cluster of arts organizations also have high retail sales numbers
- How accessible is it by transit – note the significant increase in retail sales market share for corridors with more bus and trolley lines
- How many murders took place there – not surprisingly, at high levels of murder density, retail sales market share drops significantly
- What is the income density – as with household survey shopping trip market share results, retail sales market share is mixed when it comes to income density, suggesting that corridor success does not necessarily depend on the amount of purchasing power nearby
- What proportion of nearby residents live in poverty – it is unclear from these results whether shoppers avoid poor neighborhoods or poor neighborhoods are not as able to sustain their local retail center, but the pattern is clear that the higher the poverty levels, the lower the retail sales market share
- How much has borrower income changed over time – As a neighborhood gets richer or poorer, what happens to retail sales in the corridor
- How many large-scale chain retailers are nearby – as with household survey shopping trip market share results, high retail sales market shares are enjoyed by corridors with lots of large-scale chain retailers, which makes sense since those chains seek to select areas of high commercial activity
- How many chain drug stores does it house – as with household survey shopping trip market share results, high retail sales market shares are enjoyed by corridors with lots of chain drug stores, which makes sense since those chains seek to select areas of high commercial activity

- How many chain grocery stores are nearby – interestingly, the effect of having lots of chain grocery stores does not appear to be as strong on retail sales market share as it is for large-scale chain retailers and chain drug stores, suggesting that grocery store location decisions have been at least somewhat sensitive to the need for reasonably nearby access to grocery products

- How many other corridors are nearby -- as with household survey shopping trip market share results, high retail sales market shares are enjoyed by corridors with lots of nearby corridors, suggesting that it is a good thing and not a bad thing to be in the midst of lots of retail activity

- How many City interventions has it received – results are mixed, for at least two reasons: 1) there are many such interventions considered here, and their scale is not accounted for; and 2) interventions may be equally likely to go to poorly-performing corridors, which brings down the median retail sales market share for that category of corridors

- How many non-City interventions has it received – as with City interventions, results are mixed, for at least the same two reasons

Importantly, we note that the depictions above are simply aggregations of retail sales market share by corridor, sorted by various corridor categorizations. They do not necessarily demonstrate causation or even correlation, but simply give a sense of how corridors with different characteristics perform relative to one another in terms of capturing shopping dollars. Our econometric work in subsequent chapters demonstrates what effect these variables have on shopping trips, when holding other variables constant. Thus, if there is a variable here that appears positive or negative but that washes it in our regression, that simply means that variable does not necessarily lead to positive or negative outcomes, merely that it is collinear with some other, more influential explanatory variable.

8.0 REAL ESTATE CHARACTERISTICS

8.1 Overview

As discussed earlier, *house prices are a good measure of the value of a particular location*, since what people are paying for when they buy a house is not just the structure itself but also its location, and the related amenities that come along with that location. Comparing house prices over time and between parts of the City can be a useful exercise, particularly because such data can be regressed against other events that take place at a given point in time and in a given location, such as corridor interventions or the introduction of various retail competitions.

Analyzing house prices is a good way to determine the extent to which a corridor is an amenity or a disamenity to its immediate neighborhood.

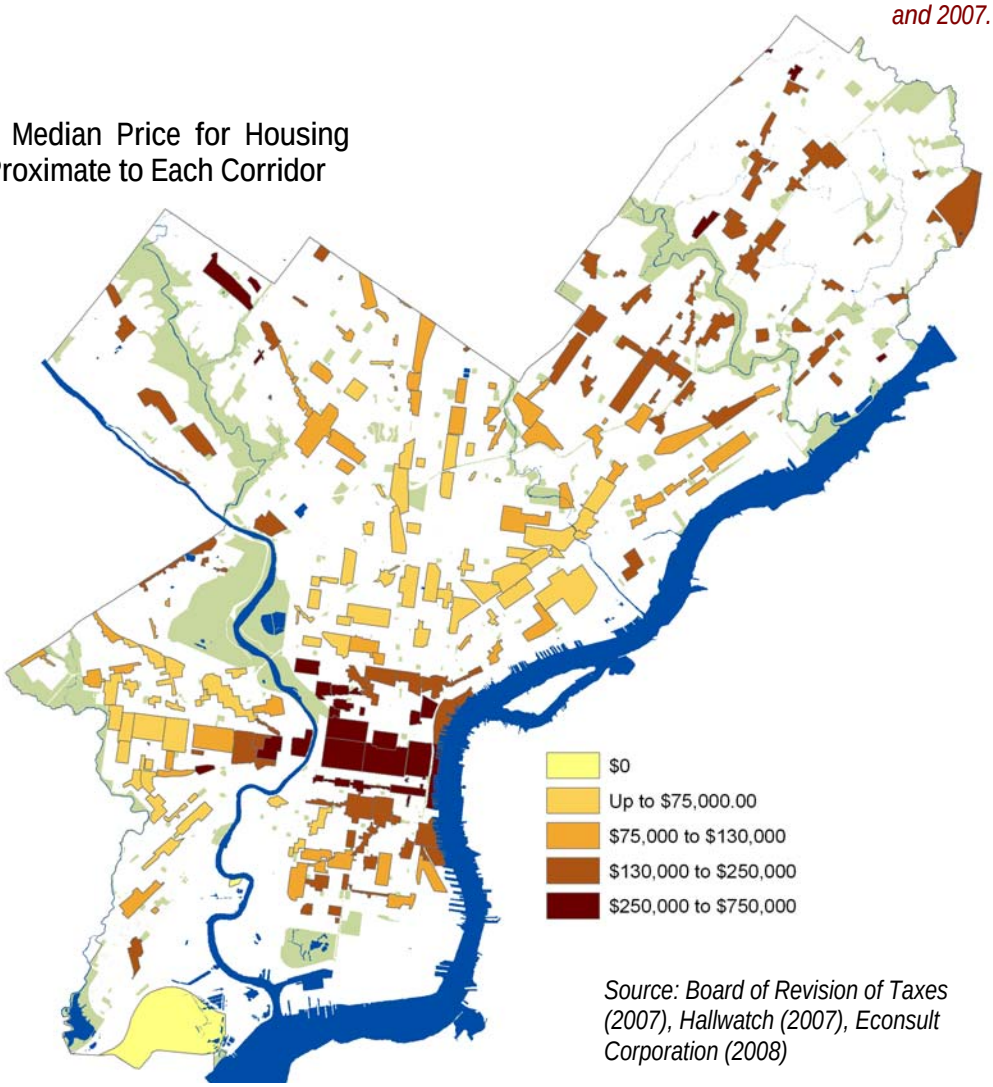
We consider the real estate characteristics of a corridor to be a determinant of corridor success. Because corridors are largely commercial in their land use, we will consider quarter-mile haloes around the boundaries of pedestrian/transit corridors, and half-mile haloes around the boundaries of all other corridors. Given that these distances represent the outer limits of a short walk or car ride, we feel they appropriately capture the boundaries that can be meaningfully associated with a given corridor.

8.2 House Prices

We begin by depicting a snapshot of average house prices for houses transacted at arms-length in 2007 within the aforementioned halo around each corridor.[62] Doing the same for 1995 transactions enables us to show the difference over time, yielding a good picture of how neighborhoods are valued and how that value is trending (see Figure 8.1 and Figure 8.2).[63]

We can look at average house prices near corridors in 2007, as well as changes in prices between 1995 and 2007.

Figure 8.1 – 2007 Median Price for Housing Units Transacted Proximate to Each Corridor

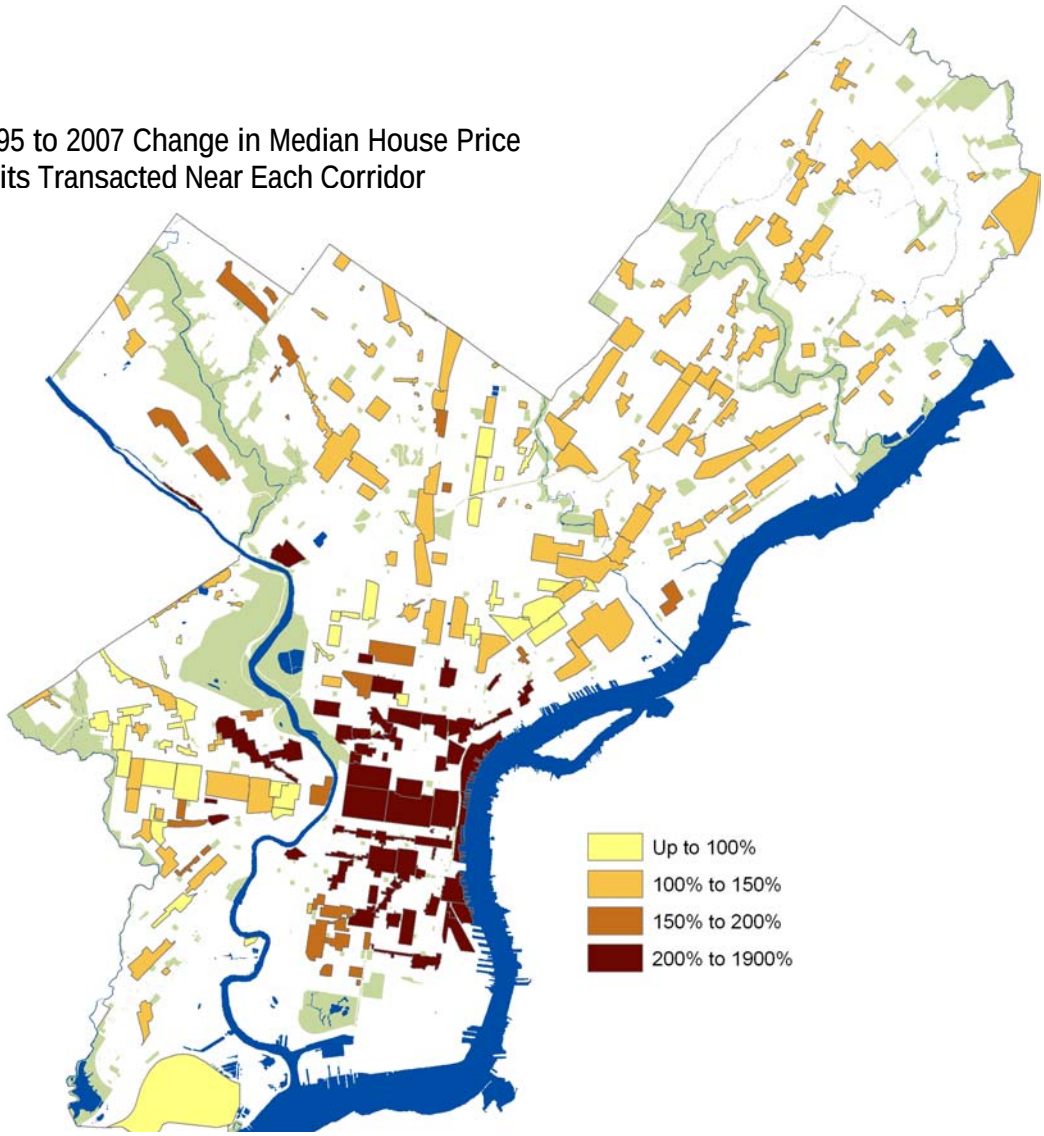


Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

[62] See Appendix AO for more information on real estate data sources.

[63] See Appendix AP, Appendix AQ, and Appendix AR for figures of median house sales price per year within corridor boundaries and within ¼ mile and ½ mile of corridor boundaries.

Figure 8.2 – 1995 to 2007 Change in Median House Price for Housing Units Transacted Near Each Corridor



A closer look at the four corridors we studied in December 2003 yields a couple of insights (see Figure 8.3, Figure 8.4, and Figure 8.5). First, all four neighborhoods partook in the real estate run-up during this decade. Secondly and clearly, the Italian Market neighborhood has enjoyed the highest price appreciation over time, particularly earlier this decade.

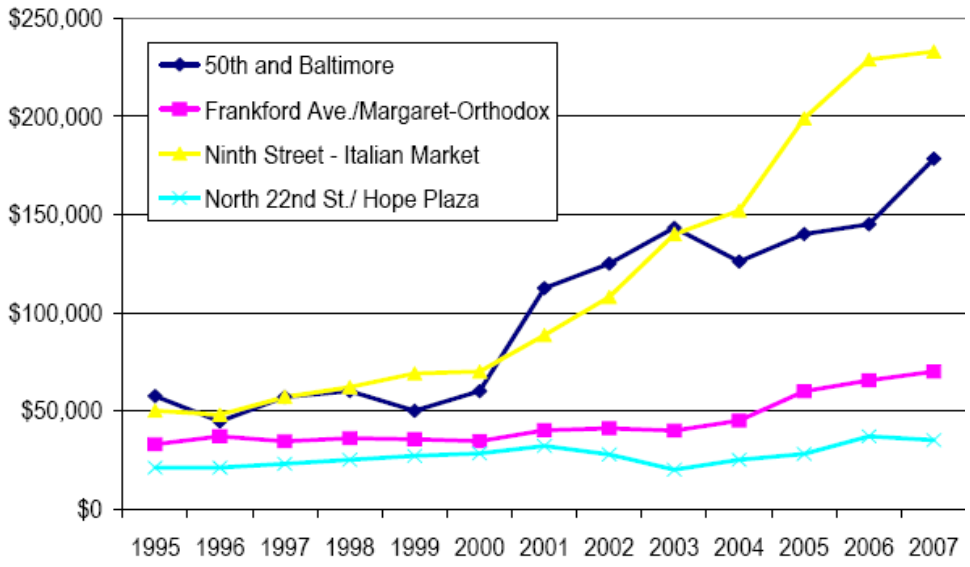
We can depict real estate price levels at the single-corridor level.

Figure 8.3 – Real Estate Data for Selected Corridors

Commercial Corridor	*2007 Median Price*	*1995 Median Price*	*1995-2007 % Change in Median*	*2007 Total # of Transactions*
Frankford Avenue	$70,000	$32,950	112%	211
North 22nd Street	$35,000	$21,000	67%	370
Baltimore Avenue	$178,394	$57,500	210%	132
Washington Avenue	$233,000	$50,000	366%	911

Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

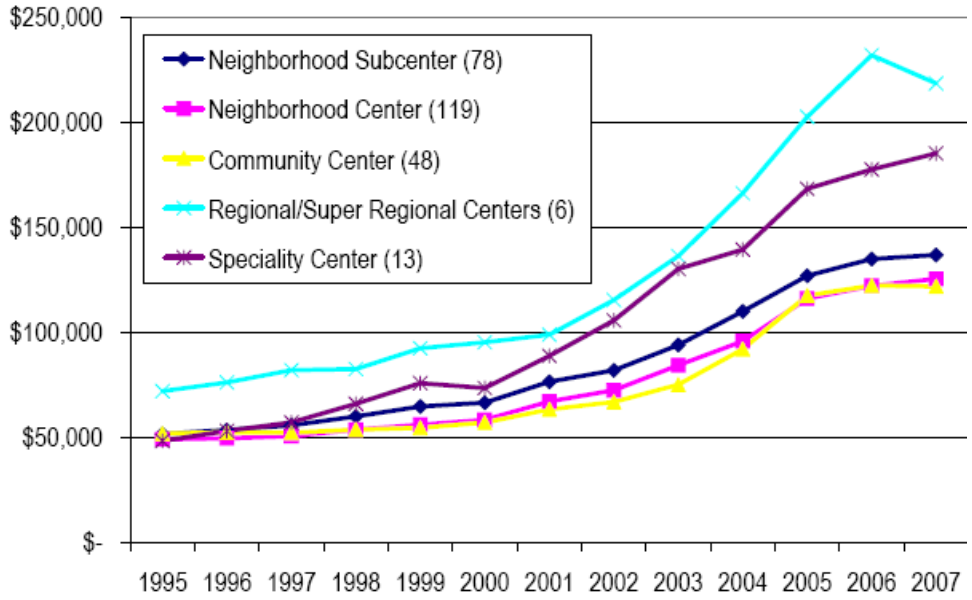
Figure 8.4 – Median Price Each Year for Housing Units Transacted Proximate to Four Corridors Analyzed in 2003 Study



Board of Revision of Taxes (2007), Hallwatch (2007), Econsult (2008)

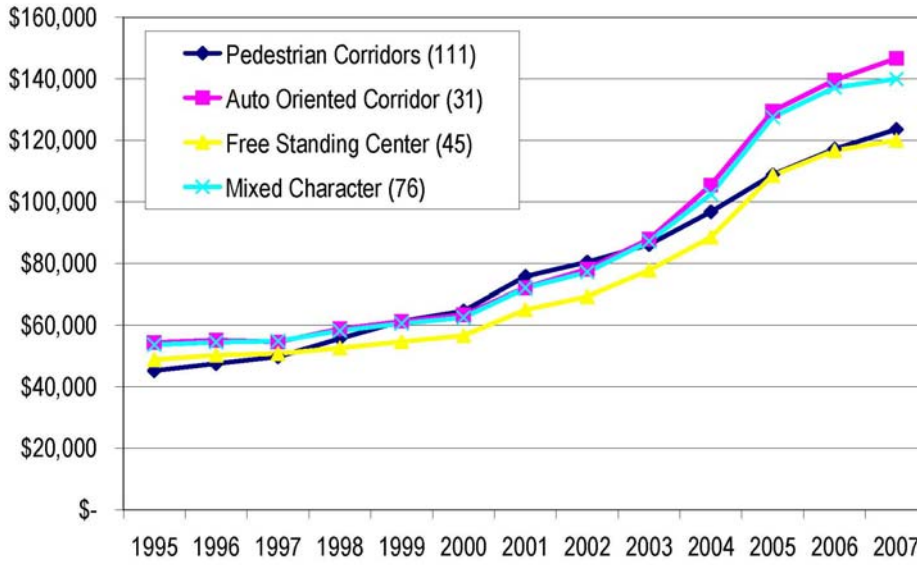
It is instructive to look at how real estate prices here moved near various classifications of corridors (see Figure 8.5, Figure 8.6, and Figure 8.7). Presenting the results this way provides a gauge of real estate transactions associated with different kinds of corridors. Note, For example, the impressive run-up in property values near Center City corridors.

Figure 8.5 – Median Price Each Year for Housing Units Transacted Proximate to Corridors, by Corridor Type



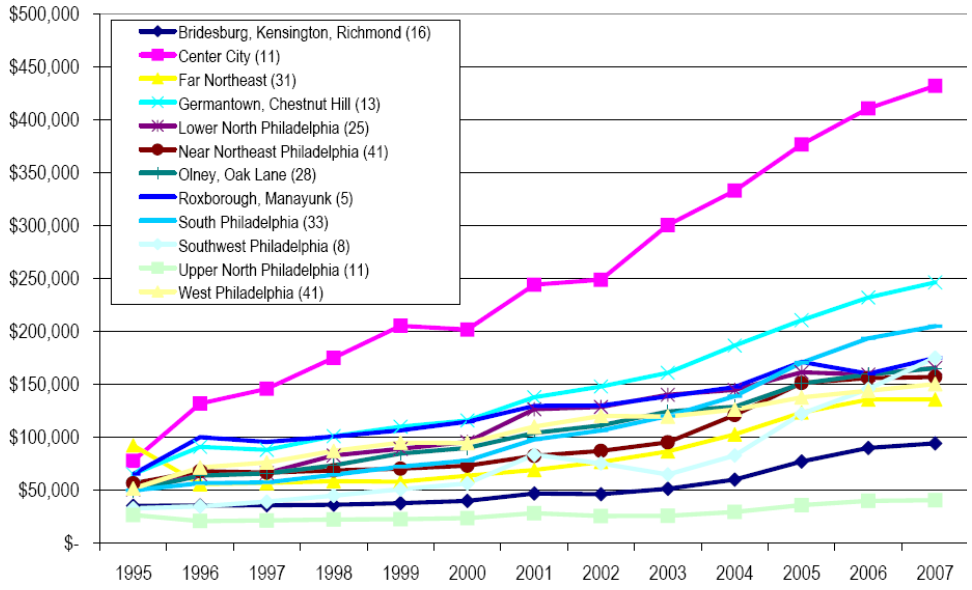
Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

Figure 8.6 – Median Price Each Year for Housing Units Transacted Proximate to Corridors, by Corridor Character



Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

Figure 8.7 – Median Price Each Year for Housing Units Transacted Proximate to Corridors, by Planning Analysis Section



Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

As with household survey results and retail sales results, we can depict the top corridors in terms of real estate values (see Figure 8.8). We can also depict the top corridors in terms of change in real estate values over time (see Figure 8.9).[64] As noted above, many of the corridors with high nearby property values are located in or near Center City.

We can rank corridors by 2007 average house prices and by 1995-2007 change in house prices; Center City corridors dominate the list of highest average house prices.

[64] Any corridor-year in which a corridor had less thanten transactions was excluded from these rankings.

Figure 8.8 – Top 10 Corridors by 2007 Median House Prices

Rank	*Corridor Name*	*2007 Median Price*	*Type*	*Character*
1	Old City/The Bourse	$750,000	Specialty Center	Pedestrian/Transit
2	5th and Delancey	$649,950	Neighborhood Subctr	Pedestrian/Transit
3	Market East-Center City	$510,000	Superregional Center	Pedestrian/Transit
4	Market West-Center City	$496,000	Regional Center	Pedestrian/Transit
5	Central Waterfront	$490,000	Specialty Center	Mixed
6	South Street/Front-8th	$470,000	Specialty Center	Pedestrian/Transit
7	Rodin Place and Vicinity	$469,950	Neighborhood Subctr	Pedestrian/Transit
8	South Fourth Street & Vicinity	$427,500	Specialty Center	Pedestrian/Transit
9	30th Street and Vicinity	$415,500	Specialty Center	Mixed
10	South Street/8th-12th	$415,000	Neighborhood Center	Pedestrian/Transit

Source: Board of Revision of Taxes (2007), *Econsult Corporation (2008)*

Figure 8.9 – Top 10 Corridors by 1995-2007 Change in Median Real Estate Values

Rank	*Corridor Name*	*Change Median Value*	*Type*	*Character*
1	2nd and Fairmount	559.8%	Neighborhood Subctr	Pedestrian/Transit
2	5th and Spring Garden	520.0%	Neighborhood Subctr	Mixed
3	Washington Avenue West	491.2%	Specialty Center	Auto- oriented
4	2nd and Girard	481.9%	Neighborhood Subctr	Mixed
5	Central Waterfront-North	458.4%	Specialty Center	Mixed
6	Riverview Plaza	419.4%	Community Center	Auto- oriented
7	Girard & Marshall	397.6%	Neighborhood Center	Mixed
8	Reed and Passyunk	387.8%	Neighborhood Center	Mixed
9	Broad and Washington	383.7%	Neighborhood Center	Mixed
10	Broad and Ridge	380.0%	Neighborhood Center	Pedestrian/Transit

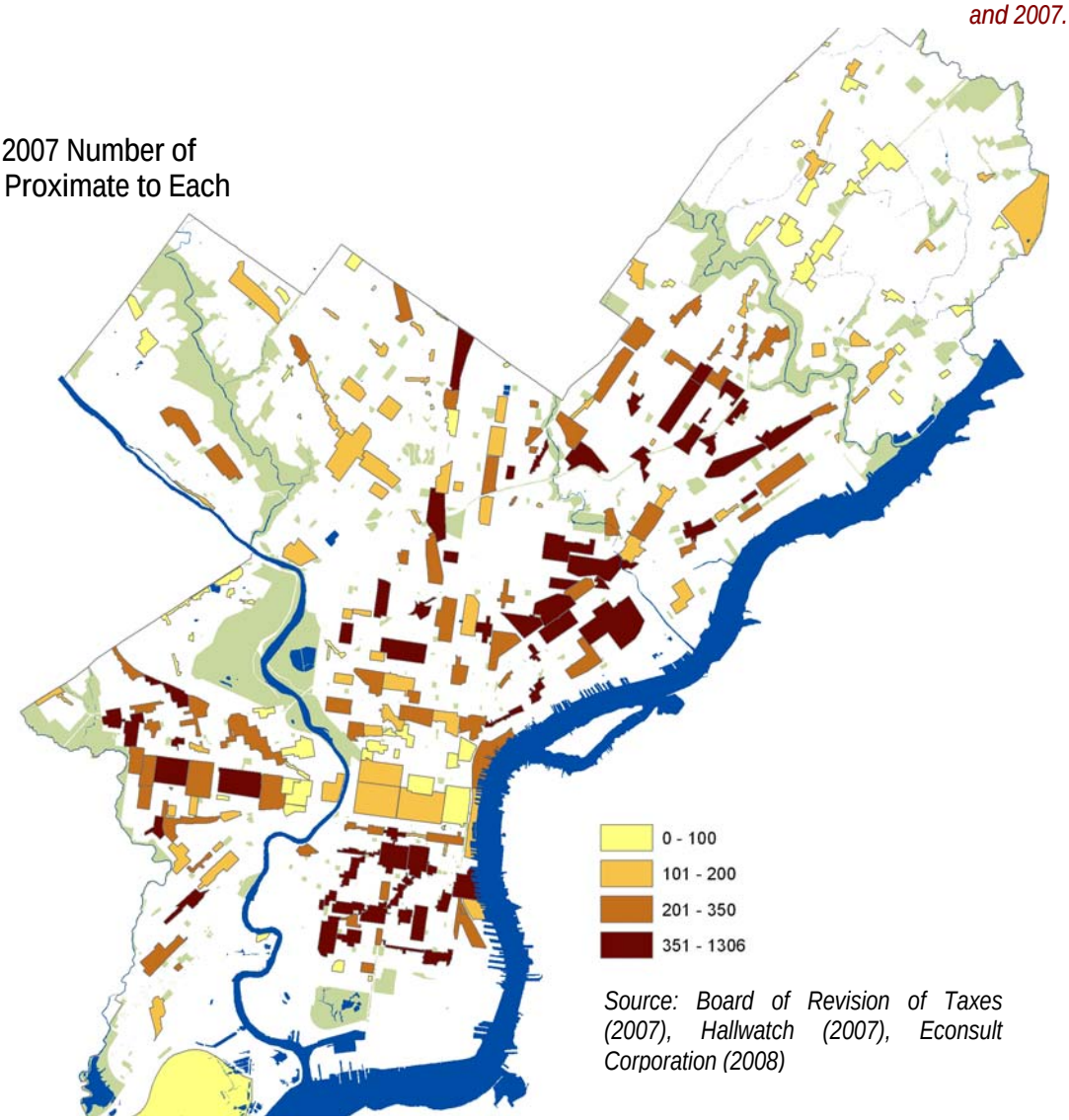
Source: City of Philadelphia Department of Revenue (2007), Econsult Corporation (2008)

8.3 Turnover

Secondly, we consider the turnover of houses near each corridor, as represented by the raw number of houses that transacted each year. Again, we utilize the same halo definition around each corridor (see Figure 8.10 and Figure 8.11).[65] Notice the high turnover amounts in South Philadelphia, and the large changes in turnover amounts in West Philadelphia.

