



## **Charlotte Streetcar Economic Development Study**

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City of Charlotte

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# Executive Summary

## Overview and Study Approach

This Study presents an economic evaluation of the proposed Charlotte Streetcar, which would run on an approximately 10 mile corridor along Beatties Ford Road from Interstate-85 through Downtown and out along Elizabeth Avenue and Central Avenue to Eastland Mall. The central question addressed by this Study is how much funding could be anticipated from property-value based mechanisms, and what does this amount of potential funding mean for the feasibility of the proposed Charlotte Streetcar. The Study was prepared by BAE, a national urban economics and development advisory firm with expertise in transit-oriented development, in collaboration with Charlotte-based real estate firms Warren & Associates and Integra Realty Resources.

The proposed Charlotte Streetcar would be an addition to existing City plans and proposals for multiple new rapid transit lines, including the Northeast Corridor Blue Line extension, North Corridor Purple Line commuter rail, Southeast Corridor Silver Line, and West Corridor. Different types of transit are being evaluated for use on the various corridors, including light rail, heavy commuter rail, bus rapid transit, and streetcar (the latter for the West Corridor).

The Study involved identification of the lessons learned from other streetcar systems, thorough evaluation of local Charlotte markets and the proposed corridor, and preparation of detailed projections of potential property-value based funding. An academic literature review of streetcar systems (and related light rail) was conducted, along with qualitative and quantitative case study assessments of streetcar systems in other cities, and analysis of the impact of LYNX Blue Line on property values. Local developers and stakeholders along the proposed Streetcar corridor were interviewed. A detailed evaluation of development potential was conducted, and scenarios formulated for alternative levels of development from 2010 through 2035 along the proposed Streetcar corridor. The range of available property-value based mechanisms was identified and evaluated, and detailed projections were prepared that incorporate various assumptions about development, increases in property value, and other factors.

## Key Findings

- Projected scenarios for new development along the entire 10 mile proposed Streetcar corridor from 2010 to 2035 include:
  - A “**No Build**” or “**No Streetcar**” development scenario, with only continued bus service along the proposed streetcar corridor (including Downtown), indicates that new development from 2010 to 2035 could realize approximately:
    - 6,600 new multifamily dwelling units (4,100 rental and 2,500 for-sale);
    - 3.8 million square feet of new office space (89 percent Downtown);
    - 250,000 square feet of new retail; and
    - 1,000 new hotel rooms.

These figures reflect active development Downtown, as well as increasing revitalization in areas along Elizabeth and Central Avenues, and Beatties Ford Road.

- A “**Baseline**” development scenario that reflects the proposed Streetcar corridor stimulating greater development than has occurred over the past decade, comparable to the potential rate of development along Charlotte’s other new transit corridors, due to the combination of streetcar and other supporting public actions. New development from 2010 to 2035 in this scenario could realize approximately:
  - 9,500 new multifamily dwelling units (5,400 rental and 4,100 for-sale);
  - 4.3 million square feet of new office space (78 percent Downtown);
  - 370,000 square feet of new retail; and
  - 1,100 new hotel rooms.
- An “**Accelerated**” development scenario that reflects the proposed Streetcar corridor capturing an even larger share of regional growth from 2010 to 2035 as a result of very strong catalytic effects from the new streetcar and other supporting public actions. New development from 2010 to 2035 in this scenario could realize approximately:
  - 11,300 new multifamily dwelling units (6,400 rental and 4,900 for-sale);
  - 4.5 million square feet of new office space (76 percent Downtown);
  - 390,000 square feet of new retail; and
  - 1,200 new hotel rooms.
- The two primary land value based revenue sources that are available and most viable for financing of the proposed streetcar under current North Carolina law are: (1) creation of a Tax Increment Finance District (recently authorized by the Legislature); and (2) creation of a Municipal Services District (already established in portions of the Downtown).
  - **Tax Increment Finance (TIF)** allocates increases in property tax receipts above a base level – using existing tax rates so there is no tax increase to property owners – with proceeds used to finance capital improvements to support new development.
  - A **Municipal Service District (MSD)** creates an additional property tax rate that is used to provide services or facilities within a defined district. Its proceeds can also be used to finance capital improvements to support new development.
- Potential TIF and MSD generation was projected based on the development scenarios, adjusted for factors affecting tax proceeds, including the potential MSD rate (0.02 percent to 0.06 percent per year); increases in land value due to a “streetcar premium” (one-time, ranging from zero to 10 percent); and appreciation due to neighborhood revitalization (combined ranging from zero percent to 0.3 percent per year).
  - “Low” and “Moderate” projections of TIF and MSD used the Baseline development scenario, and a “High” projection used the Accelerated development scenario.
  - Total combined TIF and MSD generation for the period from 2010 to 2035 are<sup>1</sup>:
    - The Low funding scenario is approximately \$209 million.
    - The Moderate funding scenario is approximately \$249 million.
    - The High funding scenario is approximately \$305 million.