We can look at turnover of houses near corridors in 2007, as well as changes in turnover between 1995 and 2007.

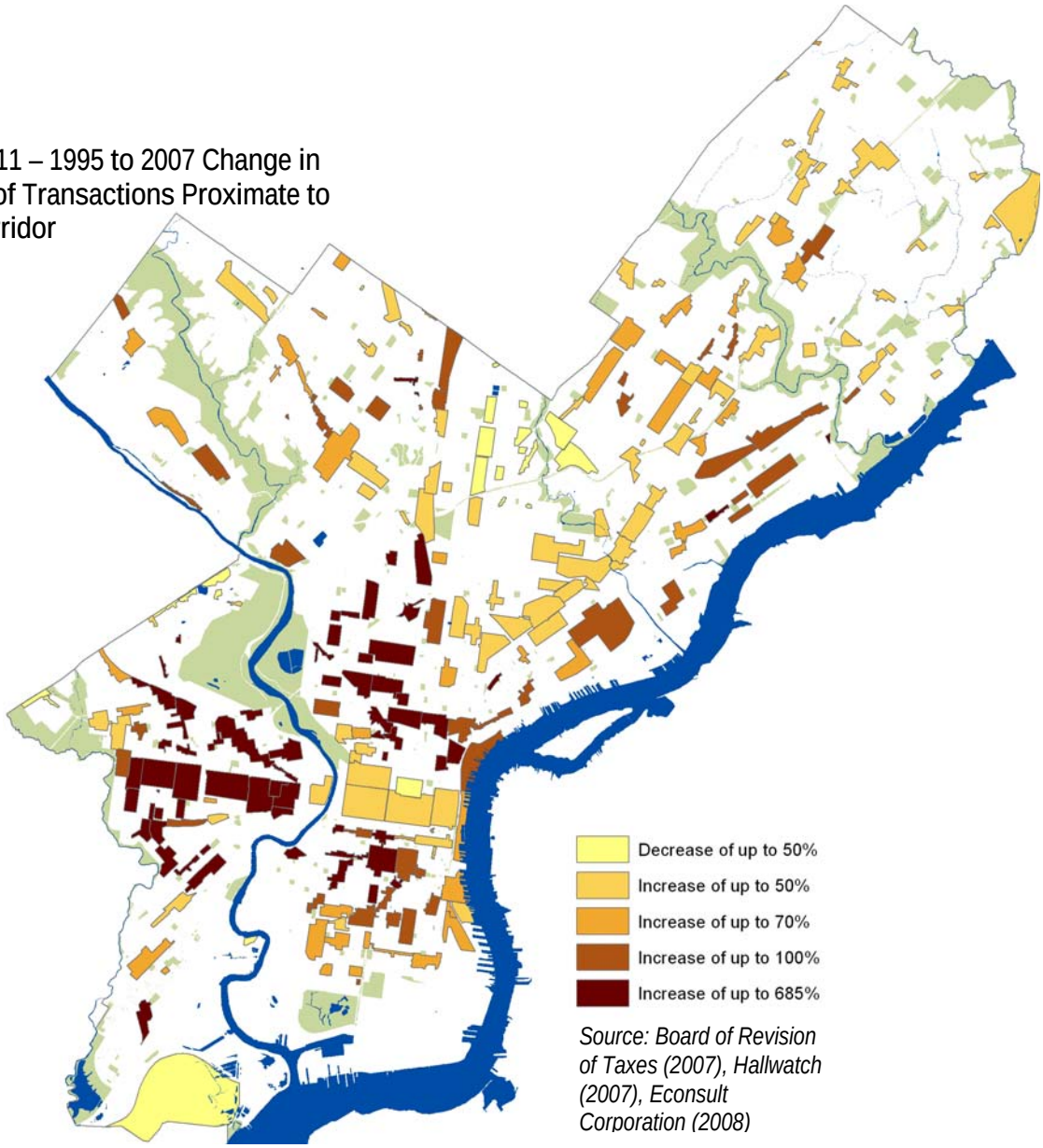
Figure 8.10 – 2007 Number of Transactions Proximate to Each Corridor



Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

[65] See Appendix AS, Appendix AT, and Appendix AU, for figures of transactions per year within corridor boundaries and within ¼ mile and ½ mile of corridor boundaries.

Figure 8.11 – 1995 to 2007 Change in Number of Transactions Proximate to Each Corridor

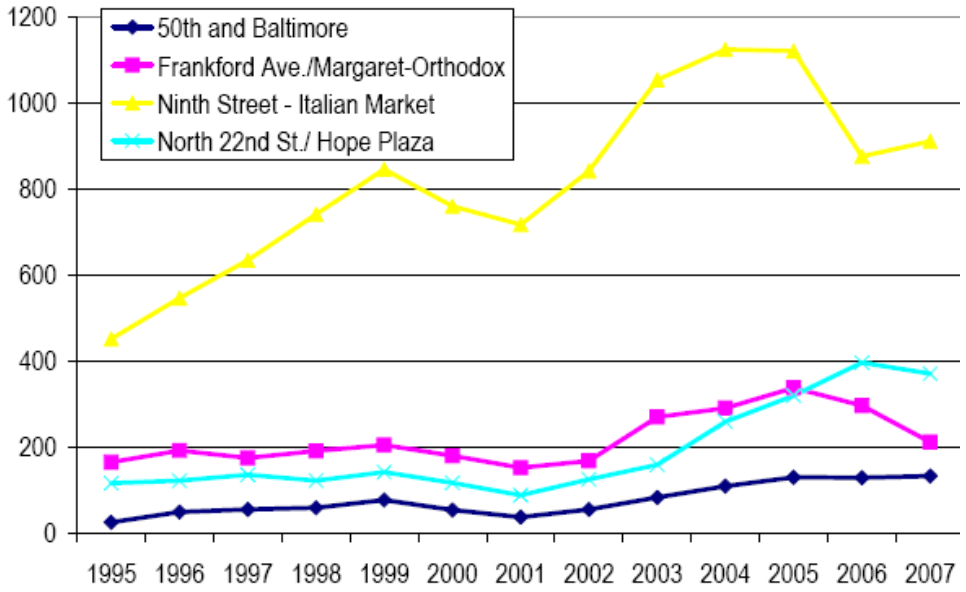


Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

A closer look at the four corridors we studied in December 2003 yields a few insights (see Figure 8.12). Note, for example, that the real estate boom earlier this decade translated into a noticeable uptick in transactions, and the higher numbers for the Italian Market corridor mirrored the greater price appreciation it enjoyed.

We can depict turnover at the single-corridor level.

Figure 8.12 – Total Number of Transactions Each Year Proximate to Four Corridors Analyzed in 2003 Study



Source: Board of Revision of Taxes (2007), Hallwatch (2007), Econsult Corporation (2008)

8.4 Comparing Retail Sales Data with Real Estate Data

As we did for the household survey results and retail sales results, we can aggregate real estate results by corridor, sorted by various corridor categorizations. Because the real estate results are so similar in structure to the retail sales results, we depict them side-by-side in this chapter. Please see Appendix AV for these results.

We can look at cross-tabulations of real estate levels by a number of difference corridor attributes; while these results do not prove causation or correlation, it is useful to see how corridors perform across a range of characteristics, and to compare real estate results with retail sales results.

We consider the effect of the following corridor characteristics:[66]

- How many arts organizations does it house – more arts organizations has meant higher price appreciation
- How accessible is it by transit – more accessibility has meant higher price appreciation
- How many murders took place there – more murders has meant lower price appreciation
- What is the income density – more income density has meant higher price appreciation, except for the fact that corridors in the smallest quartile for income density enjoyed relatively high price appreciation
- What proportion of nearby residents live in poverty – more poverty has meant lower price appreciation, except for the fact that corridors in the smallest quartile for poverty did not enjoy quite as high of a price appreciation
- As a neighborhood gets richer or poorer, what happens to retail sales in the corridor – results are mixed
- How many large-scale chain retailers are nearby – more large-scale chain retailers has meant higher price appreciation
- How many chain drug stores does it house – more large-scale chain retailers has meant higher price appreciation
- How many chain grocery stores are nearby – more large-scale chain retailers has meant higher price appreciation
- How many other corridors are nearby – corridors with lots of corridors nearby enjoyed the highest price appreciation
- How many City interventions has it received – the more City interventions received, the higher the price appreciation

[66] See Appendix AV for real estate cross-tabulation results.

- How many non-City interventions has it received – the more non-City interventions received, the higher the price appreciation, except for the fact that corridors that received the most non-City interventions tended to be those that enjoyed the lowest price appreciation

Importantly, we note that the depictions above are simply aggregations of average house prices by corridor, sorted by various corridor categorizations. They do not necessarily demonstrate causation or even correlation, but simply give a sense of how corridors with different characteristics perform relative to one another in terms of average house prices. Our econometric work in subsequent chapters demonstrates what effect these variables have on neighboring property values, when holding other variables constant. Thus, if there is a variable here that appears positive or negative but that washes it in our regression, that simply means that variable does not necessarily lead to positive or negative outcomes, merely that it is collinear with some other, more influential explanatory variable.

9.0 PERFORMANCE MEASURES

9.1 Corridor Performance Across Performance Measures

We can compare in three sets of performance measures: consumer choice characteristics, retail sales characteristics, and real estate characteristics.

We have now looked at three very interesting types of corridor performance measures: consumer choice characteristics, retail sales characteristics, and real estate characteristics. Individually, each paints part of the picture of corridor performance; and, brought together, they can fill in even more of that picture. Accordingly, this chapter explores corridor performance across these three measures.

We begin by looking across measures to see which corridors have done better than others. Healthy corridors will tend to do well in all three indicators, even as each measures slightly different elements of corridor success:

- Consumer choice characteristics measure a corridor's ability to capture the shopping trips of Philadelphia residents;
- Retail sales characteristics measure a corridor's ability to capture retail dollars; and
- Real estate characteristics measure a corridor's value as a location.

We can derive a composite ranking from these sets of performance measures.

We have already looked across indicators in the previous two chapters: in Chapter 7, we compared shopper trip market share with retail sales market share; and in Chapter 8, we compared retail sales results with real estate results. We can now look at all three indicators, and see more definitively which corridors are succeeding and which are failing.

To simply matters, we rank corridors in the following five categories (see Figure 9.1):[67]

- Household survey shopping trip market share (2007) – weighted at 40%
- Retail sales levels (2004) – weighted at 30%

[67] See Appendix AV for a combined variable cross tabulation and Appendix AW for a full listing of corridors by ranking. We have trimmed our look at retail sales data from 1995-2005 to 1996-2004 to minimize any distortions at the beginning and end of the study period. The weightings are not scientific, but simply reflect the relative prominence of shopping trip market share, the relative lack of prominence of real estate values as a corridor performance indicator, and the relative importance of current raw levels versus changes over time. Any corridor-years in which a corridor had less than five retail establishments were not included in retail sales rankings, and any corridor-years in which a corridor had less than ten residential transactions were not included in real estate rankings; in both cases, for those years such corridors were all considered tied for last.

- Percentage change in retail sales levels (1996-2004) – weighted at 10%
- Median house price (2007) – weighted at 15%
- Percentage change in median house price (1995-2007) – weighted at 5%

Figure 9.1 – Top 20 Corridors Based on a Composite Ranking with Five Performance Indicators[68]

Rank	*Corridor*	*Consumer Choice MktSh Rank*	*Retail Sales 2004 Rank*	*Retail Sales 96-04 Chg Rank*	*Real Estate 2007 Rank*	*Real Estate 95-07 Chg Rank*
1	Market West - Center City	1	1	46	4	40
2	Market East - Center City	3	2	97	3	19
3	Chestnut Hill	18	8	49	17	73
4	South Street/Front-8th	18	10	85	6	27
5	Boulevard Plaza	25	9	94	34	89
6	Grant and the Boulevard (includes Whitman site)	25	8	58	34	89
7	Ivy Ridge Center & Vicinity	15	12	149	43	77
8	Frankford Ave.-Lower Mayfair	7	3	61	122	172
9	Northeast Shopping Center	34	20	72	55	105
10	South Street/8th-12th	47	51	56	10	25
11	24th Street/Oregon-Passyunk-Quartermaster	6	41	12	160	70
12	Franklin Mills	16	4	177	78	129
13	Aramingo Avenue	2	5	51	194	150

[68] Columns are as follows:

- "Consumer Choice MktSh Rank" = corridor rank of consumer choice market share; i.e. number of 2007 household survey shopping trips received by each corridor, divided by the number of all shopping trips that went to corridors.
- "Retail Sales 2004 Rank" = corridor rank of retail sales levels in millions of current dollars; i.e. 2004 retail sales totals by corridor, based on Revenue Department returns of retail establishment within corridor boundaries.
- "Retail Sales 96-04 Chg Rank" = corridor rank of change in retail sales levels; i.e. 1996-2004 percentage change in retail sales totals by corridor.
- "Real Estate 2007 Rank" = corridor rank of real estate values in thousands of current dollars; i.e. 2007 average house price for units transacted within a ¼ mile of corridor boundaries for pedestrian/transit corridors and within a ½ mile of corridor boundaries for all other corridor characters.
- "Real Estate 95-07 Chg Rank" = corridor rank of change in real estate values; i.e. 1995-2007 percentage change in real estate values by corridor.

Rank	Corridor	Consumer Choice MktSh Rank	Retail Sales 2004 Rank	Retail Sales 96-04 Chg Rank	Real Estate 2007 Rank	Real Estate 95-07 Chg Rank
14	Frankford and Megargee	12	27	80	99	181
15	Red Lion Plaza	33	47	65	46	95
16	Old City/The Bourse	83	7	104	1	18
17	40th & Market and Vicinity	43	29	26	94	98
18	Andorra Shopping Center	22	58	86	30	168
19	Port Richmond Shopping Center	32	40	21	128	37
20	Boulevard/Pennypack Circl	44	31	66	64	119

Source: Econsult Corporation (2008), the reed group (2007), City of Philadelphia Department of Revenue (2007), Board of Revision of Taxes (2007), Hallwatch (2007)

There is a relative resonance between consumer choice performance and retail sales performance, and not as much between retail sales performance and real estate performance.

We also note that there is some resonance between performance indicators, as discussed previously (see Figure 9.2 and Figure 9.3). Market shares as measured by household survey shopping trips versus retail sales shopping trips tend to be consistent, in terms of corridor by corridor comparisons: high-performing corridors do well in both indicators, and low-performing corridors do poorly in both corridors. Notable variances include regional draws like Center City and Franklin Mills, which do even better in the retail sales indicators than in the household survey indicators because of the presence of non-resident shopping dollars captured, which are not accounted for in our household survey.

Retail sales levels and real estate values are somewhat but less correlated, which makes sense since they are measuring slightly different elements of corridor performance, and it is more common for corridors to do well in one facet but not in the other. On the one hand, high-performing corridors mean attractive, well-kept locations, which are a positive amenity for nearby properties.

However, there are some notable exceptions, particularly auto-oriented corridors like Aramingo Avenue and Quartermaster Plaza. There are least a couple of explanations for such cases. Large lots require cheap land, so newer auto-centric plazas tend to not be in higher-priced neighborhoods. Also, heavy auto orientation means that the corridor is less of an amenity (the convenience of proximity is lessened) and more of a disamenity (traffic, noise) for the immediate neighborhood.

Figure 9.2 – Correlation of Various Corridor Performance Rankings

Household Survey Market Share Ranking vs. Retail Sales Market Share Ranking	0.65
Retail Sales Levels Ranking vs. Real Estate Values Ranking	0.21
Change in Retail Sales Level Ranking vs. Change in Real Estate Values Ranking	0.13

Source: Econsult Corporation (2008)

Figure 9.3 – Household Survey Market Share Ranking vs. Retail Sales Market Share Ranking – Distribution of Quartiles[69]

		Household Survey Market Share Rank - Quartile			
		1	2	3	4
Retail Sales Market Share Rank - Quartile	1	42	17	5	2
	2	16	24	23	3
	3	6	19	25	16
	4	2	6	13	46

Source: Econsult Corporation (2008)

[69] First quartile means the top quarter of corridors, by the respective ranking, and so on. As the shaded boxes indicated, the majority of corridors are relatively similar in terms of household survey market share ranking and retail sales market share ranking.

9.2 Overall Observations

It is left Section II to equate corridor performance to the various attributes of each corridor. What we can observe from these rankings themselves is as follows:

- As noted above, there is a relative diversity of types, characters, and regions represented at the very top of these aggregated corridor rankings. To put it another way, different kinds of corridors are finding success in terms of attracting shoppers and being high-value locations.

There is a lot of diversity at the top of our corridor rankings.

- Of the 265 corridors identified by the Philadelphia City Planning Commission, roughly 20 percent are quite low-activity, whether measured by shopping trips that end up there (30+, or over 10 percent, registered no trips in our household survey) or retail sales dollars that are captured there (data on 50+, or almost 20 percent, were suppressed because less than five establishments filed returns).

There are a lot of corridors that are very low-activity in nature.

- Center City, as represented by the Market West (#1 overall) and Market East (#2 overall) corridors, is the core of retail shopping in Philadelphia, ranking in the top five in household survey market share, retail sales levels, and real estate values, with other strong performers representing such familiar districts as Chestnut Hill (#3 overall) and South Street (#4 and #13 overall).

Center City remains the core of Philadelphia retail, and other well-known corridors like Chestnut Hill and South Street have performed well.

- Relatively new, auto-oriented corridors such as Quartermaster Plaza (#6 in household survey market share, #27 in retail sales level, and #11 overall), (Aramingo Avenue (#2 in household survey market share and #16 overall) and Snyder Plaza (#5 in household survey market share, #65 in retail sales level, and #17 overall) are beginning to show themselves as strong performers.

Newer, auto-oriented corridors, like Quartermaster Plaza, Aramingo Avenue, and Snyder Plaza, are gaining in prominence.

- We do not yet perceive that the introduction of chain competition or various interventions has a dramatic "before and after" impact on corridors, although we explore these potential relationships in Section II.

We explore the effect of various interventions in Section IIof this report.

9.3 Corridor Classifications

It does not appear that certain kinds of corridors are systematically succeeding or failing.

Determining a corridor typology is an important exercise, since different corridor types may exhibit different characteristics and respond differently to the same interventions. Ranking corridors in different categories is an important component of determining a corridor classification system, since such a system is likely to consist of the interplay between three elements of a corridor: its trade area (i.e. corridor type), its physical and functional layout (i.e. corridor character), and its performance (i.e. shopping trip market share, retail sales market share, and real estate levels).

Nevertheless, classifying corridors into distinct categories is largely the purview of Section II, since we discuss there how different corridors respond differently to various "events," such as the introduction of retail competition or investment. What is useful to discuss at this point is the relative diversity of Philadelphia's corridors, as evidenced by the lack of a dominant type, character, or region in these aggregate corridor rankings. In other words, it does not appear that certain kinds of corridors are systematically succeeding or failing. It is left to Section II to get at some of the reasons for these successes and failures.

SECTION II – RELATIONSHIPS AND RECOMMENDATIONS

10.0 Corridor Typologies

We combine sales and trip data to examine corridor types

Each of the chapters in Section I of this report described a set of data, whether explanatory variables (chapters 2-5) or performance measures (chapters 6-9). This chapter assembles the data together and presents an initial level of analysis. We aggregate corridors by retail sales and percentage of household survey shopping trips to compare different types of corridors and develop benchmarks for sales per store and stores per corridor. Further, the performance indicators - shopping trips, retail sales, and real estate values - provide insight into the levels and range of activity in each of the ten most common combinations of corridor character and corridor type. These indicators also help distinguish activity in highly auto oriented corridors from activity in more pedestrian friendly corridors.

10.1 Distribution of Corridor Activity

Comparison of Sales and Trips

The corridors vary widely in the level of sales activity

The corridors vary widely in the level of sales activity. The largest corridors have hundreds of stores, tens, if not hundreds, of millions of dollars in sales and, according to the household survey, a large number of shoppers. At the other end of the spectrum, there are many corridors that have few stores, limited sales, and few visitors. (see Figure 10.1 and Figure 10.2).

Figure 10.1 - Distribution of Corridor Size by 2004 Sales

Sales (2004)	*Percent of Corridors*	*2004 Sales ($millions)*	*Percent of 2004 Sales*	*Average Number of Stores*	*Sales Per Store ($millions)*	*Percent of Shopping Trips*
Up to $1m	10%	9	<1%	3	0.1	1%
$1m - $2m	7%	27	<1%	7	0.2	1%
$2m - $10m	27%	424	6%	16	0.4	8%
$10m - $100m	50%	3,770	51%	40	0.7	61%
Greater than $100m	5%	3,129	43%	200	1.2	29%
Total	100%	7,360	100%	34	0.8	100%

Source: City of Philadelphia Department of Revenue (2008), the reed group (2007), Econsult Corporation (2008)

Figure 10.2 - Distribution of Corridor Size by Trips

Market Share of Household Survey Shopping Trips (2007)	*Percent of Corridors*[70]	*2004 Sales ($millions)*	*Percent of 2004 Sales*	*Average Number of Stores*	*Sales Per Store ($millions)*	*Percent of Shopping Trips*
0.0% - 0.1%	42%	1,043	14%	15	0.6	4%
0.1% - 0.2%	20%	921	13%	31	0.6	8%
0.2% - 1.0%	28%	2,200	30%	41	0.7	35%
1.0% - 2.0%	7%	1,012	14%	47	1.1	23%
Greater than 2.0%	3%	2,183	30%	215	1.1	31%
Total	100%	7,360	100%	34	0.8	100%

Source: City of Philadelphia Department of Revenue (2008), the reed group (2007), Econsult Corporation (2008)

The largest corridors have more than $100 million in annual sales in 2004. These stores accounted for more than 40 percent of retail sales in corridors in 2004, and yet received approximately 29 percent of all 2007 household survey shopping trips. This is in contrast to smaller corridors (up to $10 million in sales), which accounted for approximately 6 percent of retail sales in corridors in 2004, and yet received approximately 10 percent of all 2007 household survey shopping trips.

High-sales corridors achieve much greater sales per observed shopping trip than other corridors

Thus, high-sales corridors achieve much greater sales per observed shopping trip than other corridors. (i.e. sales per percent of trips is quite high). This indicates that high sales corridors are not high-sales simply because they receive more trips. Rather, these corridors receive many trips and are selling more per observed trip. There are several factors that could be behind this result – purchasing more expensive goods, purchasing more goods per trip, and greater purchasing by people not included in the survey including shoppers who do not live in the city.

High-sales corridors are also home to a disproportionately large number of stores where high-volume purchases are typically made. For example, 43 percent of the big-box stores are in corridors with $100 million or more in sales, but such corridors represent only 5 percent of all corridors. In contrast, stores at the smaller centers are more likely to have low sales volume. Indeed, sales per store are $0.3 million per store in corridors with sales less than $10 million, and $0.9 million per store in corridors with sales greater than $10 million.

[70] As discussed elsewhere in this section, eight corridors have been consolidated into three corridors for the shopper survey, for a total of 260 corridors. For purposes of this figure, sales information has been likewise consolidated to maintain comparability.

Minimally Active Corridors

Household survey and retail sales information also helps identify "minimally active" corridors, or corridors with low sales and few trips. Depending on the criterion or criteria used, such low-activity corridors represent significant proportions of the total inventory of 265 corridors in the city (see Figure 10.3).

Figure 10.3 – Minimally Active Corridors

Criteria	*Corridors*
Less than $1 million in sales	27
Less than $2 million in sales	46
Fewer than 5 stores	32
Less than 0.1 percent of trips [6 or fewer trips]	108
Less than 0.1 percent of trips and fewer than 5 stores	28

Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

Consolidated Corridors

In some cases two or three corridors have been consolidated into one corridor

Many corridors are directly adjacent to other corridors, and in most cases boundaries do not represent hard borders such as highways or train tracks. In some cases, for the shopper trip analysis, two or three corridors have been consolidated into one corridor, when the corridors function together for econometric purposes. In part, this consolidation is also influenced by the ambiguity of reported destinations in the shopper survey, in which a shopper would report an intersection that is between two corridors, and there is minimal distinction between the corridors.

Based on these several approaches, we have consolidated the following corridors for some analyses:

- Castor and Cottman / Sears/Cottman-Bustleton Center / Roosevelt Mall
- Snyder Plaza and Vicinity (including Columbus Commons) / Southport Plaza / Pier 70 Plaza
- 34th and Walnut and Vicinity / 38th and Walnut and Vicinity

These consolidations also raise the issue of whether there are other consolidations that might be appropriate, given the insight provided by previously unavailable data. Further analysis of existing and additional data can help identify other sets of adjoining corridors that function together.

Additional Retail Concentrations that Merit Corridor Status

Shopping trip and retail sales data can be used to help identify corridors

Two sets of data collected as part of this project can aid in the identification of corridors – shopper trip data and retail sales data.

The consumer survey provides information on where shopping trips occurred, and can be plotted on a map. Areas that receive numerous trips are good candidates for corridors, and areas that receive few shopping trips are less likely to be classifiable as corridors.

In addition, the retail sales data from the Revenue Department make it possible to plot the location of all retail stores in the City. Areas that have significant retail sales, and have a sufficiently large number of stores, are good candidates for corridors, and areas that have low levels of retail sales, and few stores, are less likely to be classifiable as corridors.

Furthermore, there are statistical techniques that can assist in the identification of shopping clusters. For example, one commonly used technique is cluster analysis, which groups individual points into "clusters" with other, similar points. The goal of these analyses is to choose the most efficient number of groups so that adding one additional group makes points within groups, on average, no more similar. In the case of shopper trips, individual shopper destinations would be grouped with other nearby destinations, which would allow an efficient number of corridors to be defined.