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<sup>1</sup> These figures do not include the proposed Elizabeth Avenue Synthetic Tax Increment Finance District (STIF) repayment. The value of the STIF was in the process of being determined when the Study was prepared.

- These projections assume no payments from tax-exempt institutions in the proposed streetcar corridor, consistent with North Carolina law for property taxes and MSD's.
- The potential amount of financing that could be supported will be less than the above amounts due to interest and bond issuance costs, and would be affected by the timing of streetcar construction.
- Future property tax proceeds in 2035 were compared between the No Streetcar and Low, Medium, and High funding scenarios to allow an even comparison of fiscal benefit, i.e. what would be the proceeds after expiration of TIF and MSD Districts in 2035.
  - The growth in annual property tax proceeds only by 2035 above current levels would be approximately:
    - No Streetcar: \$11.8 million per year
    - Low Scenario: \$15.2 million per year
    - Moderate Scenario: \$16.0 million per year
    - High Scenario: \$17.9 million per year

These findings are set forth in the following summary table:

### Summary of Key Assumptions and Potential Property Value Based Revenue Generation

#### Taxation and Property Value Increase Assumptions

Tax Rates	Tax / Appreciation Scenarios		
	Low	Moderate	High
MSD Tax Rate	0.02%	0.04%	0.06%
TIF Tax Rate	0.46%	0.46%	0.46%
<b>Streetcar Value Premium</b>			
Residential	0.00%	5.00%	10.00%
Commercial	0.00%	5.00%	10.00%
<b>Neighborhood Reinvestment Factor (Annual)</b>			
Residential	0.00%	0.30%	0.30%
Commercial	0.00%	0.00%	0.00%

#### Projected New Development

Type / Quantity of New Development	Growth Scenarios		
	Baseline	Baseline	Accelerated
For-Sale Residential, Units	4,117	4,117	4,928
Rental Residential, Units	<u>5,343</u>	<u>5,343</u>	<u>6,386</u>
Total Residential, Units	9,460	9,460	11,314
Retail, Sq. Ft.	365,723	365,723	391,109
Office, Sq. Ft.	4,338,849	4,338,849	4,488,439
Hotel, Rooms	1,137	1,137	1,176

#### Cumulative Revenue Projections, 2008 through 2035

*(Figures in constant 2008 dollars)*

Revenue Projections	Revenue Generation Scenarios		
	Low / Baseline	Moderate / Baseline	High / Accelerated
MSD Revenues	\$27,127,031	\$55,232,861	\$86,149,986
TIF Revenues	\$182,079,935	\$193,301,874	\$218,530,175
Total MSD and TIF Revenues	\$209,206,965	\$248,534,735	\$304,680,160

Note: See report and tables for explanation of methodology and assumptions.

Sources: Warren & Associates, 2008; BAE, 2008.

The remainder of this Executive Summary provides additional information regarding the research and analysis that supports these key findings. The following pages of the Study and its appendices provide the comprehensive research and analysis, including detailed tables documenting assumptions and containing the financial model prepared for the Study.

## **Potential Financing Sources**

The types of financing plans used for most streetcar systems includes a combination of federal, state, and local sources. Most streetcar systems are financed from a complex combination of multiple financing sources.

The federal Small Starts programs has been seen as a promising source, however its restrictive criteria has led to only three streetcar systems to date obtaining initial funding approval. There is some potential that the Federal Transit Administration may consider revising its criteria in 2009 to make this source more available. Many states and regions have incorporated streetcar grants into their ongoing capital improvement programs, dependent upon funding sources which vary widely, but can include gasoline taxes and sales taxes.

Local sources for existing streetcar systems are broad-based, and in addition to gasoline and sales taxes, include General Fund contributions, other general tax increases, and parking meter and public garage revenues. Other pending proposals in other cities include surcharges on admissions at publicly-owned venues for entertainment and sporting events. A number of cities are looking at private donations to fund a portion of project costs, including donations from major universities that would receive substantial services from a streetcar line.

There are several potential land value based financing sources. The most significant source is TIF, and the North Carolina Legislature recently authorized local governments to create TIF Districts that can be used to finance bonds for public improvements (previously, local governments were only allowed to create “synthetic” project-based TIF Districts to repay public improvements financed by developers).

The next most significant source of land value based financing are numerous types of Special Assessment Districts, including Local Improvement Districts. A MSD is an example of a particular type of Special Assessment District. Another common mechanism is Development Impact Fees or Service District Charges levied on new development based on the benefits it receives (e.g. an amount per square foot or dwelling unit), however it is not allowed by North Carolina law. Joint Development projects involve a transit agency sale or lease of land it owns for development to capture its value, however most streetcar systems have limited agency-owned land.

Last year, the North Carolina Legislature approved Special Assessment Districts for Critical Infrastructure Needs, including public transit. Such an Assessment District, unlike TIF or MSD, result in levies on properties owned by tax-exempt institutions. However, the requirement for a majority vote of property owners could make establishment of one politically problematic in a larger area with hundreds or thousands of property owners, such as the proposed streetcar corridor.

## Literature Review and Case Study Research

The academic literature on the land value created by transit, i.e. the “land value premium” mostly addresses light-rail or other types of rail transit that is not directly comparable to a streetcar. The more recent popularity of streetcar systems means that there is almost no analysis of its potential land value premium. For this reason a range of potential land value premiums were modeled for this Study.

Detailed research was conducted on the streetcar systems in Portland, OR; Seattle, WA; and Memphis, TN. An analysis of paired land sales along Charlotte’s South Corridor LYNX Blue Line was conducted to identify increases in land value associated with changes in zoning to support transit-oriented development and the opening of the new light rail service. Extensive interviews were conducted with local developers, including those who have already purchased property in the proposed streetcar corridor.

As demonstrated throughout the literature and in the case studies, the premium for property values located near transit can vary substantially from one location to another, as well as over time along the same route as it is extended. In Portland, the use of a Local Improvement District (LID) and other value-based financing tools to finance portions of each streetcar segment appears to bear out that capturing this value premium is workable. In Seattle, it is too early to ascertain any trend, while in Memphis the findings are a bit more varied. Charlotte itself, along the Blue Line, appears to have experience substantial value increases, although it should be noted that it is difficult to separate out the additional value created by new, higher density zoning from otherwise similar “before” and “after” transit system situations.

The picture for streetcar as a catalyst for new development will depend on the overall economic situation as well as a host of other non-transit related factors. In Portland, the streetcar route is credited with stimulating the revival of the Pearl District, and the data collected there does seem to bear this out. However, the Pearl District was already underway as a new urban neighborhood, and had attracted substantial private investment capital prior to the streetcar’s initiation (and much as in Seattle, these private developers actually encouraged the construction of the streetcar to enhance their projects’ market position).

Interviews conducted with developers in Charlotte indicate this same trend. Developers who have decided to invest along the proposed streetcar route attribute the streetcar with attracting their capital investment, but also mention in some cases that the corresponding increases in zoning/entitlements drew their attention. Separating out the two factors is quite difficult in this case. Indeed, there may be some potential developers or land owners who see the streetcar as a “silver bullet” that makes otherwise relatively modest local markets come alive. While this may be true in a city like Charlotte, with dynamic overall growth and extensive planned new transit service, it is not clear that the competitive advantages of the proposed streetcar route alone would elevate these local markets to the level of marketability desired by project proponents, especially in the next few years as the overall economy slows and capital dollars are limited.

It should be noted, however, that much of market demand and attraction of private capital is driven by perceptions of a competitive advantage. The streetcar route in Charlotte is perceived to be a

development catalyst by those developers who were interviewed. While this may be driven more by individual investment decisions speculating on the “next big thing,” the increasing need for more efficient patterns of land use made possible by transit service may well extend and reinforce this initial perception in the future.

## Streetcar Corridor Development Potential

The proposed streetcar corridor was broken into four separate segments, covering  $\frac{1}{4}$  mile on either side of the proposed streetcar route, in order to allow more detailed evaluation of local market conditions, and preparation of funding projections by sub-area. The four segments are:

- **West:** Rose Parks Place Community Transit Center, along Beatties Ford Road to Interstate-77;
- **Downtown:** Interstate-77 to Interstate-277 along Trade Street;
- **Midtown:** East of Interstate-277 along Elizabeth Avenue, north along Hawthorne Lane, and looping to Central Avenue and eastwards to Briar Creek; and
- **East:** Briar Creek to Eastland Mall.