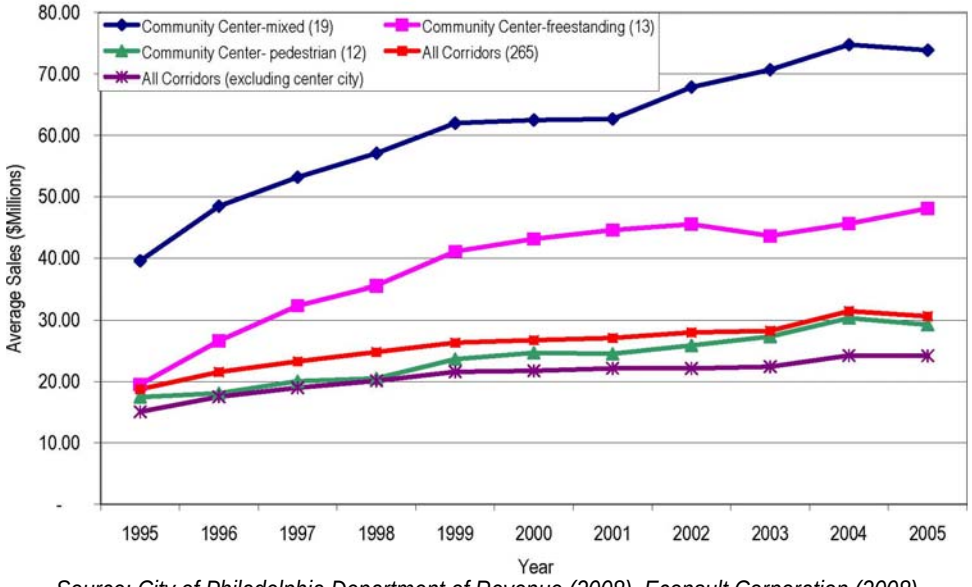
Both of these data sources, augmented by clustering analysis, can be used to assist an update of corridor definitions in future studies or analyses of corridors. However, the focus of this study was analyzing the corridors as designated by the Planning Commission.

10.2 Corridor Types – Philadelphia City Planning Commission Designations

As alluded to in Section I of this report, the interplay between PCPC designations of type and character is a useful starting point for discussing corridor typology. The six types and five characteristics yield 30 possible combinations, but there are really only 10 significant combinations, accounting for 235 out of 265 corridors. Figures 10.4 to 10.8 present information on sales, trips, and number of stores for each character / type combination.[71]

The interplay between PCPC destinations of type and character is a useful starting point for discussing corridor typology

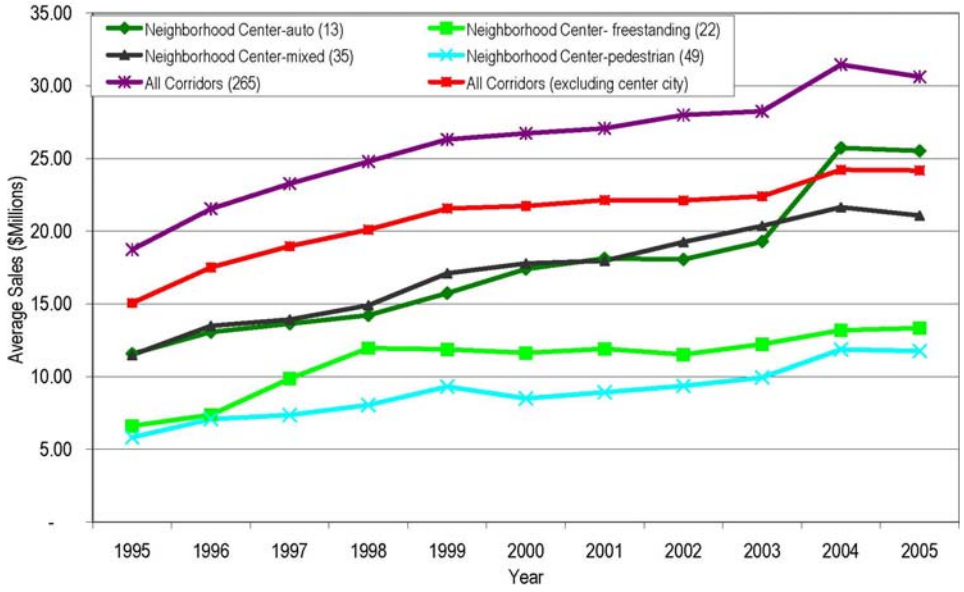
Figure 10.4 - Average Retail Sales in Community Center Corridors (1995-2005)



Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

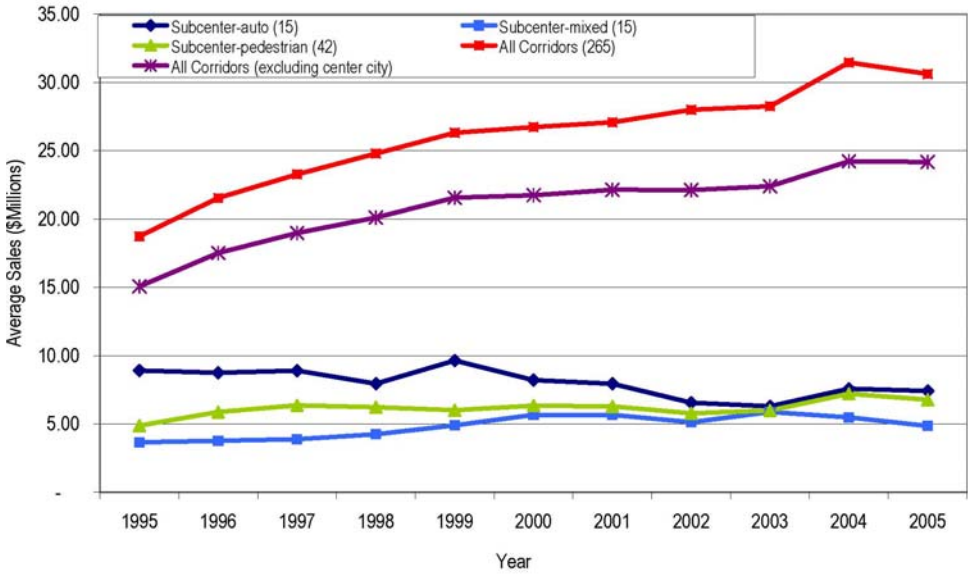
[71] In the graphs, the number in parenthesis after the corridor type indicates how many corridors of that type there are.

Figure 10.5 - Average Retail Sales in Neighborhood Center Corridors (1995-2005)



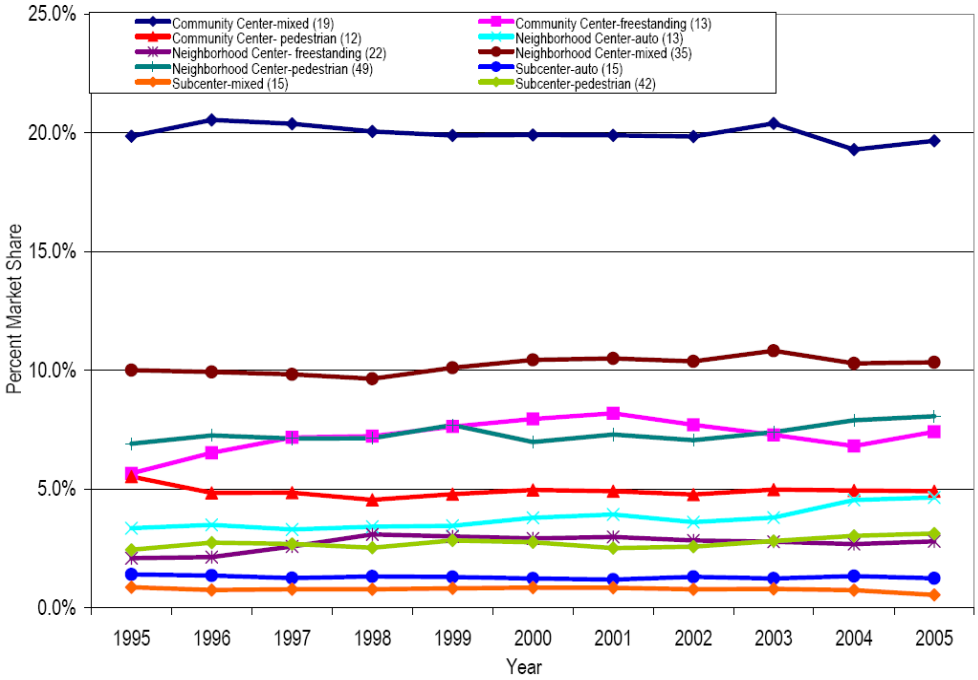
Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

Figure 10.6 - Average Retail Sales in Neighborhood Subcenter Corridors (1995-2005)



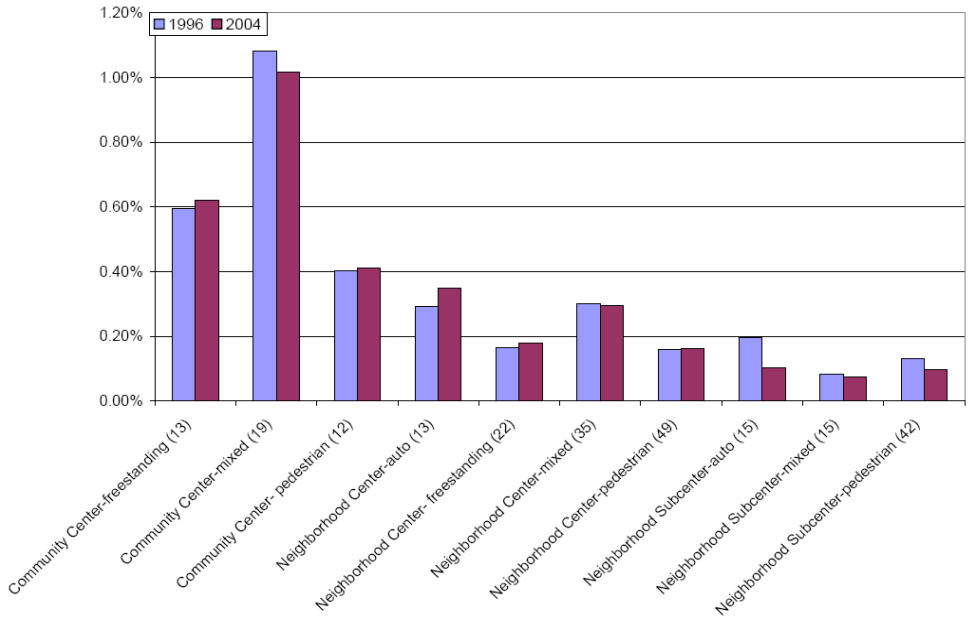
Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

Figure 10.7 – Market Shares of Major Type - Character Pairs (1995-2005)



Source: City of Philadelphia Department of Revenue (2008), Philadelphia City Planning Commission (2007), Econsult Corporation (2008)

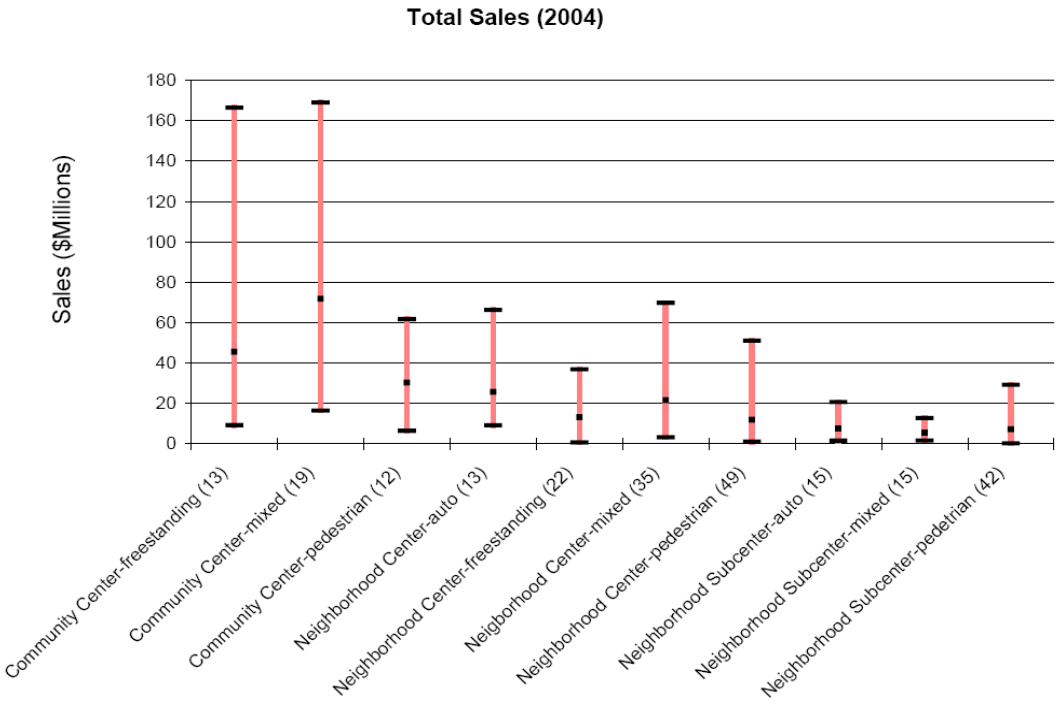
Figure 10.8 – Average Market Share for Major Type - Character Pairs (1996 & 2004)



Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

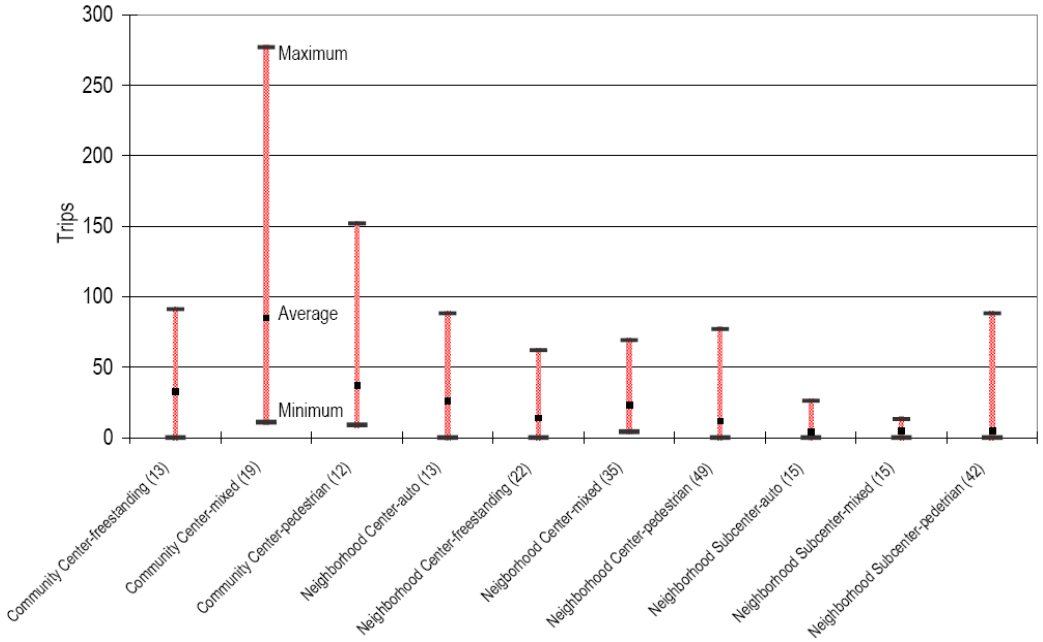
Free-standing and mixed community center corridors have the greatest average retail sales, which befits their role as the location of destination retail. On the other hand, neighborhood subcenter corridors generated the lowest average retail sales, which is consistent with their role as neighborhood oriented retail with a narrow catchment area. Interestingly, as indicated in Figures 10.9 to 10.11, the market shares of most corridor types have not changed greatly in the study period. For example, Neighborhood Center – Mixed corridors had a market share of 9.9 percent in 1996, and a market share of 10.3 percent in 2004. This flatness indicates that larger types of corridors are not growing at the expense of smaller types of corridors. Also, Community Centers – freestanding and Neighborhood centers – auto, which are both auto oriented, experienced growing market shares in this period.

Figure 10.9 – Total Retail Sales for Major Type-Character Pairs – Average and Range (2004)



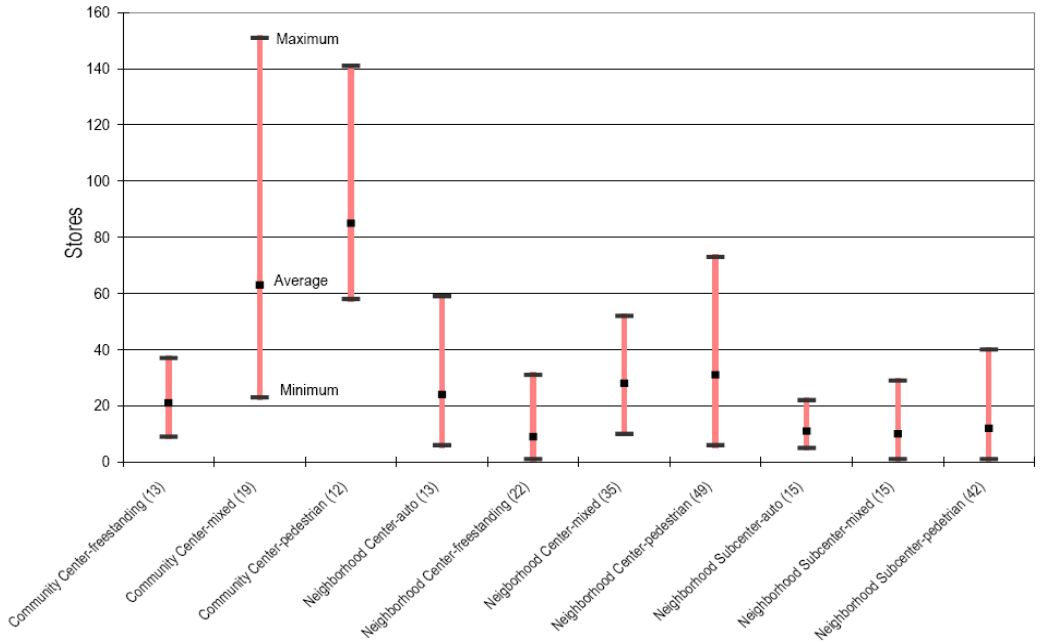
Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

Figure 10.10 – Trip Counts for Major Type-Character Pairs – Average and Range (2007)



Source: the reed group (2007), Econsult Corporation (2008)

Figure 10.11 - Number of Stores for Major Type-Character Pairs – Average and Range (2004)



Source: City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

For both neighborhood centers and subcenters, pedestrian corridors demonstrated a wider range of trips and stores than other types of neighborhood center and subcenter corridors. Mixed and pedestrian oriented corridors for community centers had the widest range of sales and trips and the greatest average level of sales and trips among all corridor types.

Community centers are the largest; neighborhood centers are the smallest.

Moreover, free-standing community centers had a similar range for the number of trips as neighborhood centers but had greater sales indicating that free-standing community center corridors generate higher sales per trip than most other types of corridors. Similarly these centers generate higher average sales per store than most other types of corridors.

On the other end of the spectrum, neighborhood subcenters have relatively low store and trip counts. Again, these results are consistent with the role that each type of corridor category plays. In terms of character, for community centers and neighborhood centers, pedestrian-oriented corridors have lower average retail sales than auto, freestanding or mixed corridor types.

10.3 Corridor Types – Auto and Mixed Corridor

Overview

There are design and functional differences between corridor types.

As indicated by the PCPC categorizations, there are several different types of corridor configurations, from pedestrian to free-standing, and there are many characters of corridor market reach, from neighborhood sub center to regional supercenter. However, there are too many gradations and too few data points for each type-character pair to conduct separate statistical analyses. Thus, for purposes of some of the analyses, it has been helpful to categorize the corridors by design, into fully auto-oriented corridors ("auto" corridors), and all other corridors, which include pure pedestrian corridors and corridors with mixed auto and pedestrian features ("mixed corridors"). This categorization recognizes that there are design and functional differences between corridor types and permits statistical analysis to consider these differences.

Many analyses have incorporated differences between "auto" and "mixed" corridors.

This distinction helps because there are several types of interventions, corridor and neighborhood attributes, and other performance variables that might be thought to be more effective in certain types of corridors than others. For example, transit access is probably more important for corridors that provide a minimal level of pedestrian accommodation, whereas transit access is likely less important for heavily auto-oriented corridors.

Accordingly we have conducted a number of analyses separately, in part or in whole, according to whether a corridor is "auto" or "mixed." For example, we investigated the effect of certain interventions separately for auto and mixed corridors, and we investigated the effect of parking density separately as well.

Some of the differences are quite stark. For example, as shown in Figure 10.12, there are fewer auto corridors, but aggregate sales are approximately the same as in mixed corridors (excluding Center City) and per store sales are greater in auto corridors. Furthermore, there are more stores on average in mixed corridors, and mixed corridors are significantly older than auto corridors. These differences reflect the growing size of individual stores over the past century, in which newly constructed stores are significantly larger than older stores.

Figure 10.12 – Summary Statistics for Auto and Mixed Corridors

Statistic	*Auto*	*Mixed*	*Mixed (excluding Center City)*	*All Corridors*
Number of Corridors	106	159	156	265
Trips	55%	45%	34%	100%
Retail Sales in 2004 ($m)	$2,770	$4,590	$2,786	$7,360
Stores in 2004	2,256	6,870	5,329	9,126
Retail Sales per Store ($m)	1.2	0.7	0.5	0.8
Average Stores per Corridor	21	43	34	34
Average Age (Years)	51	95	95	77

Source: Philadelphia City Planning Commission (2003), City of Philadelphia Department of Revenue (2008), Econsult Corporation (2008)

Travel to Corridors

As expected, a very large percentage of shoppers shopping in auto corridors use an automobile to make the trip. As indicated in Figure 10.13, more than 85 percent travel by car, and only 5 percent travel by transit to auto corridors. In contrast, only 40 percent of the trips to mixed corridors are made by auto.

Auto trips dominate auto corridors. Transit and Pedestrian trips account for more than half of to mixed corridors.

Figure 10.13 – Shopping Trip Mode for Auto and Mixed Corridors

Mode	*Auto*	*Mixed*	*Total*
Drive	86%	40%	66%
Public Transit	5%	21%	12%
Walk or Bike	10%	40%	22%
TOTAL	100%	100%	100%

*Numbers may not add to 100 due to rounding

Source: the reed group (2007), Econsult Corporation (2008)

Shopping trips made using public transit are longer than auto trips, and both trip types are longer than walking or biking trips. However, for both auto and transit trips, the majority of trips

Transit trips are the longest, walking trips are the shortest.

are shorter than two miles. Further, trips to auto corridors, for each mode, are longer than trips to mixed corridors. In part, this difference reflects the design of auto corridors, in which the stores are physically farther away from customers.[72]

Figure 10.14 – Median Trip Distance by Mode – All Corridors (miles)

Mode	*Auto*	*Mixed*	*All*
Drive	1.18	0.95	1.13
Public Transit	1.67	1.60	1.61
Walk or Bike	0.30	0.20	0.22
All	1.10	0.56	0.87

Source: the reed group (2007), Econsult Corporation (2008)

Furthermore, as shown in Figure 10.14 and 10.15, the median trip distance to Community Center corridors is much greater than trip distance to Neighborhood Center corridors. This reinforces the difference in catchment area for the different types of corridors. The Community Centers are clearly drawing from a much wider area.

Figure 10.15 – Median Trip Distance by Mode – Community Center Corridors (miles)

Mode	*Auto*	*Mixed*	*All*
Drive	1.46	0.84	1.33
Public Transit	1.67	1.30	1.34
Walk or Bike	0.33	0.21	0.24
All	1.33	0.61	1.11

Source: the reed group (2007), Econsult Corporation (2008)

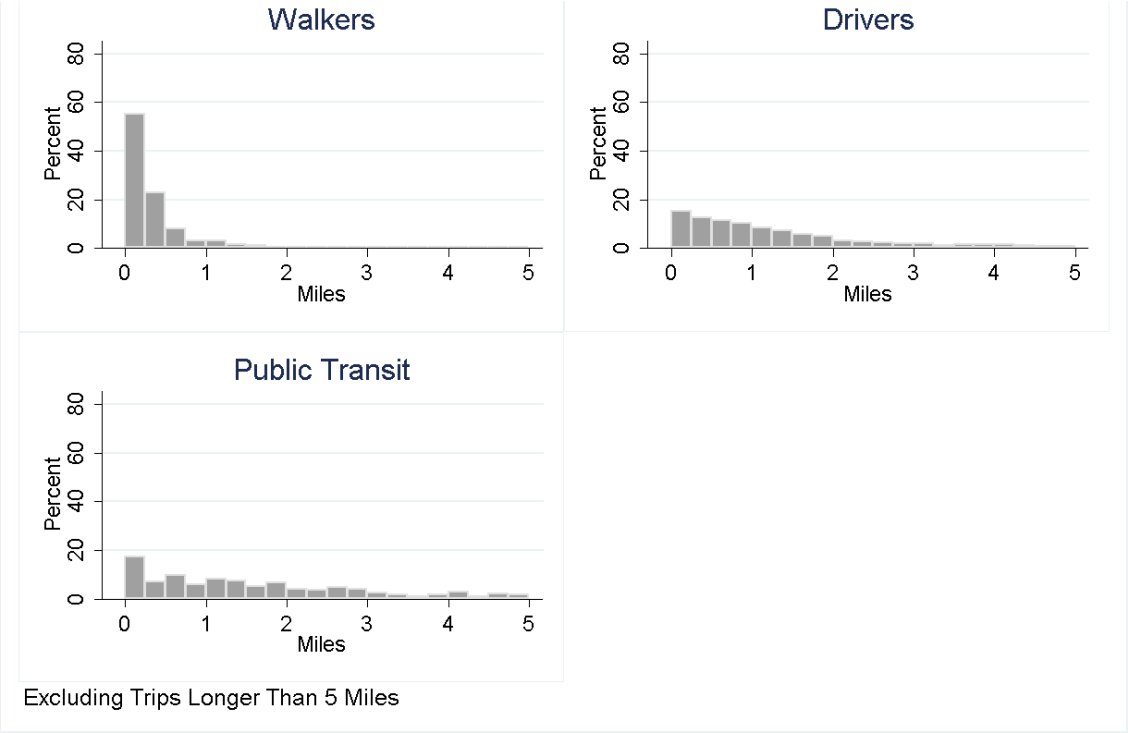
[72] Note that these trip distances do not include trips from suburban shoppers, which would increase the average distance travelled even more.

Figure 10.16 – Median Trip Distance by Mode – Neighborhood Center Corridors (miles)

Mode	*Auto*	*Mixed*	*All*
Drive	0.89	0.74	0.87
Public Transit	2.07	0.78	1.07
Walk or Bike	0.24	0.16	0.19
All	0.83	0.27	0.65

Source: the reed group (2007), Econsult Corporation (2008)

Figure 10.17 – Distance Traveled by Shoppers



Philadelphia City Planning Commission (2006), the reed group (2007), Econsult Corporation (2008)

Figure 10.17 shows the distance traveled by mode for shoppers, and indicates the difference in travel patterns. More than half of walkers travel less than ¼ mile to then destination which is approximately three blocks or less. Furthermore, more than 15 percent of auto trips are ¼

Many very short trips were made using autos, especially to auto-oriented corridors.

mile or less. Because there are many more auto trips then walking trips, we find that 40 percent of all trips ¼ mile or less are made by auto. For auto-oriented corridors the auto share is 70 percent and for mixed corridors the auto share is 18 percent (see Figure 10.18). This indicates that design and travel modes are correlated. Further analysis could shed light on whether more pedestrian oriented design would lead to more pedestrian trips.

Figure 10.18 – Mode for Trips ¼ Mile or Less

Mode	*Auto*	*Mixed*	*Total*
Drive	70%	18%	40%
Public Trans	4%	10%	7%
Walk or Bike	26%	72%	53%
Total	100%	100%	100%

Source: the reed group (2007), Econsult Corporation (2008)

10.4 Summary

Corridors vary widely according to design, market area, and performance, and have different levels of sales intensity, trip counts, and store counts. This is to be expected, as different corridor types fulfill different roles. The smallest corridors primarily serve a highly localized market, and account for a larger percentage of trips than of sales, indicating that they serve lower value shipping trips. The largest corridors, though few in number, draw a large percentage of trips, an even larger percentage of sales, and service higher value trips than smaller corridors.

Auto and mixed corridors vary greatly in the number of stores, average age, and sales per store. Auto oriented centers are relatively newer and larger, reflecting long standing retail trends toward larger individual stores. Furthermore, the distance travelled to auto corridors is longer than to mixed corridors, while driving and transit account for the bulk of trips and the majority of distances.

11.0 CORRIDOR PERFORMANCE – METHODS AND RESULTS

11.1 Econometric Methods and Interpretation

The econometric analysis gives insight into how something affects corridor performance, holding all else constant.

The econometric analyses described in the remainder of this report are used to understand the impact of the explanatory variables on corridor performance. Econometric analysis is a tool more powerful than other types of analyses, such as averages or cross tabulations, because it controls for other variables. In other words, this gives insight into how something affects corridor performance, holding all else constant. The explanatory variables used in these regressions come from the data sets presented in Chapters 2 to 5 of this report. Corridor performance is measured in four ways – by shopper choice (shopping trips), by retail sales, by retail sales growth, and by real estate values close to the corridor, as described in Chapters 6 to 8 of the report.

The results of an econometric estimation indicate, for each explanatory variable included in the estimation, whether that variable has a significant influence on the performance variable. As an example, the econometrics will indicate whether the presence of a big box store in a corridor is associated with greater sales in the corridor, compared to what the sales would be without the big box store.

There are four performance variables, so there are four sets of econometric estimations, one each for shopper choice, retail sales, retail sales growth, and real estate values close to the corridors.

Parameter estimates and signature levels indicate which characteristics and interventions matter for performance.

Figure 11.1 presents parameter estimates for all of the variables included in the primary regressions for shopping trips, retail sales, retail sales growth, and real estate values. Some variables appear in all regressions, while others appear in only one. The parameter estimates represent the effect of a one-unit change in that variable on some outcome, and the following paragraphs provide more detail on how to interpret each type of parameter. Variables that are statistically significant are indicated with "*", such that "*" represents significance at the 90% confidence level, "**" represents significance at the 95% confidence level, and "***" represents significance at the 99% confidence level.[73] Variables that are not statistically significant are assumed not to influence the corridor.

[73] The confidence level indicates the probability that the parameter that is being estimated is not equal to zero. The higher the confidence level, the less likely the parameter is to be unimportant.

Shopper Choice

We use logit to measure which factors people take into consideration when choosing where to shop.

Using the data from the shopper survey, we applied an econometric technique known as logit to measure which factors people consider when choosing which corridor to shop in. This is a corridor level regression, as characteristics are at the corridor level, and observations are shopping trips. There are 6,198 in-corridor trips and 388 out-of-corridor trips.

The end result of the model is a set of parameters that show how much individuals value each factor. We can then use those parameters to predict each individual's probability of going to each corridor, and therefore which corridor they are most likely to choose. These individual choices can then be aggregated to the corridor level to find the predicted number of trips to each corridor. This exercise, known as simulation, is discussed in more detail in Chapter 13.[74] We can also use this model to rank all 265 corridors from the perspective of each individual shopping trip (i.e., for each trip we know not only which corridor is best, but which is second best, third best, etc.).

For shopper trips, the parameter is the change in "utility", or the value which a person assigns to each corridor choice, resulting from an additional unit of that variable in a corridor. These parameters estimates have no direct interpretation in terms of trips that a corridor will receive, or for any individual trip choice, the likelihood that they will choose a specific corridor. However, a parameter can be compared to another parameter to see which has a larger impact on utility. In addition, the sign of the parameter indicates whether the variable increases utility or decreases utility. A characteristic that increases utility makes corridors with that characteristic more likely to be chosen than corridors without that characteristic.

Retail Sales and Retail Sales Growth

Retail Sales looks at the level and change in revenue across eleven years and all corridors.

We obtained Business Privilege Tax data from the Philadelphia Revenue Department and aggregated it to the corridor level, resulting in a data series of corridor level retail sales over all years, and another data series of corridor level weighted average same store growth rates. As resulting data have both a time variant and a cross-sectional component, we used an econometric model known as random effects regression. This is a corridor level regression, and an observation is retail sales for a corridor in a year. For most years, slightly more than 200 corridors have enough stores to permit the use of revenue data outside of the Revenue Department, which results in a regression with 2,387 observations.

For the retail sales growth an observation is the corridor level same-store retail sales growth. Same-store retail sales growth measures the growth in sales at individual stores from year to

[74] For more information on logit, please see: Greene, William H. Econometric Analysis, 4th edition, New Jersey: Prentice-Hall, Inc. 2000, pg. 862-865.

year, and individual store growth rates are averaged into a corridor level growth rate. This regression also has 2,387 observations.

For purposes of the retail sales regressions, three Center City corridors were excluded from the econometrics; Market East, Market West, and the Parkway. These corridors are subject to many influences that are not present in other commercial corridors. Additionally, these corridors are so large that they likely function differently from the rest of the corridors, and because they are so large, the difference could distort the econometric results for the rest of the corridors.

For retail sales, the parameter is the percentage increase in the sales in the corridor with the addition of another unit of the item. For example, the "number of pharmacies" in mixed corridors parameter is 0.11. This shows that, all else being equal, an additional pharmacy in a corridor is associated with retail sales that are 11 percent greater than a corridor that does not have that pharmacy. For retail sales growth, the parameter estimate is the increase in the percentage sales growth in the corridor with the addition of another unit of the item. For example the parameter estimate for retail sales mix score is 0.04, which shows that the growth rate increase by .04 (i.e. from 5.0 percent to 9.0 percent) for every one step increase in retail mix.

Real Estate Values

Real estate values are based on sales data, and adjusted for housing quality.

Using Board of Revision of Taxes (BRT) data on arm's length real estate transactions and an econometric technique known as hedonic analysis, we constructed a regression estimate the impact of corridor characteristics and corridor-targeted interventions on neighborhood housing prices. By employing hedonic analysis, the regression to measures the value of individual housing components (square footage, number of stories, neighborhood characteristics, etc.), and thus strips the effect of differences in housing types and quality from the model. The regression also includes region-specific, quarterly time indicators to account for both trends and cycles in housing prices. Since the housing market is active and represents an important transaction for both buyer and seller, house price is a reliable measure of neighborhood value, both across the city and across time. This is a parcel-level regression on the performance variable side, and corridor level on the explanatory variable side. This formulation is discussed in more detail in Chapter 14.5. An observation is a house sale, in or near a corridor, and there are 167,519 observations in this regression (i.e. 167,519 arms-length transactions), covering the period from 1995 to 2005.

In constructing the model, attributes of all corridors located within a quarter mile of a transaction were assigned to the parcel. In cases where a parcel was located near multiple corridors, average values of corridor characteristics and sums of corridor interventions were used.

For real estate, the parameter estimate is the percentage increase in real estate value in the corridor with the addition of another unit of the item. For example, the big box variable is -0.02. This shows that, all else being equal, real estate values in a corridor are 2 percent lower in a corridor with a big box store, compared to corridors without a big box store.

11.2 Econometric Results

Figure 11.1 presents the results of the econometrics. In Chapters 12 and 13 we will discuss the implications of these findings.

Figure 11.1 – Econometric Results

Explanatory Variable	*Real Estate*	*Shopper Choice*	*Retail Sales*	*Retail Sales Growth*
Corridor Characteristics				
Auto type (dummy)		-1.68 ***		
Corridor age (decades since 1800)	0.01 ***		0.03	0.00
Corridor area (square miles)	-0.15 ***		5.63 ***	-0.71 **
- in 'auto' corridor (log)		0.22 ***		
- in 'mixed' corridor (log)		0.78 ***		
Leadership - Econsult Focus Group (5 step scale)	0.01 ***	0.14 ***	0.05	-0.01
Market East (dummy)		-11.03 **		
Market West (dummy)		-12.33 *		
Number of firm 'births'	-0.00		-0.01 *	0.01 *
Number of firm 'deaths'	0.00 ***		0.00	-0.00
Number of firms	-0.00 ***		0.01 ***	0.00
- in a 'mixed' corridor		-0.00		
- in a 'mixed' corridor (squared)		0.00 **		
- in an 'auto' corridor		0.01 **		
- in an 'auto' corridor (squared)		-0.00 *		
Parking density (100s of off-street spaces per firm)	-0.00	0.02 ***		
- squared	0.04 ***	-0.00 ***		
- in 'auto' corridor			0.45 ***	-0.15
- in 'mixed' corridor			1.44 ***	0.27
- in 'auto' corridor (squared)			-0.09	0.06
- in 'mixed' corridor (squared)			-1.06 ***	-0.21
Store density (thousandths of square miles)	0.05 ***			
- in 'auto' corridor			0.60 ***	-0.10
- in 'mixed' corridor			0.30 ***	-0.05
Store Mix - Econsult Focus Group (5 step scale)	0.01 ***	0.12 ***	0.16 ***	0.04 **
Store Mix – PCPC (5 step scale)		0.43 ***		
Neighborhood Characteristics				
Arts - Corridor with an arts district (4+ organizations)	0.17 ***			
Arts - Corridor with an arts organization	-0.02 ***		0.31	-0.01
Clean/Safe survey rating and has above HS education		-0.02		

Explanatory Variable	*Real Estate*	*Shopper Choice*	*Retail Sales*	*Retail Sales Growth*
Clean/Safe survey rating and has below HS education		-0.11 ***		
Crime - Number of aggravated assaults (10s of assaults per square mile)	-0.00 ***		-0.00 ***	0.00
Crime - Number of Robberies (robberies per square mile)		0.00		
Ethnicity - African American and percentage of African Americans in corridor	1.22 ***			
Ethnicity - Asian and percentage of Asian's in corridor		2.00 ***		
Ethnicity - Caucasian and percentage of Caucasian's in corridor		0.66 ***		
Ethnicity - Percent African American	-0.05 ***		-0.05 **	0.01 **
Ethnicity - Percent Asian	-0.02 ***		0.14 *	-0.01
Ethnicity - Percent Hispanic	-0.01 ***		-0.02	-0.00
Geography - Corridor near (w/in 1/4 mile) a river	0.04 ***			
Geography - Corridor near (w/in 1/4 mile) the city boundary	0.01 ***	-0.09	-0.03	-0.04
Income - Average percent of owner occupied loans (10s %)	0.05 ***			
Income - Average percent of owner-occupied loans insured by FHA (10s %)	-0.02 ***			
Income - Average percent of owner-occupied loans subprime (10s %)	-0.01 **			
Income - Household Income (average in $10,000s)	0.08 ***	-0.00 ***	0.00	0.00
Income - Number of foreclosures in corridor (2006)	-0.01 ***	-0.03 ***	-0.01	-0.00
Income - Percent population below poverty level (10s %)	-0.10 ***	-0.40 ***	-0.10	-0.00
Institutions - Number of banks		-0.07 ***		
Institutions - Number of colleges	0.01 ***	-0.00	-0.29	-0.08
Institutions - Number of health institutions	-0.08 ***		-0.05	-0.01
Institutions - Number of hospitals	-0.14 ***	0.25 ***	0.43 **	-0.01
Park area (sq. mile)	-1.95 ***		-4.89	1.43
Population	-0.00 **		0.00	0.00
Proximity- Closest Corridor		0.62 ***		
Proximity- Next Closest Corridor		0.22 ***		
Proximity- Origin Corridor		0.18 *		
Competition				
Chain grocery stores (number)	-0.04 ***			
- in 'auto' corridor			0.09	0.02
- in 'mixed' corridor			0.23 **	0.01
- near 'auto' corridor			-0.34 ***	-0.01
- near 'mixed' corridor			-0.09	0.01
- near corridor		0.23 ***		
- at least one grocery store in a corridor (y/n)		0.55 ***		
Chain pharmacies (number)	0.04 ***	0.33 ***		
- in 'auto' corridor			0.05	-0.02
- in 'mixed' corridor			0.11 **	-0.02
- near 'auto' corridor			0.04	0.06
- near 'mixed' corridor			-0.02	0.01
Big box stores (number)	-0.02 **	0.80 ***		
- in 'auto' corridor			0.05	0.03

Explanatory Variable	*Real Estate*	*Shopper Choice*	*Retail Sales*	*Retail Sales Growth*
- in 'mixed' corridor			1.11	-0.05
- near 'auto' corridor			0.02	0.02
- near corridor		0.84 ***		
- near 'mixed' corridor			0.02	0.07
National chain stores (number)[75]	-0.01 ***			
- in 'auto' corridor			-0.09 **	0.01
- in 'mixed' corridor			-0.06	-0.04
- near 'auto' corridor			0.11	-0.03
- near 'mixed' corridor			-0.12 **	0.01
Number of corridors near 'auto' corridor			0.25 ***	0.01
Number of corridors near 'mixed' corridor			0.06	-0.01
Number of corridors near parcel (within 1/4 mile)	0.01 ***			
Number of big box / chain pharmacy's / chain grocery stores (squared)		-0.00 ***		
Corridor has a car dealership	0.03 ***	-0.28 ***	0.16 ***	-0.02
Interventions				
Business Security Assistance Program spending ($100,000s) cumulative	0.01 ***		0.28 ***	0.08
Business Property Improvement spending ($100,000s) cumulative	0.04 ***			
Community Design Collaborative projects cumulative	0.02 ***		0.02	-0.02
Community Reinvestment Act loan value ($100,000's) cumulative	-0.00 ***		-0.00 *	0.00
Corridor in a				
- PACDC	-0.00		-0.08	-0.02
- Federal Empowerment Zone	-0.03 ***		0.13	-0.04
- PA Enterprise Zone	0.02 ***		-0.06	-0.01
BID/NID	0.03 ***			
- BID/NID ('auto' corridor)			0.34 ***	0.29 **
- BID/NID ('mixed' corridor)			-0.00	0.11 **
Economic Stimulus Funding ($100,000s) cumulative	-0.00		-0.01	-0.01
Exterior Commercial Improvement Project spending ($100,000s) cumulative	-0.01 ***		-0.09 **	0.03
Number of LISC projects	-0.00 ***			
LISC intervention and capacity grant spending ($100,000s) cumulative	-0.01 ***	-0.00	0.00	0.03 **
Mural arts projects cumulative	0.01 ***		0.02 **	-0.01
Number of city tax credit partners	0.10 ***		0.12	0.00
Pennsylvania Horticultural Society				
- Land Stabilization project area (sq. mile) cumulative	2.20			
- Land Stabilization project area in 'auto' corridor cumulative			433.17 **	101.01
- Land Stabilization project area in 'mixed' corridor cumulative			102.10 ***	199.51 ***
- Landscaped Gateway project area (sq. mile) cumulative	0.06 ***		0.20	-0.22
- Park Revitalization Project Area (sq. mile) cumulative	-2.02 ***		0.82	1.81

[75] The data on national chain stores are very limited, so the econometric results are based on very few observations.

Explanatory Variable	*Real Estate*	*Shopper Choice*	*Retail Sales*	*Retail Sales Growth*
Transit				
Corridor has a rapid transit stop in 'auto' corridor				
Corridor has a rapid transit stop in 'mixed' corridor	0.03 ***	0.03	0.21	0.08 *
Corridor has regional rail stop in 'mixed' corridor	0.03 ***		-0.32	0.26 ***
Number corridor trolley trips in 'mixed' corridor	0.00 ***		0.00	0.00
Number of corridor bus trips in 'auto' corridor	-0.00 ***		0.00	-0.00
Number of corridor bus trips in 'mixed' corridor	0.00 ***		0.01 ***	-0.00
Number of corridor Bus/Trolley trips in 'auto' corridor		-0.01 ***		
Number of corridor Bus/Trolley trips in 'mixed' corridor		-0.01 ***		
Number of corridor trolley trips in 'auto' corridor	0.01 ***		0.03	-0.01
Percent of Trips that Drove		0.73 ***		
Distance				
Distance and traveled by Public Transport (cubic)		0.00 *		
Distance and traveled by Public Transport (squared)		0.09 ***		
Distance and walked (cubic)		-0.07 ***		
Distance and walked (squared)		1.11 ***		
Distance traveled and car owner		0.10 ***		
Distance traveled by car		-1.62 ***		
Distance traveled by car (cubic)		-0.01 ***		
Distance traveled by car (squared)		0.15 ***		
Distance traveled by car and out of corridor trip		-9.52 ***		
Distance traveled by car and out of corridor trip (squared)		5.40 ***		
Distance traveled by Public Transport		-1.16 ***		
Distance traveled by Public Transport and out of corridor trip		-21.83 ***		
Distance traveled by Public Transport and out of corridor trip (squared)		26.68 ***		
Distance traveled by walking		-5.28 ***		
Distance traveled by walking and out of corridor trip		-67.13 ***		
Distance traveled by walking and out of corridor trip (squared)		210.41 ***		
Real Estate Specific				
Brick construction (vs. masonry)	0.1 ***			
Frame construction (vs. masonry)	-0.08 ***			
Garage	0.16 ***			
Less than 2 stories	0.04 ***			
Log building area	0.36 ***			
Log distance to city hall	-2.53 ***			
Log distance to city hall squared	0.13 ***			
Log lot area	0.23 ***			
Stone construction (vs. masonry)	0.08 ***			

Explanatory Variable	*Real Estate*	*Shopper Choice*	*Retail Sales*	*Retail Sales Growth*
Retail Sales Specific				
1996			0.13 ***	1.25 ***
1997			0.13 ***	1.22 ***
1998			0.21 ***	1.12 ***
1999			0.38 ***	1.25 ***
2000			0.41 ***	0.99 ***
2001			0.41 ***	1.01 ***
2002			0.38 ***	1.15 ***
2003			0.42 ***	1.03 ***
2004			0.46 ***	1.13 ***
2005			0.46 ***	0.96 ***

Source: Econsult Corporation (2008)

12.0 CORRIDOR PERFORMANCE - FINDINGS

This chapter lays out our interpretation of the econometric results both for the individual explanatory variables and for selected topics of interest. Also, the econometric investigation reveals which explanatory variables have a statistically significant impact on corridor performance as measured by shopping trips, retail sales growth, or real estate values. We will examine selected topics in more detail, including transit access, arts organizations, the relationship between real estate value and corridor performance, and the interplay between shopping, race, and ethnic corridors. Although we limited our analysis to these focused topics, many other similar analyses are possible within this framework.

We would generally expect that an explanatory variable that has a significant positive impact on one performance variable would also have a significant positive impact on other performance variables. However, because the performance variables measure different things, and because the explanatory variables can affect corridors in different ways, an explanatory variable can have a significant impact on one performance variable and not on another or even have the opposite effect. For example, hospitals are associated with strong retail sales, and are also associated with lower real estate values.

It is possible for an explanatory variable to have a significant impact on one performance variable and not on another.

Also, trips and sales are more conceptually alike than real estate values, as trips and sales both measure the retail aspects of corridors directly, whereas real estate values measure the locational value of a corridor, which can include values unrelated or indirectly related to retail activity.

Even if the econometric investigation does not indicate that an explanatory variable is statistically significant, it does not necessarily mean that the variable has no impact on corridor performance. There are several reasons for this. First, some events have clearly defined times, and clear before and after periods. For example, a BID either exists or it doesn't, and it is clear when the before and after periods are. Other events occur over time, and the concept of before and after is diluted. For example, if a corridor plants ten trees per year for 5 years, there are five years before the full effect is realized. This fuzziness makes it difficult to estimate the impact. Second, the corridor level analyses may dilute some relationships, especially when the intervention is targeted to a specific parcel. For example, a façade improvement at a store may be very helpful for that store, but may have only minimal impact for the corridor as a whole.

Due to these difficulties, the retail sales and shopper choice models have a high hurdle to overcome. Positive findings give a good indication about the importance of the variable, particularly if two or more regressions agree on the parameter estimate.

12.1 CORRIDOR CHARACTERISTICS

Corridor characteristics are aspects of the corridors themselves, and include items such as the size of the corridor, the number of off-street parking spaces, and the number of decades since the corridor was first developed. Some of the characteristics are changeable in the short to medium run, while others are largely fixed when the corridor is first constructed.

Corridor Age

Corridor Age is not significantly associated with corridor performance.

Corridor age is not significantly associated with sales or trips. This result is somewhat unexpected, for two reasons. First, newer corridors are built in areas with strong retail potential. Places that do not now have, or did not recently have, retail potential would not see new corridors constructed. On the other hand, old corridors can be located in places that once had strong retail potential, but no longer do. Second, the needs of retailers for parking, store size, store layout, and proximity to other stores evolve over time. Retailers choose newer configurations because stores in these configurations generally perform better, all else being equal. Newer corridors are more likely to be able to accommodate modern store layouts and types, because they were built recent store requirements in mind, while older corridors may have a large number of functionally obsolete structures. However, we can interpret these findings as evidence that other elements of the regression, such as size, parking, and auto vs. mixed, are capturing these design differences, and that any important retail advantages imputed by location are captured in other variables.

Newer corridors are associated with higher real estate values, likely because higher value areas offer more retail potential. In addition, the effect likely works the other direction as well - newer corridors may contribute to greater real estate values

Corridor Area and Number of Stores

Larger Corridors, both in area and number of stores, have stronger retail performance and draw more trips than smaller corridors.

Larger corridors, both in terms of area and in terms of the number of stores, have stronger retail performance and draw more trips than smaller corridors or corridors with fewer stores. Both of these results are fairly straightforward, as one would expect sales or trips to increase as corridor size or the number of stores (which is related to size) increases.

Leadership

Corridor leadership showed a significant relationship with shopping trips and real estate values. The Econsult / LISC panel of retail experts evaluated the strength of leadership in each of the corridors. This leadership variable reflects their opinion of how organized the corridor is, and whether it has the capability to engage on matters that affect the entire corridor. The results imply that better leadership draws more trips but not more sales, so that the additional trips may be of low value. This is an unexpected result and warrants further investigation.

The leadership results imply that better leadership draws more trips, but this does not result in higher retail sales.

Parking

The data from the 2002 Philly Shops report indicate how many off-street parking spaces, including both public spaces and private spaces, are in a corridor, but the data do not include information regarding the cost of parking. Further, not every corridor was surveyed, so there are corridors without reliable information. However, given these limitations, it is still possible to analyze the impact of parking on corridors. To control for different size corridors, we have analyzed parking on a per-store basis rather than in absolute number of spaces.

Corridors with more parking per firm receive more shopping trips, have greater retail sales, and have greater real estate values.

Corridors with more parking per firm receive more shopping trips, have greater retail sales, and have greater real estate values than corridors with fewer parking spaces. This result is broad, for all three major performance variables.

Parking is an amenity for shopping corridors, but only up to a point. For both auto and mixed corridors, as the number of spaces per firm increased, the benefit of each additional space decreased. Furthermore, off-street parking for mixed corridors is associated with more additional sales than auto oriented corridors. This likely reflects the smaller number of spaces in mixed corridors, and the greater contribution each space has because there are fewer spaces to begin with.

Store Births and Deaths

A high rate of births is correlated with lower retail sales, but is also associated with strong corridor growth. It is not surprising that additional stores are correlated with growth, as it makes sense for new stores to open in growing areas, and new stores also contribute to growth. Births are also associated with corridors with lower than average sales, so the picture that emerges is of stores opening in corridors that are weaker than average, but growing. Store deaths is positively correlated with Real Estate, but it is not correlated with any other corridor performance variable, which implies that stores close in all kinds of corridors, both high and low performing.

A high rate of births is correlated with lower retail sales and real estate values but is associated with strong corridor growth. Store deaths are not correlated with corridor performance.

Store Density

Corridors with more stores per square mile out-perform lower density corridors, even after controlling for number of stores and corridor area. A larger number of stores per unit of area suggests smaller stores, or stores that are vertically stacked. Either type of store is likely in an area where rents are higher than average, which is also where higher sales are to be expected. This suggests that efforts to compact stores within some corridors might be helpful.

High density corridors outperform low density corridors.

Store Mix

A good store mix is very strongly associated with good corridor performance. A good store mix can help draw a wide spectrum of shoppers, and it can serve shoppers who intend to purchase several types of goods in one trip. It is not surprising that store mix is important, as single-owner shopping centers and malls place great importance on seeking a good store mix for their centers. Furthermore, a good store mix can be viewed as a proxy for corridor success, so it is not surprising that a good mix is correlated with performance.[76]

A good store mix is strongly associated with good corridor performance.

The store mix variables used in this report are subjective assessments. A more detailed study of corridors, and stores in corridors, could provide more objective insight into what elements contribute to a good store mix. For example, we could examine store mix quantitatively using store level NAICS codes from the Revenue Department data.

Summary

Corridor characteristics have a major influence on the performance of a corridor. Size, parking, density, and store mix are important contributors to trips and sales (see Figure 12.1).

[76] For the PCPC store mix variable, smaller scores are better, so a negative regression coefficient represents a positive association. For presentation purposes, we have removed the negative sign.

Figure 12.1 - Impact of Corridor Characteristics on Corridors

Explanatory Variable	*Shopper Choice*	*Real Estate*	*Retail Sales*	*Retail Sales Growth*
Corridor age		+ +	.	.
Corridor area	+ +	- -	+ +	- -
Leadership	+ +	+ +	.	.
Number of firms	+ +	- -	+ +	.
Parking density	+ +	++	+ +	.
Store 'births'		.	-	+
Store 'deaths'		+ +	.	.
Store density		+ +	+ +	.
Store mix	+ +	+ +	+ +	+ +

"+ +" = consistently positive, "+" = positive, "." = no effect, "-" = negative, "- -" = consistently negative, "blank" = not investigated
Source: Econsult Corporation (2008)

12.2 Neighborhood Characteristics

Neighborhood characteristics are aspects of the neighborhoods including and surrounding the corridors, and include items such as whether there is a college or hospital nearby, crime rates, and income levels

Income and Poverty

Corridors with high poverty rates receive fewer trips and sales.