Existing Area and Districts Plans covering these segments were reviewed to identify areas that have been rezoned to accommodate more dense mixed-use development through a Pedestrian Overlay District, Transit Supportive Overlay District, or other urban zoning. A review of all properties within the proposed streetcar corridor was conducted to identify the likely amount of underimproved property that could be expected to be redeveloped by 2035 based on existing and future zoning permitting denser mixed-use projects.

A market study of the local market area for each of the streetcar corridor segments was undertaken by Warren & Associates to project potential market support for various types of development, the amounts that could be captured within the  $\frac{1}{4}$  mile proposed streetcar corridor, product types, pricing, and other considerations (a summary of the market study is in the Study appendices). The market study considered both development patterns and absorption over the past decade, as well as future development through 2035 as projected by the Centralina Council of Governments.

The analysis indicates that there is considerably more long-term development capacity, i.e. available land with appropriate zoning, than there is market support even under the most aggressive development projections. This is not unusual as zoning entitlements often exceed the potential market demand to ensure sufficient available sites, as not all existing owners are interested in selling their properties even if it can support denser new development. Since the availability of suitable sites is not expected to be a constraint, the market study analysis and future development projections were used to formulate development scenarios for the streetcar corridor segments.

## Next Steps

The projected land value based funding does not directly translate to available potential financing for the streetcar system, for several reasons. Perhaps the most significant factor is that property-based value capture mechanisms build value over time, while capital improvement costs typically need to be made up-front. Obtaining a larger amount of financing than can be justified by available

tax increment and/or assessment district proceeds is often done by providing credit guarantees, or arranging internal loans of funds from other accounts that would be repaid from future tax increment and MSD payments as they increase. Other factors that might affect financing would include whether improvements can be phased.

The next steps for a streetcar financing strategy would include evaluation of these and other factors with the City's budget and management staff, and decisions on the optimal methods for leveraging potential tax increment and MSD proceeds. That work would then need to be integrated with other work addressing various other potential federal, state, and local grants and non-property tax based funding sources.



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# I n t r o d u c t i o n

## **Purpose of Study**

The City of Charlotte has experienced rapid growth and expanded economic opportunity in recent years. Strategic growth management, along with extensive private and public investment in Downtown and throughout Charlotte's neighborhoods have all strengthened the city's outstanding quality of life, heightened its competitive position, and boosted economic development.

The integration of modern rail transit into Charlotte's urban fabric has experienced strong success. The first light rail transit line - the LYNX Blue Line - opened in November 2007 and rapidly exceeded ridership expectations. Additional rapid transit lines are in various stages of planning and design, including the Northeast Corridor Blue Line light rail extension, the North Corridor Purple Line commuter rail, and the Southeast Corridor Silver Line light rail/bus rapid transit (to be determined). These fixed guideway transit lines, when completed, will transport people throughout the region, in a generally north-south direction.

To provide fixed guideway transit service and connect neighborhoods that are north and east of Downtown, Charlotte has explored construction of a contemporary streetcar system that would approximately run along Beatties Ford Road from Interstate-85 through Downtown and out along Elizabeth Avenue and Central Avenue to Eastland Mall. A separate proposed project for a West Corridor connector from Downtown to the Charlotte Douglas International Airport is considering use of a streetcar as well as bus rapid transit. Compared to light rail systems, streetcar systems generally offer smaller cars and can operate within existing streets, sharing rights of way with passenger and other vehicles. Streetcars also have the ability stop along the street, rather than at stations, allowing for an easy integration into neighborhood streetscapes

This Study was commissioned by the City of Charlotte to analyze the potential of the streetcar route to stimulate infill development, capture increases in property values, and finance a portion of the capital costs using contemporary financing mechanisms based on this increased property value.