Corridors with a high percentage of households below the poverty line receive fewer shopping trips and have lower real estate values than corridors with lower percentages of low income households. Corridors with higher income households nearby have significantly higher real estate values, and they are slightly less likely to receive shopping trips. We expect real estate values to be lower in higher poverty / lower income neighborhoods, and higher in higher income neighborhoods, so this finding is consistent with expectations. Further, there are several factors influencing how trips or sales are associated with income.

First, we expect that for corridors with highly localized catchment areas, corridors in high income neighborhoods would have greater sales than lower income neighborhoods because goods in higher income areas tend to be more expensive. In addition, we expect large scale, auto oriented corridors with high sales to locate in areas with lower land values, which are associated with lower incomes. Furthermore, since the survey slightly over sampled on lower income respondents, lower income corridors should receive slightly more trips than higher income corridors. These are potential areas for future study.

Population

Population in or near a corridor is not significantly associated with corridor performance.

Population in and near a corridor is not significantly associated with corridor performance, though we could expect higher population corridors to have greater sales, especially for locally oriented retailers. This effect may be overwhelmed by larger corridors with lower populations, such as regional or community centers.

Foreclosures

Foreclosures of mortgages show negative relationship with shopping trips and real estate values. Foreclosures in the city more often occur in areas with lower incomes, and hence lower real estate values, which is in line with expectations.

Crime

Higher crime rates in a corridor are associated with inferior corridor performance. Crime is primarily measured by aggravated assaults, though the results are the same if crime is measured by murders. This result is statistically significant even though the data used to measure crime is more aggregated than much of the other data. More detailed information on crime would make it possible to measure the impact on corridor performance with more specificity.

Higher crime rates in a corridor are associated with inferior corridor performance.

Institutions - Colleges

A college located in a corridor does not have a statistically significant impact on sales or trips. This is somewhat unexpected, as colleges and universities typically have a large number of retail outlets catering to students and employees. However, many college and university students use a cell phone instead of a land line, often with area codes other than 215 or 267. The phone survey called only land lines, and thus probably under-sampled people most likely to make trips to college-related retail. Further, college-related retail tends to be more oriented toward convenience and lower cost goods than non-college related retail, so it is not surprising that retail sales in college corridors are not significantly greater than sales in non-college corridors. Colleges are associated with higher real estate value, which likely reflects the value of amenities offered by colleges.

A college located in a corridor does not have a statistically significant impact on sale or trips, which is likely due to an under-sample of people most-likely to make trips to college-related retail.

Institutions - Hospitals

A hospital located in a corridor is associated with increased trips to the corridor, as well as increased retail sales in a corridor. Hospitals have a substantial number of employees and visitors, and are therefore a source of demand themselves. Furthermore, they contain doctor and dentist offices, which are a source of retail sales as well. However, hospitals in corridors are associated with lower real estate values.

Summary

Most neighborhood characteristics affect performance as expected. Crime, foreclosures, and poverty are harmful for corridor performance, and hospitals help retail sales and shopper choice (see Figure 12.2).

Figure 12.2 - Impact of Neighborhood Characteristics on Corridors

Explanatory Variable	*Shopper Choice*	*Real Estate*	*Retail Sales*	*Retail Sales Growth*
Arts district (4+ organizations)		+ +		
Arts organization		-	.	.
Crime - Robberies	.			
Crime - Aggravated assaults		- -	- -	.
Income - Foreclosures in corridor (2006)	- -	- -	.	.
Income - Household Income (average in $10,000s)	-	+ +	.	.
Income - Percent population below poverty level (10s %)	- -	- -	.	.
Institutions - Banks	- -			
Institutions - Colleges	.	+ +	.	.
Institutions - Health institutions		-	.	.
Institutions - Hospitals	+ +	- -	+ +	.
Park area		- -	.	.
Population		- -	.	.

"+ +" = consistently positive, "+" = positive, "." = no effect, "-" = negative, "- -" = consistently negative, "blank" = not investigated

Source: Econsult Corporation (2008)

12.3 Corridor Competition

Competition results are more nuanced than other explanatory variables.

The competition results are more nuanced than the other types of explanatory variables. In addition to the all-inclusive examination of these variables, we have also examined whether the relationship between the performance variable and corridors are different for auto and mixed corridors, or whether the relationships are different depending on whether the store is in the corridor, or simply near the corridor. In addition, having a corridor nearby also can impact the performance of a corridor.

There are several things to keep in mind when interpreting the results. First, most of the competition variables address the impact of regional and national chains. Thus, the chain grocery variable looks at the impact of a Superfresh or Acme on a corridor, and not the impact of a corner or non-chain grocery. In addition, the retail sales in a corridor include the sales of the regional or national chain. Further investigation could shed light onto intra-corridor effects, such as the impact of a chain grocery on the existing inventory of non-chain groceries, or other type of stores.

Chain Groceries

In general, grocery stores are beneficial for trips and retail sales, but somewhat harmful for real estate values. Corridors with at least one grocery store receive more trips than corridors that do not have a chain grocery. A grocery store inside a mixed corridor is also associated with greater retail sales in the corridor, all else being equal, but not for an auto-oriented corridor. On the other hand, a chain grocery that is near a corridor, but not in it, is associated with *lower* retail sales for auto corridors but has no effect in mixed corridors.

Qualitatively, chain groceries provide significant positive commercial impacts, and the positive effect is stronger for mixed corridors than auto corridors. This is expected as groceries are very strong trip generators and are also the location of many households' retail expenditures.

Chain grocery stores are associated with lower real estate prices for parcels near the corridor. This finding is consistent with the literature as groceries have a great deal of traffic, both from customers and delivery trucks. Also, because chain groceries, especially groceries with parking lots, require moderate to large parcels of land, they have incentives to locate in places with lower land costs.

Chain Pharmacies

Chain pharmacies are beneficial, or at least not associated with poor performance, for trips, retail sales, and real estate values.

A chain pharmacy inside a corridor increases trips to the corridor. In addition, for mixed corridors, sales increase as the number of chain pharmacies increase, but not for auto-oriented corridors. Furthermore, real estate values are greater in corridors with chain pharmacies than in corridors without a pharmacy. However, pharmacies that are near, but not in, a corridor, do not affect corridor performance. Encouraging chain pharmacies to locate within a corridor will help attract shoppers to a corridor; however, it is not yet known whether it would increase the trips or sales for other stores within the corridor.

Chain pharmacies are therefore beneficial by all measures in a corridor and are most beneficial when they are in not near a mixed corridor. Chain pharmacies are a combination of several types of stores, such as a prescription drug seller, a basic daily goods store, and a convenience store, and should be viewed as an amenity to the neighborhood. They could also be thought of as providing a signal that a corridor meets a minimal level of quality.

Big Box Stores

Big box stores, such as Walmart or Loews, are beneficial for trips, but not retail sales, and are moderately harmful for real estate values.

Big box stores do not drive sales solely independent of size, parking, and other functions.

A big-box store in or near a corridor increases trips to the corridor. Indeed, trips to a corridor increase by approximately the same amount whether the big-box store is in or near a quarter mile of the corridor. Big-box store that are beyond ¼ mile of a corridor do not have a statistically significant impact on trips to the corridor.

However, a big-box store inside a corridor does not appear to be associated with increased retail sales in a corridor, all else being equal. Furthermore, corridors with a big box store nearby do not have significantly different sales than corridors that do not have big-box stores nearby. This is somewhat surprising considering the size of big box stores. However, this variable is measuring whether the simple presence of a big box increases sales, independent of parking, corridor area, etc. This result says that the big box itself is not the driver of sales, rather, other factors, such as corridor size, parcels, and store mix, are what matter.

Real estate prices in a corridor with big-box stores are slightly lower than real estate prices in and near corridors without big-box stores. These stores do draw a large amount of traffic, and big box stores require a large amount of land, they have incentives to locate in places with lower land costs.

Qualitatively, big box stores provide limited but positive commercial impacts. This measured benefit of big-box stores, and the lack of impact when a big-box store is near but not in a corridor, indicate that there is no evidence that big boxes have adversely affected sales in corridors in the 1996-2005 period, though it is possible that big-box stores have affected local retailers in some instances. More detailed analysis on an intra-corridor level could reveal additional insight into this question.

Other Corridors

Auto oriented corridors with other corridors nearby had greater retail sales than isolated corridors, but the same is not true for mixed corridors. Also, corridors with other corridors nearby are associated with slightly greater real estate values. There are several potential reasons for these findings. Corridors with other corridors nearby are more likely to be in areas that have strong retail potential, especially for more recently developed auto corridors. Furthermore, corridors can act as attractors for other corridors, so that shoppers can travel to more than one corridor at a time, and this is more likely for auto-oriented corridors because the distance can be travelled easily. In addition, trips to one corridor can expose shoppers to nearby corridors, raising shoppers' awareness of the types of shopping in adjoining corridors, which makes those corridors more likely to receive future visits. Further investigation will lead to a better understanding of which explanations are most influential.

The fact that nearby 'mixed' corridors do not add to neighboring 'mixed' use corridors, coupled with the fact that store density matters, suggests that there could be some gains from consolidation of stores within a corridor. However, as a counterpoint, distance to a corridor is a major influence on the number of shopping trips. This suggests that eliminating a corridor altogether may not be helpful, unless there are other corridors very close by.

Density and distance results imply that it makes sense to group stores within a corridor, but not eliminate corridors entirely

Summary

Chain groceries, big box stores and chain pharmacies, all have possible impacts on corridors in certain circumstances as illustrated in Figure 13.6. Most competition characteristics increase trips, but only grocery store and chain pharmacy are associated with greater retail sales, and only for mixed corridors (see Figure 12.3).

Figure 12.3 – Impact of Competition on Corridors

Explanatory Variable	*Shopper Choice*	*Real Estate*	*Retail Sales*	*Retail Sales Growth*
Chain grocery				
In corridor	+ +	- -		
In 'auto' corridor			.	.
In 'mixed' corridor			+ +	.
Near 'auto' corridor			- -	.
Near 'mixed' corridor			.	.
Chain Pharmacy				
In corridor	+ +	+ +		
In 'auto' corridor			.	.
In 'mixed' corridor			+ +	.
Near 'auto' corridor			.	.
Near 'mixed' corridor			.	.
Big Box stores				
In corridor	+ +	- -		
In 'auto' corridor			.	.
In 'mixed' corridor			.	.
Near corridor	+ +			
Near 'auto' corridor			.	.
Near 'mixed' corridor			.	.
Other Corridors				
Near parcel		+ +		
Near 'auto' corridor			+ +	.
Near 'mixed' corridor			.	.
Origin Corridor	+			
Closest Corridor	+ +			
Next Closest Corridor	+ +			

"+ +" = consistently positive, "+" = positive, "." = no effect, "-" = negative, "- -" = consistently negative, "blank" = not investigated
Source: Econsult Corporation (2008)

12.4 Corridor Interventions

Some interventions consistently demonstrate effectiveness, but for most, there is no strong evidence of effectiveness.

There are four analyses that measure the effectiveness of interventions; retail sales, retail sales same-store growth, shopping trips, and real estate values. We primarily rely on retail sales and retail sales same-store growth to evaluate the effectiveness of interventions. We rely less on the shopping trip data, which are available only for one year, and hence do not present an opportunity to examine corridors before and after interventions, and real estate values, which are captured at the corridor level, and are driven by much more than the characteristics of the commercial corridor. In addition, we refer to another parcel level analysis to supplement the effect on real estate values.

There are some interventions, such as the PHS Land Stabilization program and the introduction of Business/Neighborhood Improvement Districts, which demonstrate a statistically significant, positive relationship with the indicators of corridor performance in most analyses. In other cases, such as Business Security Investments or the Mural Arts Program, there was some indication of a relationship, but the relationship was not consistent throughout our analysis.

For the majority of interventions, however, there is no strong evidence of significant influence on corridor performance. As discussed in the lead-in to this chapter, there can be several data-driven reasons why the econometric investigation does not indicate a statistically significant relationship. Indeed, because this is a corridor-level analysis and many of the interventions are parcel based, there is a high econometric bar that the interventions must hurdle to show statistically significant relationships. Additionally, the retail sector has seen powerful, ongoing market innovations that are likely to have overwhelmed more modest public and private corridor interventions.

In addition to the final regression presented in this report, there were many preliminary formulations of the regression equations. The more often an explanatory variable shows up as significant in these regressions, the greater the confidence is in that explanatory variable.

From a policy perspective, interventions have different levels of cost effectiveness. Expensive interventions are not necessarily more effective than less expensive ones. Also, interventions do not necessarily have the same effectiveness in all circumstances, and some interventions may have been undertaken in areas less responsive to the interventions than other areas. An intervention, for example, may have been undertaken in a corridor with little growth potential, but nonetheless may have been perceived as crucial to the welfare of residents it served. In this instance, it is unlikely that the intervention would have a dramatic impact in our data, even if it fulfilled its intended goal.

Strong Evidence of Effectiveness

The following interventions present strong evidence of effectiveness:

BIDs and PHS Land Stabilization consistently demonstrate effectiveness

Business Improvement Districts (BID) / Neighborhood Improvement Districts (NID)

A business improvement district (BID) is a public-private partnership in which a defined area receives special funding (often a supplement to the property tax) for services and improvements to the district's public realm and trading environment.[77] BIDs typically provide services such as street and sidewalk maintenance, public safety officers, park and open space maintenance, marketing, capital improvements, and various development projects. The services provided by BIDs supplement the services already provided by the City. One of the BIDs' core functions is to improve its area for the benefit of business, so we would expect BIDs to be among the most likely interventions to demonstrate a positive effect. Indeed, BIDs/NIDs show a strong relationship in the retail sales model and the sales growth model, as well as the real estate values model. There are 38 corridors covered by BIDs/NIDs from 1995 to 2005.[78]



Source: University City District (2008)

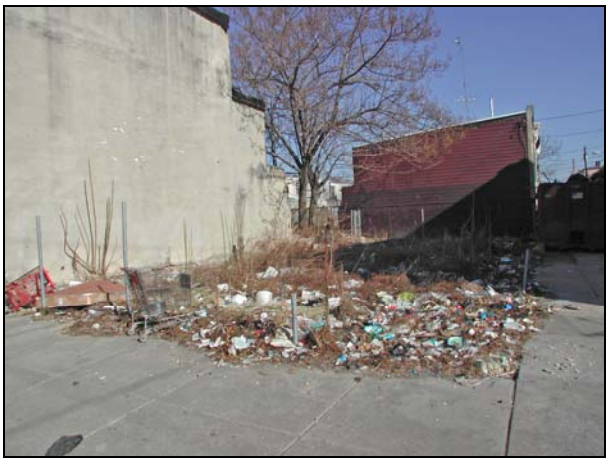
PHS Land Stabilization

The Pennsylvania Horticultural Society (PHS) Land Stabilization program cleans vacant, often trash-filled lots. PHS carts away trash, and then grades the lot, plants grass and trees, and installs split rail fencing. The program includes a maintenance component, which cuts the

[77] In Pennsylvania, BIDs were changed to Neighborhood Improvement Districts (NIDs) in the 2000 legislative session.

[78] Please see Figure X.5, page A-100 for the location of BIDs/NIDs.

grass in warm months. The program thus removes a negative influence and installs a neutral or positive amenity. This program shows a strong relationship in the retail sales model and the sales growth model. Land stabilization projects range anywhere from 0.03 acres to 4.4 acres with a total of new projects accounting for 31 acres between 1995 and 2005.[79]





Source: Pennsylvania Horticultural Society (2007), Econsult Corporation (2008)

Some Evidence of Effectiveness

Other interventions demonstrate a positive relationship with one or more explanatory variables, but are not consistently positive. These explanatory variables present inconclusive results. There is insufficient evidence to conclude that there is a strong relationship, and yet there is enough evidence at least to suggest a positive influence. Given the econometric hurdles that must be overcome to demonstrate significance, we interpret these interventions as likely to show strong results if further investigation is conducted with more detailed data.

[79] Please see Appendix Z for the locations ("Location of Pennsylvania Horticultural Society Stabilized Lot Investments, 2002-2007").

Business Security Improvements

Business security improvements are grants and loans to allow business owners to improve the security of their establishments. This intervention provides businesses with a matching rebate from the City for approved security improvements. For example, owners can use the funds to install security grates or security alarms. There was $1,428,877 invested between 1995 and 2005. This program shows a positive relationship in the retail sales model and the real estate model. However, it is not clear why this intervention would improve retail sales, but one explanation is that the extra security makes business owners feel more secure, hence they become more willing to stock higher value items, which can lead to increased sales.

The Local Initiatives Support Corporation

The Local Initiatives Support Corporation ("LISC") provides several types of support to neighborhoods. Broadly speaking, LISC has two main types of investments, capacity building and project specific investments. Capacity building grants go to neighborhood organizations or community development corporations to improve their administrative structures, management and financial systems, or real estate development and management capacities. Project specific investments help fill the financial assistance "gap" in a development deal that would otherwise not be filled by the traditional lending market.

Although their core mission is not specifically targeted to commercial corridors, many of the initiatives LISC supports are in commercial corridors. In the study period, LISC provided $7,673,737 of funding in commercial corridors covered by this study, of which $2,367,473 was for capacity building and $5,306,264 was project specific. Our analysis indicates that LISC's grants show a positive relationship with retail sales growth, but no relationship with retail sales levels, and a negative relationship with real estate values. Further investigation indicates that the positive relationship is related to the project specific investments, but capacity building grants did not have a significant relationship with retail sales growth. This is reasonable, as capacity building is indirect support, whereas project specific work is direct.

Mural Arts Program

Since its inception in 1984, the Mural Arts Program (MAP) has created over 2,700 works of public art throughout the city of Philadelphia, primarily on the sides of buildings, bridges, or other large blank hard surfaces. There were approximately 366 murals painted in corridors between 1995 and 2005. This program shows a positive relationship in the retail sales and real estate models. Many of these projects are intended to help stabilize abandoned or otherwise unattractive lots and buildings, including surfaces that had previously been covered

in Graffiti. Regardless of the artistic success of the work, the fact that the mural is painted signals that there is investment in the corridor.

Other Interventions

In addition to the interventions that show a positive relationship, there are several types of interventions that do not display a positive relationship with the performance variables. The lack of positive relationship could mean many things, including that the investments were not made in appropriate places, or that positive influences are at the parcel level, and these positive effects are masked by a corridor level analysis.

Community Reinvestment Act Loans

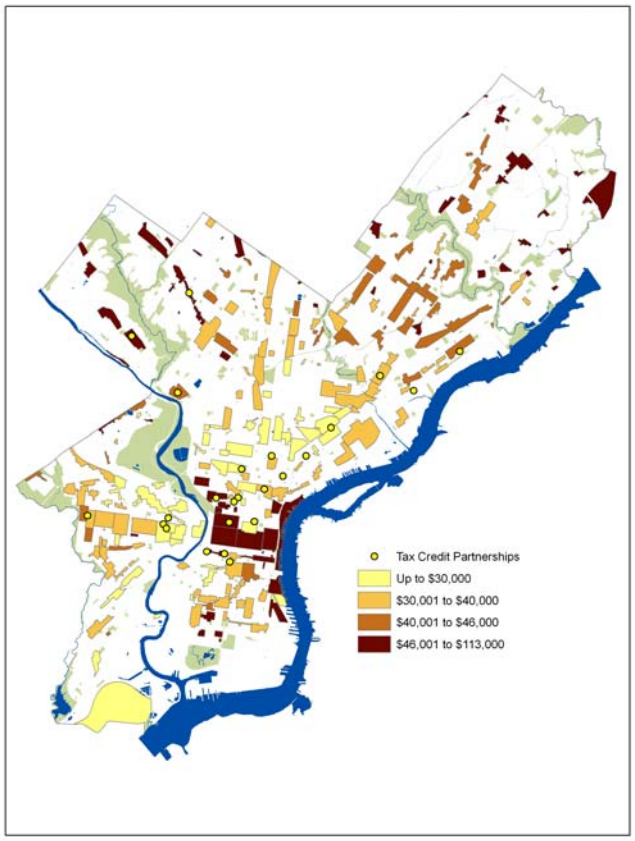
Community Reinvestment Act ("CRA") loans are made by banks to individuals and businesses in low income neighborhoods, which are areas that have difficulty finding traditional financing on commercially attractive terms. There were a total of more than $65 million in CRA loans made between 1996 and 2005. These loans are correlated with corridors that have lower real estate values, and lower retail sales, though this is likely because only distressed neighborhoods receive these loans in the first place.

City Tax Credit Partnerships

Some companies partner with nearly Community Development Corporations (CDC's), and provide them with financial support. These companies receive tax credits from the City for their donations to the CDCs. There were 16 corridors with city tax credit partnerships between 2001 and 2005. These programs do not show a strong relationship with retail sales or shopping trips, but do have a positive relationship with real estate values. Because there are few partnerships, and because the donations began toward the end of the study period, and because CDC's have broad concerns, not just commercial corridors, it is not surprising that there is no statistically significant effect on the performance variables measuring retail performance (see Figure 12.4)[80].

[80] Please see Figure X.4 in Appendix X for a map of CDCs receiving assistance under this program.

Figure 12.4 – Tax Credit Partnership CDCs and Mean Income of Corridor Residents



Source: Econsult Corporation (2008); City of Philadelphia (2007); US Census Bureau (2000)

Exterior Commercial Improvements and Business Property Improvements

Businesses wishing to invest in their property, including investments in the public-facing elements of the structures, can apply to the City for assistance. Such assistance usually involves the City granting tax credits or other funds for all or part of the cost of the improvements. Data were available for the Exterior Commercial Improvement program and its successor, the Business Property Improvement program. There was a total of $3,145,800 invested for exterior commercial improvement between 1995 and 2002, while a total of $3,013,694 was invested for business property improvement between 2002 and 2005.

Econometrically, the Exterior Commercial Improvement program is associated with inferior corridor performance while Business Property Improvements are associated with higher Real

Estate values; however, they do not have a significant relationship with sales growth. Moreover, the dollar value of spending was minimal until 2000, and about half of the expenditures under both of these programs occurred in 2002 or later. Thus, in many cases the corridors did even not complete work until after the end of our sample period, which would likely preclude observation of beneficial effects of these investments. In addition, these investments are not large enough to make significant physical changes to a large number of properties.

Landscaped Gateways and Park Revitalization

The Pennsylvania Horticultural Society (PHS) Park Revitalization program partners with other groups to clean, beautify and maintain more than 70 neighborhood parks, which are often in or close to a commercial corridor. This program improves the appearance and maintains existing green space, as opposed to the vacant lot program, which clears blighted space and turns it into green space. There were 26 corridors with Park Revitalization projects ranging from 0.02 to 119 acres with a total of 244 acres worked on between 1995 and 2005.

The Landscaped Gateway program focuses greening efforts on gateways to the City, such as the Delaware waterfront, Fairmount Avenue near the Art Museum, and Oregon Avenue. The Gateway program improves the general appearance of an area, but is not focused on a commercial corridor. There were 17 corridors with projects ranging from 0.64 to 343 acres with a total of 3,840 acres worked on between 1995 and 2005, these programs do not show a strong relationship with corridor performance in the retail sales model and the sales growth model, though there are positive relationships with real estate values.

Economic Stimulus Funding

The Economic Stimulus Funding Program provides grants for a wide variety of purposes, including: building acquisition, relocation costs, appraisal costs, architectural designs/soft costs, façade improvements, cultural center projects, parking projects, farmer's markets, historical buildings, environmental assessment and remediation, church projects, and other development projects. This funding from the Commerce Department totaled $10,913,940 in corridors between 1995 and 2005. However, these programs do not show a strong relationship with any of the performance variables. Given the wide variety of uses for the funds and the indirect applicability to corridors, this lack of relationship is not surprising.

Federal Empowerment Zone / Pennsylvania Enterprise Zone

These programs provide tax relief to businesses in the zones. In many instances, firms are exempted from most state and local taxes, other than wage and sales taxes. In addition, the Enterprise zone provides grants and training. These tax breaks directly benefit all types of businesses in the corridors, including non-retail businesses. There were 19 corridors entirely or partially in the Federal Empowerment zones and 63 corridors under Pennsylvania Enterprise zones between 1995 and 2005. These programs do not show a relationship with retail sales or retail sales growth, but do show a positive relationship with real estate values. These programs primarily provide tax relief, which would affect profitability more than it would affect retail sales.

Additional Information on Interventions and Real Estate Values

The real estate data are at a parcel level, which means we have information regarding all housing transactions throughout the city. However, our explanatory variables are aggregated to the corridor level as are other performance variables, so our analysis examines how corridor level attributes affect individual parcel-level house values. However, since many of the interventions are specific to a particular parcel, it is possible to conduct a more precise analysis, which compares parcel level interventions to parcel level values.

One example of a parcel-to-parcel analysis, though on a smaller scale, is a 2006 study by Susan Wachter and Kevin Gillen evaluating the impact of place-based investments.[81] In this study, several place-based investments were geocoded in relation to housing transactions, similar to what we have done for our real estate analysis, but at a parcel to parcel level, whereas our study is a parcel to corridor analysis. Gillen and Wachter find that a house that is adjacent to a stabilized and green lot, such as the lots treated in the PHS Land Stabilization program, has a price that is 17 percent higher than if it were not adjacent to the lot. Further, they find that houses located in a Business Improvement District have a 30 percent price premium. The results support our findings on interventions.

In addition, Gillen and Wachter report that commercial corridors generally tend to have negative impacts on surrounding neighborhoods, because of traffic congestion; but well-kept corridors can reverse that negative effect and even impart a positive effect. A corridor in "excellent" condition imparts a 23 percent price premium to nearby houses.

Another example is a 2004 study by Susan Wachter. Investigating the impact of several aspects of vacant land in or near parts of Fishtown, New Kensington, and Port Richmond

[81] "Public Investment Strategies: How They Matter for Neighborhoods in Philadelphia," Susan Wachter and Kevin Gillen (2006).

neighborhoods on house prices, Wachter finds that land stabilization has a very large effect on the price of adjunct houses.[82] Further, trees planted near housing also had positive impact on prices, proximity to transit increases value to houses that are close, but not too close to a rapid transit line.[83] These results support our findings on interventions.

Summary

In summary, several interventions are associated with improved corridor performance, which is a strong indication given how difficult it is to overcome the econometric hurdles. In addition, a more detailed analysis may shed more light on interventions that were not significant in this framework (see Figure 12.5).

Figure 12.5 – Impact of Interventions on Corridors

Explanatory Variable	*Real Estate*	*Retail Sales*	*Retail Sales Growth*
Strong Evidence of Effect			
Corridor in city BID/NID	+ +	+	++
PHS Land Stabilization	.	++	+
Some Evidence of Effect			
Business Security Assistance Program	+	+ +	.
LISC intervention and capacity grant spending	- -	.	+
Mural Arts Projects	+ +	+	.
Other Interventions			
Business Property Improvement spending	+ +	.	.
Community Design Collaborative Projects	+ +	.	.
Community Reinvestment Act loan value	-	-	
Corridor in Federal Empowerment Zone	- -	.	.
Corridor in PA Enterprise Zone	+ +	.	.
Corridor in a PACDC	.	.	.
Economic Stimulus Funding	.	.	.
Exterior Commercial Improvement Project Spending	- -	- -	.
Number of city tax credit partners	+ +	.	.
PHS Landscaped Gateway project area	+ +	.	.
PHS Park Revitalization Project Area	- -	.	.

"+ +" = consistently positive, "+" = positive, "." = no effect, "-" = negative, "- -" = consistently negative, "blank" = not investigated
Source: Econsult Corporation (2008)

[82] The Determinants of Neighborhood Transformation in Philadelphia – Identification and Analysis: The New Kensington Pilot Study," Susan Wachter (July 12, 2004).

[83] This is likely because transit is measured as proximity to the Market Frankford El, which is above ground, and is unpleasant for immediate neighbors.

12.5 Transit

Data

The data on transit includes information on whether there is a rapid transit (MFE, BSS, and PATCO) stop, a regional rail stop as well as how much bus and trolley service there is. Bus and Trolley service are measured by how many routes there are in a corridor, multiplied by the number of bus or trolley stops in a peak hour.[84]

Only 12 percent of shopping trips use transit.

First, as discussed in Chapter 12, we note that 12 percent of shopping trips in the household survey were taken by transit, compared to 66 percent for auto and 22 percent for walking / bicycling. We also note that the median trip distance for transit shopping trips is 1.6 miles, compared with 1.1 miles for shoppers using cars, and than 0.2 miles for shoppers walking to the corridor. Since transit users can also generally walk to stores, we do not expect transit to be used for many extremely short trips, and the data reflect this observation.

Also, for at least one third of corridors with good transit access (a high speed station, or frequent bus service and at least ten trip observations in the survey, half or more of shoppers use automobiles for their shopping trips to these corridors.[85]

Findings

Regional Rail – A regional rail stop in a corridor does not show a significant relationship with shopping trips or retail sales, though real estate values in mixed corridors with Regional Rail access are greater than values in corridors without this type of access, and retail sales growth in mixed corridors is significantly greater than in corridors without regional rail stops. However, because there are so few regional rail stops in or near corridors in the City, it is difficult to draw strong conclusions. Figure 13.6 summarizes these findings.

Mixed corridors benefit most from transit

Rapid Transit – Mixed corridors with a rapid transit stop have greater real estate values than corridors without a rapid transit stop. Also, retail sales growth in corridors with rapid transit stops is greater than in corridors without rapid transit access.

Bus and Trolley service – Bus and trolley service does not significantly improve the attractiveness of a corridor for shopping trips. However, bus service is associated with

[84] Please see Appendices AX and AY for transit related maps.

[85] We analyzed the data in two ways, defining "Frequent" bus service as either 30 or 50 bus trips in the peak hour. The result holds under either definition

improved retail sales performance in mixed corridors, though the effect is not strong. This result holds even if Center City is excluded from consideration, so the result is not driven by high store activity and bus service in the core.

Car ownership and shopping - The shopper survey indicated that 26 percent of the respondents lived in carless households. However, 25 percent of shopping trips take by these respondents was made with cars, often because the respondent received a ride from a friend or relative.

Interpretation

To the extent that they do show impacts, the impacts are mostly in the expected direction. For example, it is to be expected that public transportation is more important to mixed corridors, which have an element of walkability to them, than to auto corridors, which generally are not as transit friendly.

Weak findings imply that Philadelphia is not leveraging its transit system as much as it could

These findings, which are weak considering the size and extent of Philadelphia's transit system, strongly suggests that Philadelphia is not leveraging its transit system as much as it could. Specifically, we view the result as lack of appropriate development around transit. For example, there are a number of auto-oriented corridors that are adjacent to transit stops, but which do not take advantage of transit's proximity. These include the grocery stores at 46th & Market and 56th & Market, the fast food restaurants at Broad & Girard, and the auto corridor near the North Philadelphia train stations (see Figure 12.7). Further information on non-transit appropriate conditions near transit stops can be found in the "Transit Oriented Development" report for Neighborhoods Now.[86]

For rapid transit impacts, many of the corridors are adjacent to the Frankford and West Philadelphia elevated lines. These above ground lines which, while providing convenient access, have visual and noise impacts that are likely detrimental to the adjacent properties. This is especially true for portions of the West Philadelphia elevated that were undergoing reconstruction during the sample period, and were thus severely negatively impacted.

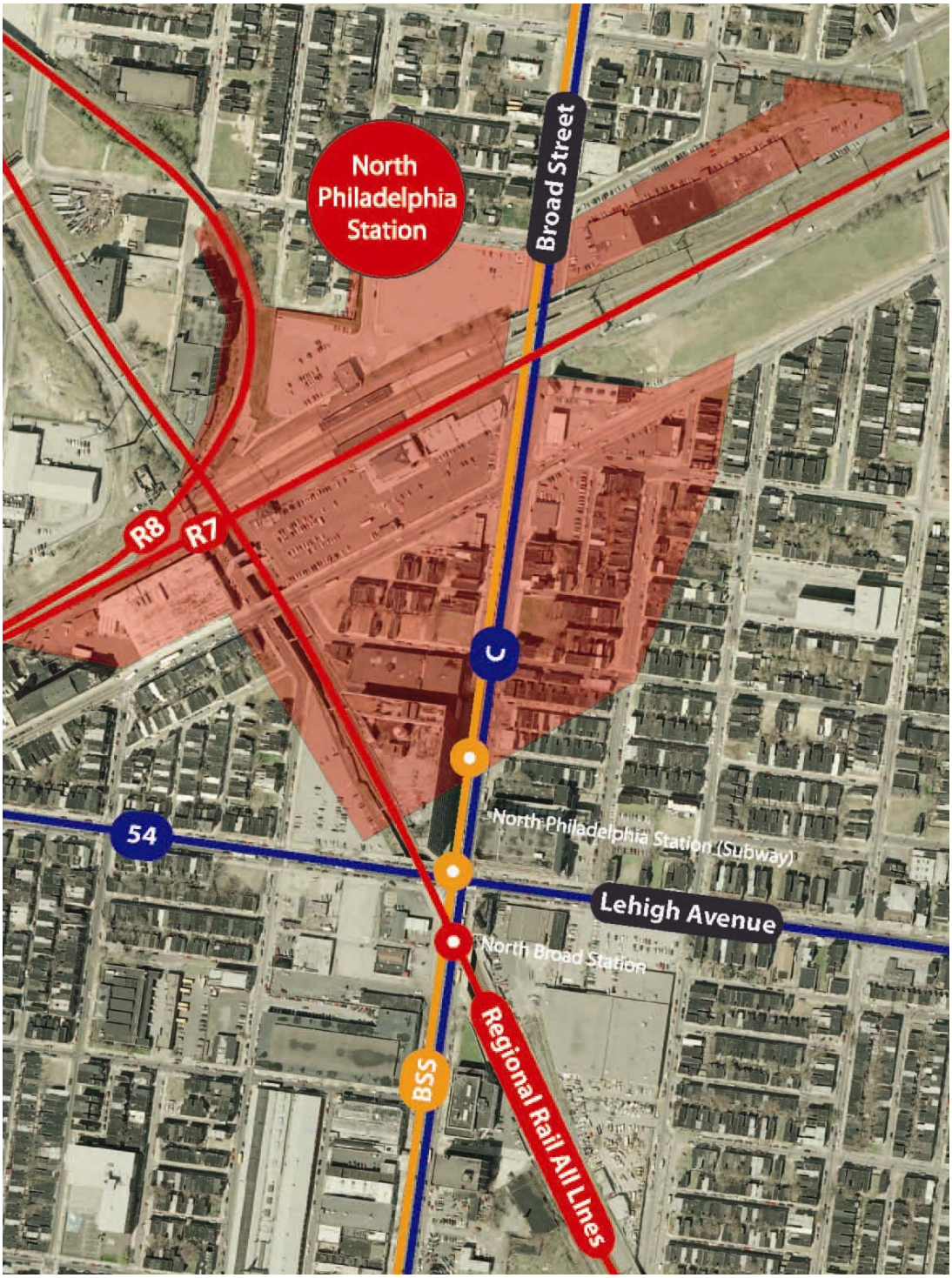
[86] Econsult Corporation. *Transit-Oriented Dev elopement in Philadelphia: Using a proven strategy to create more vibrant, livable neighborhoods.* October: 2007

Figure 12.6 – Impact of Public Transit on Corridors

Explanatory Variable	*Shopper Choice*	*Real Estate*	*Retail Sales*	*Retail Sales Growth*
Rapid transit stop in corridor – mixed corridor		++		+
Regional rail stop in corridor – mixed corridor		++		++
Bus/trolley trips – mixed corridor	-	++	+	
Bus/trolley trips – auto corridor	-	--		

"+ +" = consistently positive, "+" = positive, "." = no effect, "-" = negative, "- -" = consistently negative, "blank" = not investigated
Source: Econsult Corporation (2008)

Figure 12.7 - Transit Adjacent Development at Station Square



Source: Google Earth, Econsult Corporation (2008)

12.6 Arts Organizations

Arts Organizations do not drive corridor performance.

The data on arts organizations come from the Greater Philadelphia Cultural Alliance ("GPCA"). The data set is a membership list, and includes the headquarters locations of GPCA members. For purposes of estimating the influence of arts organizations, the data were cleaned to include only performance locations. These data do not include performance spaces that are not at the headquarters and the data only count whether an arts organization was present in 2007, and not when it became active.

In addition to looking at whether there is an arts facility in a corridor, we also looked at corridors with 4 or more arts organizations, to investigate whether there is a synergistic effect from several arts organizations together.

Corridors with at least one arts organization have lower real estate values compared to corridors without an arts organization and corridors with at least four arts organizations have greater real estate values compared to corridors with fewer than four organizations, and greater values than corridors with no organizations. However, according to the consumer choice survey, the presence of arts organizations, or an arts district, does not have a significant relationship with shopping trips, nor does the retail sales analysis indicate a relationship with retail performance.

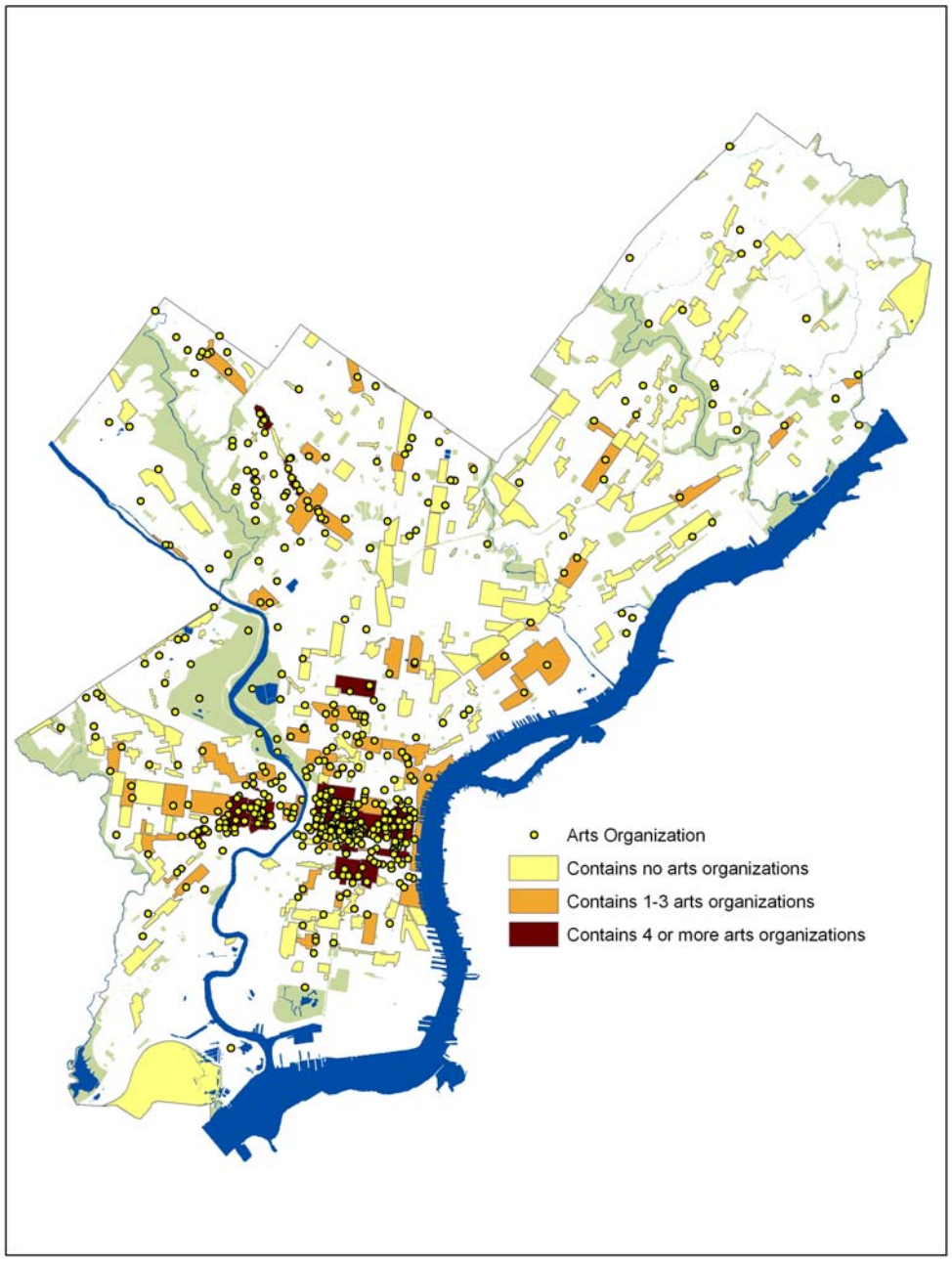
Arts clusters are mostly located in higher value neighborhoods.

From a real estate perspective, arts organizations often seek lower cost locations, which is consistent with the finding that they are located in lower value corridors. The positive result for clusters of organizations might reflect a neighborhood able to support multiple organizations, and the art cluster could also be an amenity for the neighborhood. We also note that most of the corridors with four or more Arts organizations are in or near Center City or University City.

Regarding retail sales and shopping trips, there are many ways in which arts organizations could influence corridors. For retail sales, they can act as a draw, and bring people to the corridor who would not otherwise travel there, and also encourage patrons to do ancillary shopping while attending a performance or visiting the gallery. On the other hand, arts organizations can also have a crowding out effect, as space occupied by the organization is not available for retail uses. Also, arts organizations that operate primarily at night, such as performing arts organizations, would likely have fewer ancillary benefits than those that operate during the day, such as galleries or museums.

A more detailed, parcel level analysis, could help in understanding the impact of arts organizations on retail shops in a corridor, or even on certain types of retail shops, such as restaurants.

Figure 12.8 - Arts Organizations



Source: Greater Philadelphia Cultural Alliance (2007); Econsult Corporation (2008)

12.7 Real Estate Values and Auto Oriented Corridors

As we noted in Chapter 12.3 regarding groceries and big box stores, corridors with these types of stores have lower real estate values than corridors that do not have these types of stores. This finding may be attributable to the need for large lots, and thus a need for relatively lower real estate prices.

More generally, we note that several of the largest auto oriented corridors are in locations with relatively lower real estate values.[87] We think there are two things at work. Corridors with large land requirements, such as newer auto-oriented super centers, need cheap land so they can afford to assemble such a large center. Also, the sprawling, congested nature of the successful auto oriented corridor is somewhat of a disamenity for nearby residential areas. On the other hand, corridors have also tended to avoid the areas with the lowest real estate values, which may be due to insufficient local buying power, difficult access, or other reasons why the very low value areas have lower values in the first place.

[87] Please see Appendix AZ for the largest auto corridors and their real estate values as a percent of submarket real estate value.

12.8 Shopping, Race, and Ethnic Corridors

Data and Findings

The household survey collected information on the respondents' race, and the 2000 census provides information on race at on the census tract level, which lets us to calculate the racial composition of the residents in and near each corridor. The household survey records the destination of each shopper, and the econometrics provide insight into whether shoppers tend to go to corridors where the surrounding population matches their race.

Of the respondents to the survey, 1.6 percent indicated they are Asian, 39.9 percent indicated they are black or African American, 50.3 percent indicated they are white, and 8.2 percent indicated "Other". Furthermore, the corridors are categorized by percent of each group in and near. For example, the residents in and near the 42-49th, Market-Locust corridor are 10.5 percent Asian, 62.7 percent black or African American, 21.7 percent white, and 5.1 percent other.

A preliminary examination from the shopper choice model indicates that people prefer to shop in corridors where the residents of the surrounding neighborhoods are the same race. For example, of the shopping trips made by people who indicated on the survey that they are black or African American, 40.9 percent of the trips were to corridors with populations that were at least 75 percent black or African American.[88]

There are several reasons for this result. First, and primarily, all else being equal, people shop close to home, and the stores that are close to home are often in corridors with a large percentage of people with the same racial background as the respondent. Similarly, different corridors appeal to different income groups, and dissimilarities in incomes amongst races also contributes to the finding that races shop in racially similar corridors.

Even after controlling for distance and income, however, we find that people choose to shop in corridors where the surrounding population is similar to the shopper. The findings indicate that people, traveling by car, will drive an extra one-half mile to one mile for every ten percent increase in the percentage of people of the same race in the corridor (see Figure 12.9).

[88] Hispanics can be of any race, and are not analyzed separately.

Figure 12.9 – Distance Travelled to Increase Ethnic Match by 10 Percent

Shopper Race	*Extra Distance (Miles)*
Asian	1.55
Black or African American	0.88
White	0.45

Source: Econsult Corporation (2008)

Interpretation

Results on sales and shoppers choice imply ethnic corridors draw shoppers from a wide area.

First, we note that the effect is small. Traveling an extra ½ mile is the same as traveling seven blocks, or approximately one to two minutes in a car. Thus, if there are two corridors equidistant from a shopper, and that are otherwise identical in the characteristics measured by the econometric model, then the shopper will travel to the corridor that has a higher percent of the same race. However, if one corridor has 10 percent higher concentration of the same race than the other, but is 10 blocks farther away, then the shopper will choose the closer corridor.

In addition, there are other reasons why we might observe the described shopper behavior. Some corridors specialize, to an extent, in goods that appeal to some ethnic groups more than others. Some examples of this kind of ethnic specialization are Chinatown, the collection of Asian grocery stores along Washington Avenue, the collection of African stores along Baltimore Avenue west of 46th, and the group of Russian stores in the Northeast near Bustleton Avenue and Red Lion Road. To the extent that Asians shop in the concentration of Asian stores more than non-Asians go to these stores, and some have to travel a distance to do so, (and the stores are in neighborhoods with high concentrations of Asians), an econometric analysis will show that Asians are willing to travel extra distance to increase the percentage of Asians in the corridor. In other words, if people of a given ethnicity are travelling long distances to go to an ethnic corridor, the average trip distance for these shoppers will increase.

Also, corridor choice depends on the shopper's knowledge of the stores and goods available in corridors. Shoppers need opportunities to learn about the offerings of alternative corridors, and they might have more opportunities to learn about corridors that are in areas with higher concentrations of similar ethic background, perhaps because of visits to friends or relatives who live near those corridors. However, the data collected for this project do not allow a more detailed examination of these questions, and more detailed data on goods shopped for would make a more advanced analysis of ethnic corridors possible.

13.0 SIMULATIONS

Simulations predict how shopper choices change when the options for the shoppers change.

The analysis of the shopper trip data from the shopper survey offers a unique way to measure the effectiveness of changes to corridors. The essence of the shopper survey is the choices that shoppers make about where to shop. Once the econometric analyses have been prepared, it is possible to use the standard econometric framework to predict how shopper choices will change when the options shoppers face change.[89] For example, if a new big box store opens in a corridor, how will shopping trips to that corridor and other corridors (including distant corridors) change?

The simulations can address many types of questions including the addition of stores to an existing corridor, the addition of a new corridor or the closure of an existing corridor, changes in the design of a corridor, changes in transit access, and the impact of interventions. The simulations provide an alternative way to look at corridor performance, in addition to the insight offered by data tabulations and by the parameters from econometric analysis, which have been discussed in other chapters.

[89] Mechanically, a standard feature of the statistical software packages used to estimate the econometric models in the first place is the ability to make predictions based on the parameter estimates.

13.1 Overview of Simulations

Because the simulations are an extension of the econometrics, it will be useful to describe the difference between the estimation and the simulations, and how they relate to each other. The simulations, and the econometric model that underlies the simulations, depend on consumer choice, as measured through the shopper survey.

Utility Based Choice Model

The shopper choice model identifies the best corridor for a trip based on corridor characteristics.

For any shopping trip, a consumer has a large number of options about where to shop, including at a close-by neighborhood center, at a regional center, or even in a store that is not in a corridor. Each corridor offers the shopper a different level of "utility," and the shopper selects the option that provides the greatest utility. The utility of a corridor for a shopper is based on the characteristics of the corridor, such as the size of the corridor, number and type of stores, accessibility to cars and transit, neighborhood characteristics, as well as the distance from the starting point of the shopper. The econometrics are used to determine how much each characteristic matters. For example, the econometric parameters tell us that, all else being equal, consumers prefer corridors that are closer to their starting point to corridors that are farther away. Furthermore, they tell us how strongly they prefer closer corridors to more distant corridors. Similarly, they tell us that corridors with grocery stores offer higher utility, and are therefore more likely to be selected, than corridors without grocery stores.

The parameter estimates for the shopper choice model are presented in Chapter 13.3. These estimates can also be used in another way – to predict the change in shopper behavior if something changes in the universe of corridors.

From Model to Simulation

By changing corridor characteristics in the model we can see which shoppers change destination.

The econometric model estimates shoppers' underlying preferences, and these preferences do not depend on any particular set of corridors, so they can be applied to "hypothetical" corridors. To judge the effect of a change in corridors, we run two sets of predictions, one based on existing corridors, and one based on corridors as they look after the change is made, and then we compare the two sets of predictions.

The first step in the simulation is to predict trips based on the corridors as they are in the data used to estimate the model in the first place. A prediction means that for each trip in the data, the model identifies the corridor that the person making the trip will select. If there are 6,500

trips in the model, then the model makes 6,500 individual predictions. The predictions on the existing corridors form a baseline set of trips against which changes can be measured.[90]

The shopper choice model identifies the best corridor for a trip based on corridor characteristics.

A simulation is simply another set of predictions about where the people in the model will go. However, the difference is that these predictions are based on the data as they would look if a change to one or more corridors has been made. For example, if we want to model the effect of adding a big box store to a corridor that currently does not have one, we change the data for that corridor to indicate that there is a big box store. We then generate predictions on the modified data, and compare the resulting predictions with the baseline predictions from the real-world data.

Simulation Results

Similarities offer a variety of ways to measure impacts.

Comparing the baseline predictions to the simulation predictions offers the opportunity to investigate several things:

- Magnitude of the change. The comparison can show the change in trips to the affected corridor several ways. It can present the percent of gained trips that come from each corridor that loses trips (i.e., 10 percent come from corridor A, 30 percent from corridor B, etc), or it can show how much each corridor changes compared to its previous level (e.g., corridor A loses 20 percent of its trips, corridor B gains 30 percent over its existing trips).
- Location of impacted corridors. The people who change between the two scenarios were shopping in another corridor before the change caused them to shop at the new corridor. We can examine which corridor or corridors lose trips to the gaining corridors.
- Identity of shoppers - the model can show which shoppers are changing destinations, as well as summarizing demographic information about which shoppers change destinations.
- Origin of trips – the model also can show the origin points of shoppers who switch trip destinations.
- Comparison of changes. Different scenarios can be compared. For example, a big box in corridor A could cause ten trips in the model to switch corridors and a big box in corridor B could cause seventy trips to switch. This would signal that putting a big box in corridor B would have a greater impact.

[90] This means that there will be two sets of trip data, the trips we observe (i.e., the corridors that the people in the survey actually went to), and the trips that the model predicts. If the econometric model is well specified, then the predictions will, in the aggregate, broadly match the observed trips.

Types of Simulations

Simulations can model any attribute in the econometric data, either alone or in combination.

The simulation technique allows the investigator to evaluate the impact of anything that makes up the econometric data. The changes can occur one at a time (add a big box) or in combination (add a big box and a pharmacy to corridor A while adding a grocery to corridor B and increasing transit service in corridor C). The below list shows some of the types of simulations that can be prepared, either alone or in combination:

- Add a new big box, chain pharmacy or grocery store (or remove an existing store)
- Increase the number of stores in a corridor
- Increase the area of a corridor
- Add a new corridor or remove an existing corridor
- Change the amount of off-street parking in a corridor
- Add bus or trolley service or add rapid transit service
- Add an intervention, such as a security program or a BID

Limitations

The simulations are necessarily zero-sum, as there are a fixed number of trips in Philadelphia, and any increase in one corridor leads to a decrease in a trip to another Philadelphia destination (whether in a corridor or not). The fixed number of trips is a consequence of surveying only Philadelphia residents and allowing for only Philadelphia destinations. Thus when we improve a retail center, we cannot measure the increase in trips from non-city residents, nor measure the reduction in trips to non-city retailing centers. These issues can be addressed with further data collection. Also, the simulations have not considered the type of good purchased, and whether a corridor has a store that supplies that good type.

13.2 Sample Simulations

We have prepared several simulations to demonstrate the simulation model, as well as to illustrate the types of impacts than can be expected from different types of changes[91]. The simulations show how the number of predicted trips will change based on the changes made to the corridors. The model is based on 6,586 shopping trips.[92] Of course, there are many more trips in the city than the trips captured by the survey. We estimate that each trip in the survey represents several hundred trips per week.

Illustrative Simulation - This simulation demonstrates the effect of opening a grocery store on Main Street in Manayunk.[93]

Figure 13.1 shows the Main Street corridor, which is shaded blue, and also shows nearby corridors. In addition, the black arrows show the origin points of shopping trips to Main Street.[94] The model predicts eight shopping trips to Main Street prior to the opening of the grocery store, though the map shows only seven because two trips start from the same place. The eight shopping trips to Main Street Manayunk are approximately 0.1 percent of the trips in the model.