## **Methodology**

The concept of financing fixed guideway transit systems using value capture techniques has been utilized by many cities in the U.S. and Europe, with varying degrees of success in terms of achieving substantial funding streams, leading to the central question of this Study: *How much funding could be anticipated from property value-based mechanisms, and what does this mean for the feasibility of the Charlotte streetcar system?*

To address this central question, this Study takes a multi-pronged approach, seeking lessons learned from other cities' experiences, and applying those lessons to the fiscal revenue base in Charlotte. Specifically, this Study included the following steps:

- **Identify Lessons Learned From Other Systems**
  - Conduct a literature review of streetcar systems (and related light rail systems) in the U.S. to identify lessons learned
  - Conduct a qualitative series of case studies of selected recently constructed systems
  - Analyze available data in comparable case study cities to quantify increases in property values from streetcar-related development
  - Analyze the impacts of the LYNX Blue Line in Charlotte on nearby properties
  
- **Estimate Potential Funding in Charlotte**
  - Interview local developers and stakeholders impacted by the proposed streetcar route in Charlotte to understand expectations and concerns
  - Evaluate potential new development opportunities along the proposed route
  - Prepare a detailed estimate of value capture and funding streams generated by several financing mechanisms along the proposed Charlotte streetcar route

## **Report Organization**

The following report first provides an overview of U.S. contemporary streetcar systems including financing mechanisms and studies in the literature that look at value capture issues. The next chapters profile case study findings from Portland, Memphis, and Seattle’s streetcar systems, as well as the value premiums associated with Charlotte’s existing light rail. This chapter also summarizes interviews held with property owners and developers along the proposed Charlotte streetcar route and their opinions about the streetcars affects on property values and development opportunities. Next, the report summarizes the proposed Charlotte streetcar system, including a detailed analysis of potential for infill development. A market study conducted for this analysis is also summarized. The report then presents a summary of the financial forecasting model prepared for this study, which analyzes the potential funding generated by municipal service district (MSD) and tax increment financing (TIF) mechanisms applied to properties within a defined area surrounding the streetcar system. The report concludes with a discussion of the implications of this analysis.

# Financing for Contemporary Streetcar Systems

## Contemporary Streetcar Systems

In the past 30 years, numerous cities have planned and implemented new rail transit systems. This movement has coincided with other urbanization factors, bringing new life to urban core areas and advancing strategies for growth that promote more efficient patterns of development. Various forms of heavy rail, commuter rail, light rail, and streetcar systems have been built, many with robust ridership and popularity, due to a rediscovery of this form of transportation, and exacerbated by rising gas prices.

One of the types of rail under consideration or built by numerous cities is the streetcar, reviving an older form of urban transportation. At present, there are more than three dozen streetcar systems either built, under construction, or planned across the U.S. (see Appendix B for listing). These streetcar systems have gained in popularity due to their relatively lower cost of construction than light or commuter rail, the ease of integrating streetcars into existing urban fabric, and the convenience of frequent stops.

Although the definitions can blur, a streetcar is generally differentiated from light rail by its narrower “cars,” its narrower gauge tracks, and its more frequent stops than light rail. Streetcars also use electric engines and are connected to overhead electricity lines with a trolley pole.<sup>2</sup> As described by Reconnecting America, “the U.S. term streetcar is generic to most forms of common carrier rail transit that runs or has run on streets, providing a local service and picking up and discharging passengers at any street corner, unless otherwise marked.”<sup>3</sup> Modern streetcars typically run in the street at grade on embedded rails, stop every two or three blocks, move at 8 to 12 miles per hour, and provide low cost per mile construction costs relative to light or heavy rail. Stops can be as simple as signs marking a location.



<sup>2</sup> American Public Transit Administration

<sup>3</sup> See Reconnecting America, “Transit Technologies Worksheet” at <http://www.reconnectingamerica.org/public/tod>.

Two subcategories of streetcars are experiencing a surge in popularity: vintage (historic) and modern. Some existing streetcar systems use historic rail cars to attract tourists and create an overall ambiance, while some systems use or are planning to use a mix of historic and contemporary cars. Charlotte has its own vintage trolley that was a precursor to the LYNX Blue Line, and that still runs on the South Corridor on weekends.

The most showcased modern streetcar system in the U.S. is the Portland streetcar, profiled in more depth in the following chapter. Opened in 2001, the system has grown to over four miles of track traversing downtown, and is currently in the final design stages of an additional 3.3 mile extension from downtown Portland across the Willamette River. The success of this system, and its relationship to further enhancing the Portland region's extensive network of light rail lines, has made Portland a leader in public rail transit. In the past few years, five new streetcar systems have been completed, including segments in Tampa, Florida; Little Rock, Arkansas, Memphis, Tennessee; and Tacoma, Washington, as well as the recently-opened system in the South Lake Union neighborhood near downtown Seattle. As of first quarter 2008, there are now as many as 46 streetcar initiatives across the US and Canada in the planning stage, ranging from larger cities such as Columbus, Ohio, to smaller cities like Winston-Salem, NC and Lake Oswego, OR.