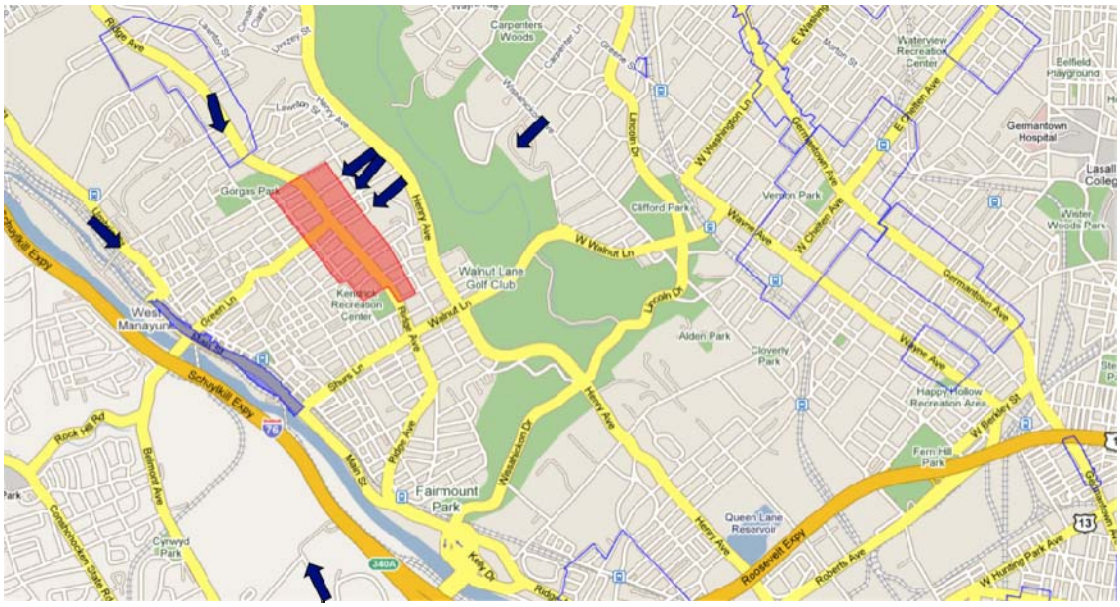
[91] This model used to generate the simulations was selected based on the spatial robustness of the estimations, rather than the usual measures of goodness-of-fit. Therefore, the model it's baseline predictions differ slightly from those generated elsewhere in the report.

[92] As discussion in Section 6.2, we conducted an extensive survey across the entire city.

[93] This is an illustrative simulation prepared for clarity of exposition.

[94] The trip at the bottom of the graphic is coming from a point off of the map.

Figure 13.1 – Main Street Bound Trip Origins Before the Addition of a Grocery



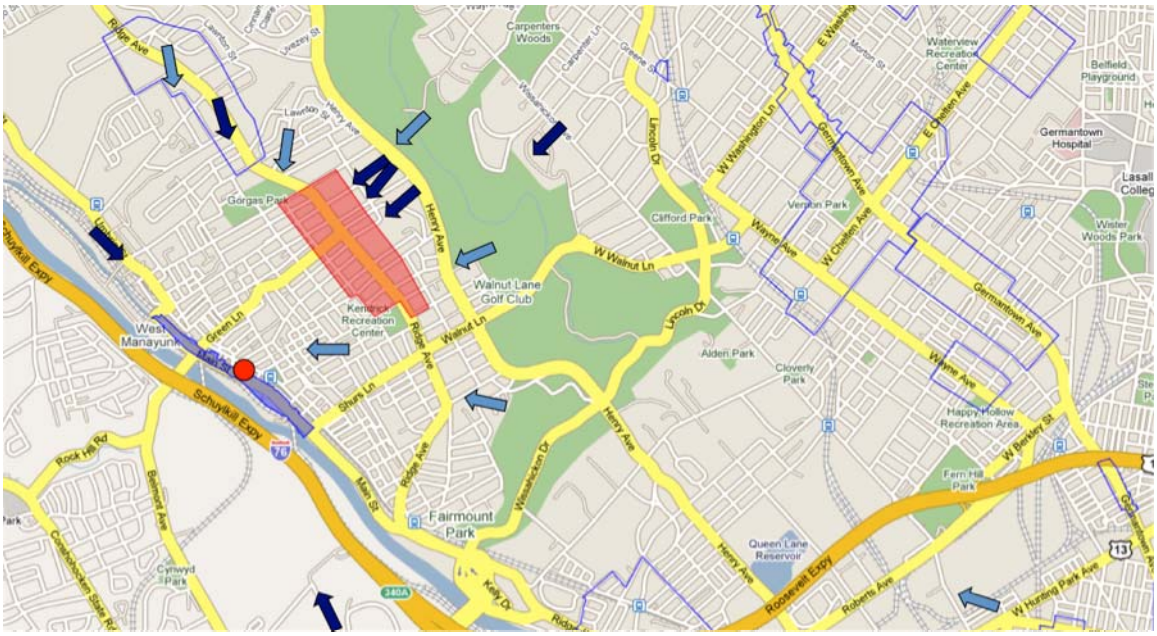
Source: Econsult Corporation (2008)

This simulation predicts that opening a grocery store in the corridor will cause an increase of seven trips to the corridor, or nearly double the number of trips currently made by City residents. Figure 13.2 shows the location of the new grocery store in the corridor, and it also shows the origin points of the trips that will switch to the Main Street corridor. These origins are shown as blue arrows. In this example, all of the shoppers who switch to Main Street were shopping at Roxborough.

To be more precise, these seven trips are trips for which the Roxborough corridor was a better option for the shoppers (it offered the shoppers higher utility) when the Main Street grocery was not open. Once the grocery opened, the utility of the Main Street corridor increased enough for these shoppers that it was greater than the utility of the Roxborough corridor. The opening of the grocery also increased the utility of the Main Street corridor to all other shoppers in Philadelphia, but it did not increase the utility of that corridor enough so that it became the best choice for the other shoppers.

When the Main Street grocery opened, the attractiveness of the Main Street corridor increased enough that Main Street became the best choice for some shoppers

Figure 13.2 – Main Street Bound Trip Origins After the Addition of a Grocery



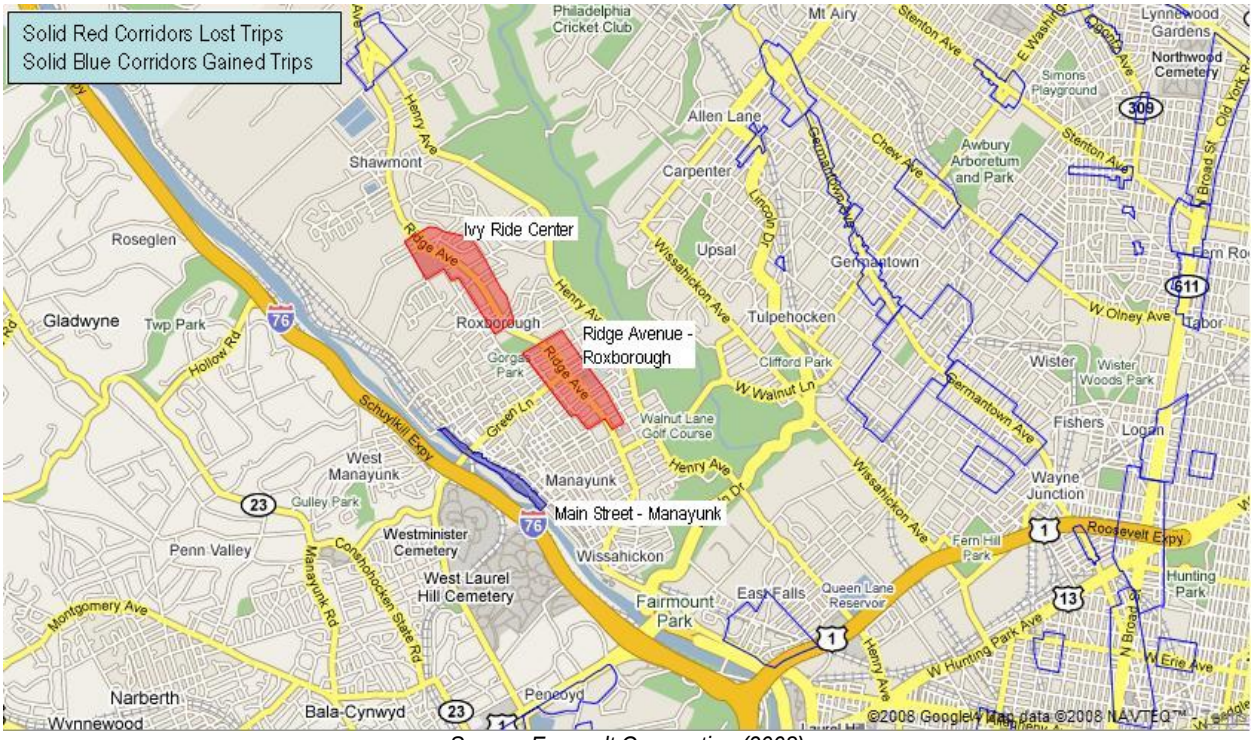
Source: Econsult Corporation (2008)

Figure 13.2 shows the corridors with an increase or decrease in trips, in this case the Main Street and the Roxborough corridors, with shaded shapes, and the corridors with no increase in decrease in trips, with outline shapes. Note that just because the model predicts no change in trips, it does not mean that there will actually be no change to that corridor whatsoever, just that any change is too slight to be captured by the model.

Simulation 1 – A Grocery Store Opens on Main Street, Manayunk

Simulation 1 is based on opening a grocery in Main Street Manayunk, using the shopper choice model. Figure 13.3 shows the corridors with an increase or decrease in trips.

Figure 13.3 – Corridors with Changes in Shopping Trips



Source: Econsult Corporation (2008)

Furthermore, Figure 13.4 shows the numerical increase or decrease in trips for each corridor that experiences a change in trips, as well as the percentage change implied by the change in trips. As the number of trips is just the trips in the model, the percentage change in trips is an easier to understand indicator of how each corridor will be affected. For example, the increase of ten trips for Main Street is an increase of approximately 200 percent, whereas the loss of nine trips from Roxborough is a decrease of approximately 12 percent.

Figure 13.4 – Simulation 1 – Trips to Affected Corridors

Corridor	*Baseline Trips*	*Change in Trips*	*Percentage Change in Trips*
Main Street - Manayunk	5	+10	+200%
Ivy Ridge Center	47	-1	-2%
Ridge Avenue - Roxborough	78	-9	-12%

Source: Econsult Corporation (2008)

Simulation 2 – A Big-box Store Opens in Roxborough

This simulation demonstrates the effect of opening a big-box store in the Roxborough corridor.

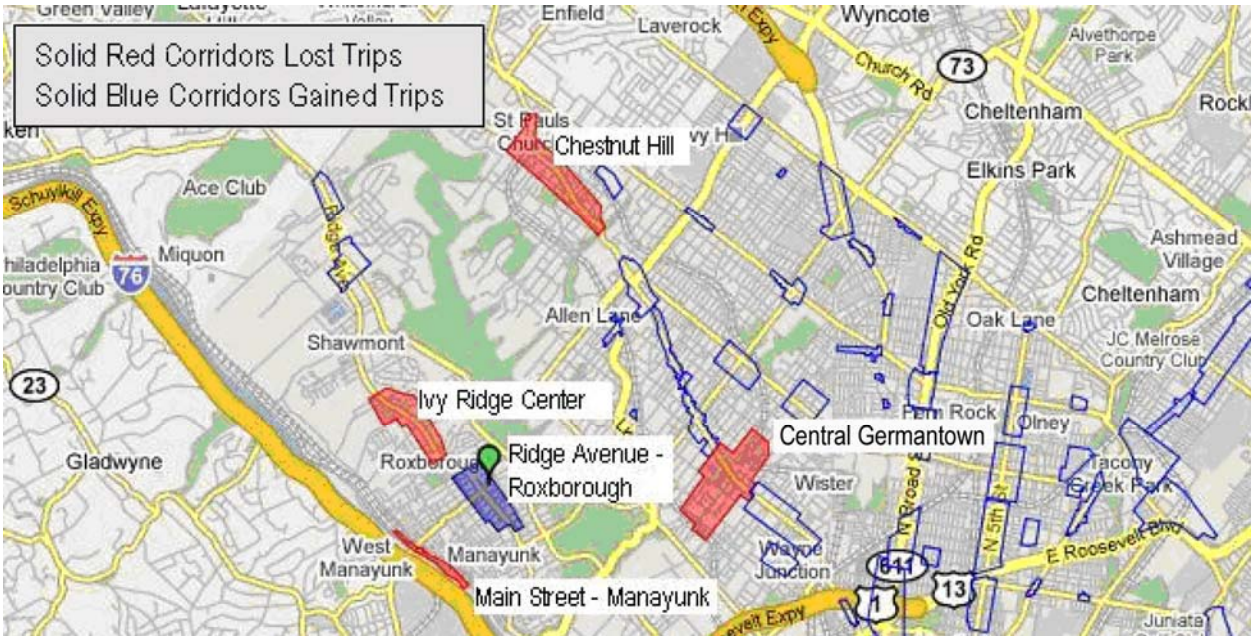
Figure 13.5 shows the Roxborough corridor and the other corridors affected by the big-box store. There are 78 shopping trips to Roxborough prior to the opening of the big box, or approximately 1.2 percent of the trips in the model. Figure 13.6 show that there is an increase of 11 shoppers to the corridor once the big box store opens, which reflects the increased attractiveness of the corridor.

The shoppers come primarily from Main Street Manayunk and Chestnut Hill, which do not have big box stores. Prior to the opening of the big box, Roxborough did not have a big box, and the Main Street and Chestnut Hill corridors were broadly similar to Roxborough in terms of shopping attractions. In addition, the Ivy Ridge and Central Germantown corridors lose shoppers to Roxborough, though not as many as Main Street and Chestnut Hill.

People who we preferred Main Street or Ches Hill found that Roxborough is better for them because of the additional ame

Also, note that Chestnut Hill loses more shoppers to Roxborough than Central Germantown, even though Central Germantown has more shoppers to begin with. This is evidence that Chestnut Hill is a better substitute for Roxborough than Central Germantown. Finally, the simulation does not capture the increase in trips that would come from Montgomery County (Bala Cynwyd, Gladwyne, Conshohocken, Plymouth Meeting, etc).

Figure 13.5 – Scenario 2 - Corridors with Changes in Shopping Trips



Source: Econsult Corporation (2008)

Figure 13.6 – Simulation 2 – Trips to affected corridors

Corridor	*Baseline Trips*	*Change in Trips*	*Percentage Change in Trips*
Ridge Avenue - Roxborough	78	+11	+14%
Central Germantown	300	-2	-1%
Chestnut Hill	86	-4	-5%
Ivy Ridge Center	47	-1	-2%
Main Street - Manayunk	5	-4	-80%

Econsult Corporation (2008)

There are some very close by corridors that do not gain trips, such as Frankford Ave- Holmesburg and Roosevelt/ Tyson Cottman. These corridors are not good substitutes for the shopping trips that switch away from the corridor losing the grocery.

Simulation 3 – Grocery Store Closes in Lower Mayfair

This simulation demonstrates the effect of the closing of the grocery stores in the Frankford Avenue – Lower Mayfair corridor.

Figure 13.7 shows the Frankford Avenue – Lower Mayfair corridor and the other corridors affected by the closing store. There are 259 shopping trips to Frankford Avenue – Lower Mayfair prior to the closing, or slightly fewer than three percent of the trips in the model. Figure 13.8 show that there is a decrease of 95 shoppers to the corridor once the grocery store closes, which reflects the decreased attractiveness of the corridor.

There are some very close corridors that do not gain trips, such as Frankford Ave- Holmesburg and Roosevelt/Tyson-Cottman. Although they are physically close, they do not have a chain grocery, and thus these corridors are not good substitutes for the shopping trips that switch away from the corridor losing the grocery. The shoppers primarily go to the Frankford Avenue – Mayfair and Castor & Cottman corridors, as well as to the Roosevelt Plaza, and Aramingo Avenue corridors.

Figure 13.7 – Simulation 3 - Corridors with Changes in Shopping Trips



Source: Econsult Corporation (2008)

Figure 13.8 – Simulation 3 – Trips to Affected Corridors

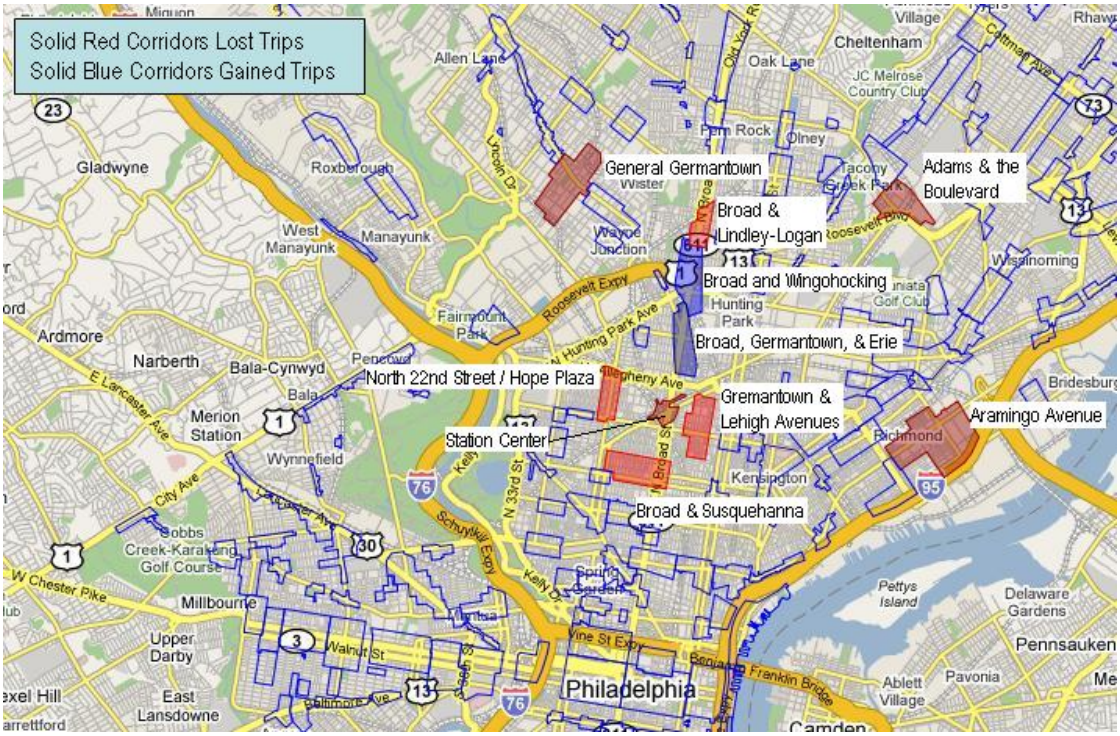
Corridor	*Original Trips*	*Change in Trips*	*Percentage Change in Trips*
Frankford Avenue - Lower Mayfair	259	-95	-36%
Aramingo Ave	514	+5	+1%
Castor & Cottman	322	+22	+7%
Frankford Avenue - Mayfair	28	+64	+229%
Roosevelt Plaza	38	+4	+10%

Source: Econsult Corporation (2008)

Simulation 4 – A Grocery Store Opens at Broad, Erie, & Germantown

This simulation demonstrates the effect of opening a grocery store in the Broad, Germantown & Erie corridor. Figure 13.9 shows the Broad, Erie, & Germantown corridor and the other corridors affected by the new grocery store. There are 69 shopping trips to the Broad, Erie, & Germantown corridor prior to the opening, or approximately one percent of the trips in the model. Figure 13.1 shows that there is a increase of 74 shoppers to the corridor once the grocery store opens, which reflects the increased attractiveness of the corridor.

Figure 13.9 – Simulation 4 - Corridors with Changes in Shopping Trips



Source: Econsult Corporation (2008)

Figure 13.10 – Simulation 4 – Trips to Affected Corridors

Corridor	Baseline Trips	Change in Trips	Percentage Change in Trips
Broad, Germantown & Erie	69	+74	+107.2%
Broad & Wingohocking	100	+7	+7%
Hope Plaza	67	-1	-1.5%
Station Center	48	-15	-31.3%
Germantown & Lehigh Avenue	28	-7	-25%
Aramingo Avenue	417	-14	-3.4%
Central Germantown	300	+10	+3.3%
Adams and the Boulevard	218	-14	-6.4%
Broad & Susquehanna	16	-2	-12.5%
Broad and Lindley - Logan	6	-2	-33.3%

Econsult Corporation (2008)

This simulation can be compared to Simulation 1, which also simulates to opening of a grocery store. The comparison will show which corridor benefits most from the grocery (see Figure 13.11).

Figure 13.11 – Comparing the Impact of a New Grocery Store on Different Corridors

Corridor with Grocery Store	Baseline Trips	Increase in Trips	Percentage Change
Main Street - Manayunk	5	10	200%
Broad, Germantown & Erie	69	74	107%

Source: Econsult Corporation (2008)

This shows that while the percentage increase in shoppers is greater in Main Street Manayunk than in Broad, Erie & Germantown, the absolute number of additional shoppers to the Broad, Erie & Germantown corridor is much greater.

13.3 Corridors with Strong Potential

It may be of particular interest to identify "high-potential" corridors, those that are underperforming relative to potential and which, with assistance, could do better.

We can use the shopping choice and retail sales models to identify corridors that may benefit from attention by looking at corridors that receive fewer trips in the survey than the model predicts they should have received. In order to identify these corridors, we use the ratio of predicted trips to actual trips and the ratio of predicted sales to actual sales.

For every shopping trip, the simulation predicts which corridor that shopper will choose. The ratio of predicted trips to actual trips indicates how the predicted number of trips to a corridor compares to the actual number of trips according to the survey. A ratio of 1.0 means that the corridor actually receives as many trips as the model predicts it should. A ratio greater than 1.0 means that the corridor receives fewer trips than it "should" receive. A ratio of 2.0, for example, means the model indicates the corridor should receive twice the number of trips that it actually did. An alternative way to look at a ratio of 2.0 is that it indicates that the corridor could double the number of trips.

The ratio of predicted retail sales to actual retail sales is calculated in the same way. If a corridor has a ratio of 2.0 then the model indicates sales in the corridor should be twice as large as they actually are.

Corridors with high ratios in terms of both sales and shopping trips have a large potential market of individuals that are not currently shopping there even though our model predicts they would. This may be because there is something they value that our model does not measure, or does not measure well, such as a specialized store or a corridor targeted towards a particular ethnicity or demographic. Another possibility is that shoppers' decision to not shop there is based on a past perception of the corridor which is no longer accurate. If they were aware of the current characteristics of the corridor, they may choose to shop there as our model predicts. In both cases, although more so in the latter than the former, these are corridors that are likely to benefit from an intervention designed to increase shopping trips and sales. The below figure lists the corridors which have a predicted to actual ratio of greater than 1.2 for both sales and shopping trips (see Figure 13.12).

Figure 13.12 – Corridors with Fewer Trips and Fewer Sales than Predicted

Corridor	Actual Trips	Predicted Trips	Predicted / Actual Trips	Actual Sales ($)	Predicted Sales ($)	Predicted / Actual Sales ($)
Penrose Plaza	46	101	2.2	21	29	1.4
6500-6800 Haverford Ave.	64	150	2.3	32	39	1.2
52nd and Haverford	3	5	1.7	1	2	2.9
40th and Lancaster	19	48	2.5	21	28	1.3
Ridge & Cecil B Moore	7	13	1.9	3	5	1.6
Ridge Avenue - Roxborough	39	65	1.7	45	57	1.3
Adams and the Boulevard	96	151	1.6	17	21	1.2
Lawndale	15	19	1.3	20	29	1.4
Castor and Cottman	248	393	1.6	11	46	4.0
Franklin Mills	73	139	1.9	159	213	1.3
Leo Mall/Lumar Center & Vic	7	22	3.1	17	25	1.4

Source: Econsult Corporation (2008)

We can use the shopping choice model in a more detailed way to identify other corridors that may benefit from interventions. In addition to using the predicted to actual ratio discussed above, we can examine how often corridors were “almost chosen”.

For every shopping trip the shopper choice model calculates the probability that the shopper will go to each corridor. The corridor with the highest probability of being chosen is the one the model predicts the shopper will go to. The corridor with the second highest probability is considered a “second best” option, because it is the next likeliest corridor to be chosen. An “almost chosen” trip is defined as a second best corridor which had a probability of being chosen that was at least 75% as large as the probability of the chosen corridor. For example, consider a shopper who chose to go to Market East and whose second best choice was Market West. If the shopper had a 50% chance of choosing Market East and a 40% chance of choosing Market West, then Market West is considered an “almost chosen” corridor because the second best probability (40%) is at least 75% as large as the chosen probability (50%). The number of times a corridor is “almost chosen” is a good indicator of a corridor with strong potential because it shows there are a significant number of shoppers who might switch to that corridor as a result of a relatively small change, such as an intervention. In order to control for the base level of shopping trips, we divide the number of “almost chosen” trips by the predicted number of trips, giving us the ratio of almost chosen trips to predicted trips.

Corridors that are both over predicted and have a large ratio of almost chosen trips to predicted trips have a strong potential for two reasons: because they should be getting more trips, and because our model indicates there are many shoppers who almost went to the

corridor, on top of the shoppers who were predicted to go there. Corridors with high ratios according to these measure are the most likely to be receiving fewer shopping trips than they could be, and are the corridors most likely to benefit from an intervention designed to increase shopping trips.

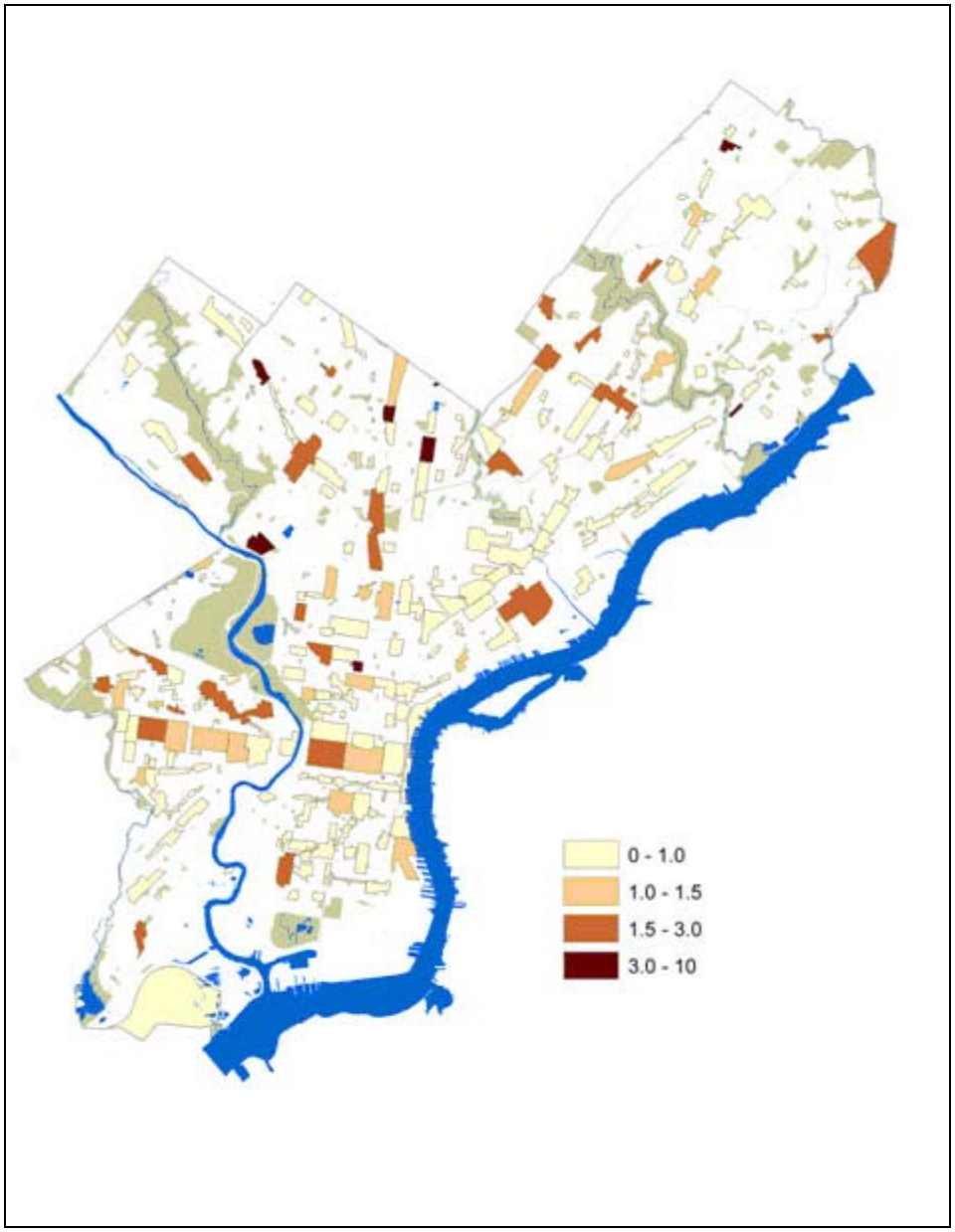
Figure 13.13 lists the top 20 corridors in terms of almost chosen to predicted ratio that also had at least a 1.0 ratio of predicted to actual trips and Figure 13.14 shows which corridors have a high ratio of predicted trips to actual trips.

Figure 13.13 – Corridors Most Frequently the Second Choice for Shopping Trips

Corridor	*Actual Trips*	*Predicted Trips*	*Almost Chosen*	*Almost Chosen to Predicted Ratio*	*Predicted to Chosen Ratio*
Progress Haddington Plaza	16	18	15	0.83	1.13
Lancaster Ave, 53rd to 61st	11	26	16	0.62	2.36
Cheltenham & Ogontz	15	15	8	0.53	1.00
Broad and Wingohocking	49	80	39	0.49	1.63
Fox Chase	8	13	6	0.46	1.63
Ridge & Cecil B Moore	7	13	6	0.46	1.86
Market East - Center City	255	256	116	0.45	1.00
58th and Baltimore	16	22	10	0.45	1.38
Castor and Cottman	248	387	160	0.41	1.56
Castor and Magee	25	25	10	0.40	1.00
42nd-49th/Market-Locust	50	61	20	0.33	1.22
Grant and the Boulevard (includes Whitman site)	129	131	43	0.33	1.02
Germantown & Lehigh Aves	26	29	9	0.31	1.12
56th and Market	61	107	32	0.30	1.75
Five Points	59	93	27	0.29	1.58
Adams and the Boulevard	96	151	44	0.29	1.57
Broad and Stenton/Godfrey	6	60	17	0.28	10.00
Snyder Plaza & Vicinity (incl. Columbus Commons)	183	256	69	0.27	1.40
Strawberry Square	23	55	15	0.27	2.39
24th and Fairmount	25	34	9	0.26	1.36

Source: Econsult Corporation (2008)

Figure 13.14 - Predicted Trips to Actual



Source: Econsult Corporation (2008)

Also, another interesting measure that could be used to assess how close a corridor is to being the best choice is to look at the utility of other corridors for *consumers from a given neighborhood.* This is one potential avenue for future work in identifying corridors with strong potential.

14.0 RECOMMENDATIONS

The results from the work have a variety of policy relevant implications.

This chapter discusses policy relevant recommendations that arise out of the work presented in this report, policy-relevant.

The many figures, maps, and econometric analyses present a wide variety of insight into questions. Individually these insights provide minor nudges toward a policy direction, and not all nudges push the same way. However, taken in the aggregate, the study provides broad guidance in several areas. Of course, many drivers of corridor performance are things which policy makers do not control, and some are factors which nobody controls. Our recommendations focus on area that policymakers control directly, or are able to influence whether through cooperation with market participants or through setting municipal policy.

14.1 Corridor and Neighborhood Characteristics

Leadership

Good leadership can address many issues in corridors, such as coordinating maintenance of the public realm, reigning in problem stores, and addressing parking issues or other things with corridor-wide implications. This underlies the importance of coordinated, corridor-wide efforts rather than a single site perspective.

The results indicate that the City should encourage a corridor to appoint a leader, and to work with existing leaders to address issues as they arise. The importance of leadership reappears when considering the impact of BIDs and NIDs on corridors.

Store Density

In mixed corridors, store density, or the number of stores per acre of corridor, is a contributor to corridor success. As discussed above, high land values encourage density, but density also has value for pedestrians as it places more stores within easy reach of one another. Density thus allows shoppers to do more in a trip, and contributes to synergies.

The policy implications are clear – if there are corridors where the stores are dispersed, the stores should be encouraged to relocate so that they cluster. Furthermore, zoning for commercial corridors, particularly mixed corridors, should not discourage store density.

Store Mix

Store mix feeds synergy across stores

The store mix in a corridor is strongly associated with good corridor performance. Store mix is difficult to quantify objectively, in the sense that what constitutes a "good" mix is a bit subjective, but it generally has to do with creating synergies between proximate stores. Each store has its own drawing power, but to the extent that store can benefit from the drawing power of other stores, the corridor will benefit compared to what it would experience without this synergy. Mall owners and shopping center owners naturally strive for good store mix. Since they want shoppers to circulate between stores and stay as long as possible. However, many corridors, especially older corridors, have diffuse ownership and no coordinated effort to have an appropriate collection of stores.

The results suggest that the City should strive to work with corridor representatives or individual landlords to educate them about the benefits of good store mix, and perhaps suggest options for types of stores that would fit well within a corridor.

14.2 Corridor Competition

Big box stores

According to the results, big boxes primarily influence the number of shopping trips to a corridor, but do not have a significant relationship with retail sales. Furthermore, the relationship between big box stores and trips to a corridor is the same whether the big box is in the corridor, or is simply near the corridor. On the other hand, a big box in a corridor is associated with lower real estate values which could be due to the need for inexpensive goods. Further, as discussed above, we do not see evidence that big box stores have been harmful to corridors in the period covered by the study.

The implication is that, from a commercial, perspective, big box stores should be accommodated. Further, the evidence suggests that there is no need to encourage these stores to locate directly in a corridor for the corridor to benefit, as long as the big box is close to the corridor.

Chain pharmacies

Chain pharmacies, which are as much a general store as a filler of prescriptions, are also associated with improved performance, especially in mixed corridors. Furthermore, they do not have harmful associations with real estate values.

These findings suggest that chain pharmacies be accommodated, preferably within corridors. Further, for mixed corridors especially, the design of the pharmacies should be encouraged to maximize synergies with stores nearby.

Grocery stores

Groceries are commercial drivers for corridors

Groceries are commercial drivers for corridors, which is sensible given the large number of shopping trips they generate. However, groceries that are near a corridor but not in the corridor do not contribute to the corridors themselves. We have not established whether groceries generate synergies, so it is possible that the aggregate performance of a corridor with a nearby grocery is equal to a corridor with an integrated grocery.

If the goal of City policy is to support corridors, then the implication is that groceries should be encouraged to locate within corridors. There are sound policy reasons for wanting retail

clustered, apart from synergistic reasons. However, there is no evidence that retail overall would suffer if groceries locate outside corridors.

Also, because of cost efficiencies, food in larger groceries tends to be less expensive than food purchased from smaller scale markets. Since food makes up a relatively large portion of the budget of a lower income family, a decrease in the cost of food has a wealth enhancing effect on these customers. The wealth enhancing effect alone is a reason to encourage grocery stores, particularly in lower income areas.

Other Corridors

As discussed above, the fact that nearby 'mixed' corridors do not add to neighboring 'mixed' use corridors, coupled with the fact that store density matters, suggests that there could be some gains from consolidation of stores within a corridor. However, as a counterpoint, distance to a corridor is a major influence on the number of shopping trips. This suggests that eliminating corridors altogether is not helpful, unless there are other corridors very close by.

14.3 Interventions

Many isolated interventions are not measurably effective, especially from a shopper trip or retail perspective. In general, they are not sufficiently powerful to overcome larger market forces. However, the interventions for which there is evidence of effectiveness point to some broad policy guidance.

Management

There are several types of management-oriented interventions, but the one that most clearly shows an impact is the presence of a BID or NID. Since BIDs and NIDs tend to be more organized than the typical CDC, and they are focused on improving retail performance, it is sensible that this intervention appears as the significant management intervention. One caveat is that we did not investigate the size or scope of a BID/NID, so it is possible that a BID/NID can be too limited to be effective.

The recommendation is that the City support BIDs / NIDs where it can. Other initiatives that support management of the corridors, especially when a BID / NID is not practicable, may also be supported.

Physical interventions

The physical interventions that seem to work best, cleaning and maintaining vacant lots and painting murals, are both programs that remove an eyesore and replace it with a symbol of care. In both cases, the difference is very visible to the naked eye. Other interventions, such as façade and streetscape improvements, are not significant based on the data we received, but this lack of impact may be due to when the interventions were undertaken relative to the study period, and not to an underlying lack of effectiveness.

One clear recommendation is that appearance matters, and the change in appearance that matters the most is the transition from a place with highly visible signs of blight to a place that looks somewhat cared for. It is also worth pointing out that both the PHS Land Stabilization program and the Mural Arts Programs are fairly inexpensive

Subsidies

Recommendation is not to rely heavily on subsidies

In this context, a subsidy is a payment to a company, or relief from a financial burden, that does not have a physical manifestation, such as an improved facade. Many of the subsidy variables, such as CRA loans, enterprise and empowerment zones, and others, are more geared to reducing costs, not increasing revenues. Therefore, subsidies may be valuable from a profit perspective, but are not likely to draw additional shoppers. The exception to this would be in instances when subsidies keep a series of stores from going bankrupt.

Since there is little statistical evidence that subsidies are strongly associated with performance, and because subsidies can be expensive, our recommendation is not to rely heavily on subsidies to motivate corridor improvement.

14.4 Support for Transit Oriented Development

The conclusion from Chapter 12.5 indicates that Philadelphia is not maximizing its return on its transit system. This suggests that a policy direction would be to encourage corridors with good transit connectivity, particularly rapid transit stops, to develop with greater connectivity to the transit assets. A more specific implication is that the city should remove regulatory barriers that limit or otherwise make difficult the development of transit-oriented development. For example, zoning for moderate to high density, pedestrian oriented mixed use development near major transit stops will increase the usability of the transit system, and at the same time support mixed corridors.

A policy direction would be to encourage corridors with good transit connectivity, particularly rapid transit stops, to develop with greater connectivity to the transit assets

15.0 FUTURE DIRECTIONS

There are a number of additional explorations that should be made, both from the standpoint of what our general analytical model can yield in terms of interesting findings, as well as the policy usefulness of those findings. This additional work can be neatly sorted into four major categories:

- 1a. Refreshment of existing corridor attributes data
- 1b. Refreshment of existing corridor outcomes data
- 2. Additional data collection efforts
- 3. Additional analytical explorations
- 4. Other consultative deliverables

15.1 Refreshment of Existing Corridor Attributes Data

Over time, updated versions of the corridor attributes data used in our analysis will become available. It makes sense to collect and process this updated data, since the display of the data itself is useful, as are the relationships that we derive from it through our econometric work (see Figure 15.1). These benefits offset the cost associated with refreshing these existing data sets, especially since a framework has already been created to receive, process, and portray it, thus reducing if not eliminating upfront expenditures.

Figure 15.1 – Corridor Attributes Data That Can Be Refreshed

Chapter	*Data*	*Source*	*Next Steps*
2	Corridor characteristics	PCPC	Obtain from next Philadelphia Shops Update report
2	Corridor perceptions	Corridor experts	Conduct another focus group and survey
3	Geography (CBD, City limits, rivers, parks)	ArcGIS	Verify if there have been any changes
3	Anchor institutions (universities, hospitals, health centers, tourist attractions)	Various	Verify if there have been any changes
3	Banks	FFIC	Use most recent year's HMDA data
3	Arts organizations	GPCA	Use most recent year's membership roll
3	Transit access	SEPTA, PATCO	Verify if there have been any changes
3	Crime	CML, PPD	Use most recent year's data

Chapter	*Data*	*Source*	*Next Steps*
			set
3	Demographic characteristics	US Census Bureau	Obtain from next Census release
3	Home lending characteristics	FFIC	Use most recent year's HMDA data
3	Foreclosures	TRF	Obtain from TRF
4	Corridor competition (large scale chain retailers, chain drug stores, chain grocery stores)	InfoUSA	Use most recent year's InfoUSA data + verify with Internet and Yellow Pages searches
4	Corridor competition (other corridors)	PCPC	Verify if there have been any changes
5	Corridor intervention (City)	Various City agencies	Obtain updated investment amounts and locations from various City agencies
5	Corridor intervention (non-City)	Various non-City agencies	Obtain updated investment amounts and locations from various City agencies

Source: Econsult Corporation (2008)

Even more important than periodic refreshments of corridor attributes data are the refreshments of corridor outcomes data. Such refreshments provide a sense of changes in corridor performance over time, so that one can determine which corridors are maintaining versus improving or worsening. Updating corridor outcomes data necessarily takes more effort, since it is not simply collecting and portraying data but producing it from other data sources, and in the case of consumer choice characteristics, expending time and money to administer a survey to create the initial data sources (see Figure 15.2).

Figure 15.2 – Corridor Outcomes Data That Can Be Refreshed

Ch	*Data*	*Source*	*Next Steps*
6	Consumer choice characteristics	the reed group	Commission another household survey of shopping trips
7	Retail sales characteristics	Revenue Department	Use most recent year's tax data
8	Real estate characteristics	BRT, Hallwatch	Use most recent year's arms-length house transactions

The consumer choice characteristics and retail sales characteristics refreshments warrant additional discussion. In both cases, there were a number of lessons learned that can improve the quality and quantity of data, and that can allow for further exploration. The first set of lessons is described here, and the second set later on in this chapter.

The data source for the consumer choice characteristics was a large household survey conducted by the reed group in 2007. Subsequent dialogue with the reed group has yielded a number of improvements for future work, which will likely lead to better and more data, and an easier time working with it. For example, because location is so important to this data set, we can use various survey techniques to ensure that a respondent provides a legitimate and understandable store location, prior to the conclusion of the survey. Internet surveying is also being contemplated, as a way to broaden the universe of respondents as well as drive down costs.

As for the retail sales characteristics, we have learned much about how to best use Revenue Department data. Because this data is available at the store level, it provides a vivid sense of corridor and citywide retail performance. However, the validity of the data is compromised by several factors, from non-reporting and under-reporting to erroneous and irrelevant inputs. One suggested amendment to our data processing methodology is to exclude car dealers, hotels, and doctors' offices which fall within the broader categorization of commercial establishments but which are really not part of what we are analyzing, and whose large sales numbers then tend to skew our results unnecessarily.

15.2 Additional Data Collection Efforts

As alluded to above, both the consumer choice and retail sales data can be refreshed as is, yielding a useful update of these two corridor performance indicators. Also, additional data from these two data sets can be gathered and included in our analysis. Three important recommended additions to future household surveys are:

- Including suburban shoppers and suburban locations. Our household survey was exclusively interested in Philadelphia residents and Philadelphia retail locations, but shoppers certainly cross jurisdictions when making retail purchases; including such shopping trips would allow our model to speak directly to that reality.

- Focusing in on key purchase types of interest. Capturing a shopping trip carries with it a lot of useful information: the demographics of the shopper, the destination he or she chose for that particular good type, the distance traveled, and the mode of transportation employed. The survey in its current form includes seven good types, which are modeled after the basket of goods used in determining the Consumer Price Index; this is so that together the shopping trips represent all of retail consumption. In addition, the survey could ask about specific types of purchases. Notably, policymakers are interested in if and where residents in different neighborhoods obtain fresh food; asking about that particular good type would therefore provide guidance in understanding shopping patterns specifically related to that good type.

- Targeting a specific population of shoppers. In addition to citywide samples, which are intended to serve as a proxy for all shoppers, we could drill down on particular universes of shoppers, which may be of particular interest to various policymakers. Such populations could be approached in innovative ways, since we do not have to worry about over-sampling a population since that is exactly what we are trying to do. Thus, SEPTA riders could be surveyed while riding on SEPTA, or Philly Car Share users while using Philly Car Share, or university students while on university campuses; and non-English speakers could be included more thoroughly by buying into a phone or Internet survey that specifically targets speakers of various non-English languages.

Retail sales data can similarly provide more usefulness than it currently does. For example, at the store level, we know NAICS codes, and therefore can further differentiate between industries and good types. Furthermore, the Revenue Department may want to consider coordinating their data files with those of Licenses & Inspections, to the extent that characteristics such as number of years in business and information on physical space are relevant to an analysis of retail patterns.

The Revenue Department may also consider minor but helpful modifications to its own data collection methods. One small but impactful change would be to ask filers to add their business start month if their return that year represents a partial year because the business started in that year; this would enable data users to adjust that return's figures for the fraction of the year in which the business was in existence, rather than not knowing if a partial or full year is represented. Our experience working with Revenue Department data can yield other useful insight on how to best use existing Revenue Department data as well as what changes might need to be made to the initial data collection by the Revenue Department.

In addition, while real estate data and most corridors attribute data was of decent quality and completeness, some corridor attributes data was not. For example, parking data, as obtained from PCPC in its 2002 Philadelphia Shops Update report, was incomplete (because not all 265 corridors were surveyed) and erroneous (some very large corridors were reported as having zero parking). Also and importantly, InfoUSA data was found to contain some noticeable deviations, necessitating a verification effort that would need to continue into the future in terms of determining the existence, start year, and location of various chain stores.

There are other, completely new data sets that were not included in this round of analysis that may be worth considering in future rounds. For example, historic preservation data and business data can be obtained from various City agencies, and can help specify the characteristics of a particular corridor, thus allowing for further econometric exploration as to what makes corridors succeed. Other, important qualitative indicators, such as the cleanliness and safety of a corridor or the caliber of a corridor's leadership, could be incorporated into future inventories by PCPC and thus help fill out the attributes of each corridor.

15.3 Additional Analytical Explorations

In addition to refreshing the existing data and repeating the existing analysis, there are a number of additional analytical explorations that can be undertaken under the same general econometric approaches employed in our study. These add to the understanding of the system of corridors and the ways they respond to various changes in their environments.

Corridor inventory

We could work with PCPC to update its list of corridors and its characterization of each of them. For example, our work to date has identified very low-activity corridors, adjoining corridors that really behave like one unified corridor, and new clusters of retail activity that may merit corridor status. Also, our understanding of shopping patterns and corridor performance can inform some of the subjective designations in the Philadelphia Shops Update report, such as store mix, corridor type and character, and condition.

Intra-corridor considerations

Again, because we know exactly where shopping trips end and what stores are grossing in retail sales, we can statistically analyze the effect of various densities of corridors, a particularly relevant relationship for policymakers who are wondering what to do about corridors that have grown or shrunk by a lot in recent years. We can also determine whether different layouts and orientations – say, to transit stops, parks, or parking – make a difference in terms of corridor performance.

Intra-corridor and inter-corridor synergies

Because we know exactly where shopping trips end and what stores are grossing in retail sales, we can statistically explore the extent to which intra-corridor and inter-corridor synergies exist. In other words, is an individual store's performance influenced by the performance of other stores within the same corridor, or even by stores in an adjoining corridor? A lot of this will depend on whether a store's offerings directly compete with or complement those of other nearby stores, but broadly speaking, there may be a sense in which proximity leads existing shoppers to extend their shopping by visiting other nearby stores, and attracts additional shoppers who want to be able to visit multiple stores in one outing.

The effect of chain stores on existing stores

An important subset of this intra-corridor and inter-corridor synergy exploration is the effect of chain stores on existing stores. Again, the question is whether the chain store leads to additional shopping at nearby stores, or whether the chain stores take shopping trips away from those nearby stores. The literature suggests that the direction and magnitude of these impacts depends on both the proximity of the stores and the extent to which offerings are similar or complementary. Our data should yield some specific insight on this particular inquiry; we can event distinguish between chain stores opening within a corridor and those opening just outside of a corridor but close enough to have a potential positive or negative effect on stores within that corridor.

Modeling actual shopping trip routes

Distance has proven to be hugely important in determining a shopper's choice of destination. In our current model, this is defined as the straight-line distance between the shopper's origin and his or her chosen destination. However, shoppers almost never can travel that distance in a straight line; even pedestrians have to use streets, and transit users and auto drivers are similarly bound by fixed paths. It is computationally possible, and may be strategically recommended, to determine the role of distance in shopper choice by modeling actual shopping trip routes, and thus estimating the time it takes to travel from origin to destination. This can even be extended to investigate the impact of traffic improvements on the distribution of shopping trips.

Other Modeling enhancements

In addition, there are other model enhancements that an expanded data set would allow. For example, the shopper choice model could be respecified to account for more detailed information on purchases, such as the specific type of good, and the corridors that are able to supply that good. Further, the model could be refined so that is it considers what transportation mode is used for the shopping trip, in addition to the destination corridor.

Ethnic corridors or specialty corridors

Our preliminary analysis has not focused effort onto ethnic corridors or specialty corridors. Ethnic corridors such as Baltimore Avenue and 6th & Washington merit additional attention;

they can become vibrant draws both regionally for people within those ethnicities as well as locally and regionally for people outside of those ethnicities, and more needs to be understood about their performance and their fit within the larger system of corridors.

Similarly, some corridors, such as “Jeweler’s Row”, “Antique Row”, and “South Street” have a region-wide reputation for offering specialized goods or services. However, in the current framework, they are treated symmetrically with other corridors. Further investigation could yield information about how specialized these centers are, and what shopping trips are drawn because of their specialization.

Combinations of interventions

To date, we have explored the extent to which individual interventions do or do not make a difference in a corridor’s retail sales levels and the real estate values of neighboring properties over time. It is possible, however, that the effect of each individual intervention depends on the existence or non-existence of other interventions; in other words, that combinations of interventions can either unlock synergies or, alternatively, become duplicative in effectiveness.

Return on Investment

Our analysis has shown which types of interventions and which types of stores influence corridor performance. This analysis can be taken a step further, particularly with more detailed data, to calculate return on investment for the expenditures. The return can be looked at from a real estate value perspective and a retail sales perspective. For example, if an investment increases sales, then the amount of the investment can be compared to the increase in sales to develop an internal rate of return on the investment.

Corridor as a locational amenity or disamenity

Our preliminary analysis has yielded some but not a satisfying level of understanding concerning the extent to which corridors can be amenities or disamenities to their immediate neighborhoods. We can further explore these correlations econometrically, in both directions: do neighborhoods with rising property values lead to corridors that increase in retail sales, and do corridors that increase in retail sales lead to neighborhoods with rising property values.

Corridor typology

Our preliminary analysis has yielded some but not a satisfying level of understanding about a taxonomy of corridors. We now know better that different kinds of corridors are organized differently, attract different customer bases, and respond differently to nearby "events." However, more can be explored here, to the extent that these typologies can be more vividly drawn out so that policymakers can make investment and zoning decisions accordingly, and so that changes in a particular corridor's typology can be more accurately tracked over time.

15.4 Other Consultative Deliverables

The visual display of statistical data is an important task, as it engages policymakers and provides them with the ability to infer relationships, draw conclusions, and make decisions. Therefore, a considerable amount of effort has been put into not only collecting, processing, and analyzing data, but presenting it in ways that inform the reader.

This report provides snapshots of these visual displays, but as mentioned earlier, there are more dynamic platforms for viewing and even manipulating data. To the extent that an important end product of our work is the accessibility of this information to the general public, visual display and user-friendly interfaces become all the more important.

Therefore, we believe it would be worthwhile to continue to move more corridor data to the structures presented earlier. This would allow any manner of user – concerned citizens, corridor leaders, and potential funders – to see corridor-related data at a glance. Simulations can also allow people to play "what if," instead of having to make investments to see what happens, or be fearful to try anything for fear of failure.

Importantly, this process may and should entail some infrastructural coordination with other large data sets, most notably those managed by the City. Mayor Nutter's PhillyStat initiative is a prime potential repository for corridors data, and therefore future discussions with key officials as well as data managers should be scheduled to discuss the feasibility and mechanics of integrating corridors data into PhillyStat.

Additional, visually oriented products can also be made available. Heretofore, our simulations have been built from our understanding of consumer choice characteristics. Similar models could also be constructed based on retail sales and real estate data. For example, one could model the effect of various chain arrivals or policy interventions on retail sales levels and real estate values. To the extent that the City is interested in such simulations, illustrative results can offer a sense of the spatial distribution of commercial activity as well as tax revenues generated; while neighborhood groups could see the effect of various nearby "events" on property values.

16.0 CONCLUSION

To summarize the project, we have taken a large step toward understanding what makes corridors tick – which factors are important for performance and which are less so. We have done this by collecting a great deal of data, subjecting them to sophisticated analytic techniques, and collecting the findings into a narrative that pieces together the individual threads.

As far as we've come, however, there is still more to be leaned from just this data. Given the enormous amount of data, there are nearly limitless questions that can be informed by what has been collected. In a sense, we have made a major effort to climb the mountain, and are only beginning to enjoy the view.

This project has also proven that it is possible to use survey data and Revenue Department data to conduct meaningful analyses. These data were simply not available prior to this project, and now they have been used to show the top corridors, and to help explain what drives corridor performance. The data were challenging to collect, and there are numerous refinements that are possible.

Finally, the purpose of this work is to inform policy and provide a resource for others. We encourage interested parties to use the relationships described in this report, and to use the publicly available data to develop ideas further, or to ask entirely different questions.