## **Overview of Streetcar Financing Mechanisms**

As a subcategory of rail systems, streetcar systems face a daunting challenge to finance initial construction costs as well as ongoing operating costs. However, streetcars, due to their light weight, smaller sizes, at-grade functionality, and other features, tend to be relatively easy to incorporate into existing public street networks, eliminating the need for major right-of-way land assembly, thus substantially reducing costs compared to other technologies.

The following provides an overview of the key types of financing used or under consideration by streetcar system planners across the U.S.

**Small Starts Program (Federal Transportation Administration).** Congress created this grant program in 2003, and it initially was considered as holding much promise. However, various measures used to evaluate system grant applications have resulted in many streetcar systems not achieving funding through this mechanisms, resulting in strong recommendations from the transit community to revamp Small Starts when Congress considers a new surface transportation bill in 2009. To date, just three systems have obtained Small Starts funding, including an extension to the well-established Portland system and new projects in Tucson, Arizona and Fort Lauderdale, Florida.

**State and Regional Programs.** Many states and regions have incorporated streetcar grants into their ongoing capital improvements programs, dependent on funding sources which vary widely, but can include gasoline taxes and sales taxes.

**Local Sources – Taxes, Parking Revenues, Surcharges.** Some cities have utilized a broad-based financing strategy with local surcharges on retail sales, other forms of general tax increases, allocations from local General Funds funded by tax revenues, and revenues collected from a defined area’s parking meters or public parking garage revenues. This last mechanism seeks to link automobile use to transit, creating a pricing disincentive to auto use, while collecting fees to fund alternative transportation methods. Examples include the Grand Rapids line, which has a proposed \$0.25 sales tax increase, and Sacramento, where public parking garage charges would increase 10 percent along with a \$0.25 per hour increase for metered on-street parking.

A few creative types of taxes and surcharges have surfaced in the streetcar financing realm, including a proposal in Columbus, Ohio to add a surcharge to paid admissions at publicly-owned venues for entertainment and sporting events. These events are held in publicly-sponsored arenas and other venues within walking distance of the proposed streetcar line and also affected by convention visitation, and as such, make sense to charge patrons to fund a transit system serving these venues.

**Local Sources – Land Value Based.** This category of financing is the main focus of this report. Many fixed guideway transit systems, including streetcar as well as light and heavy rail systems, are created and partially funded on the premise that providing fixed guideway transit service to a site enhances the site’s value, compared to other sites without this transit service. The added value of the service, expressed in higher values attributable to the land, means that in theory, a residential condominium or office space lease rates bring a higher price on the marketplace as a result of this new fixed guideway transit service. In addition, in many cities, higher density zoning or other development entitlements also can be obtained near fixed guideway transit lines, bringing an even higher value to the underlying land. For both of these reasons, many transit planners seek to capture the value of the transit service through land value-based types of financing mechanisms. There are several types of value capture mechanisms, as profiled below.

- *Tax Increment Financing (TIF).* This mechanism uses existing legal frameworks (which differ from state to state), to “freeze” property taxes at the inception of the process, and divert additional property taxes as property values rise from the public investment, to pay for the improvement. This can be accomplished either on a “pay as you go” method, where the increment of taxes above the original baseline are collected each year and directly reinvested in a public improvement, or these expected incremental tax revenues can be pledged to pay a tax increment bond, enabling up front funding of the full improvement.
- *Special Assessment Districts (Local Improvement District, Municipal Services District).* This mechanism relies on direct property tax assessments, usually in a defined geographic area which is demonstrably receiving the “benefit” of the fixed guideway transit service. Since streetcars are relatively localized, the geographic area is often fairly defined. The specific mechanisms will vary from state to state, but the general idea is that these property owners are charged an annual payment on the basis of a fair allocation (such as per lineal foot of frontage to streetcar, per square foot of land in a defined walkable zone, etc.). This funding stream is then used to either pay for improvements annually, or pledged to repay a bond over time.

Assessment districts often apply to all properties within a district, including those owned by tax-exempt entities, for the reason that all property owners regardless of tax status receive the same benefits provided by the district. In North Carolina, tax-exempt properties are not subject to Municipal Service District fees. However, the State legislature recently authorized a new special assessment district for critical infrastructure, including public transit, and tax-exempt property owners would be required to make payments for this type of district.

- *Development Impact Fee or Service District Charge.* This mechanism is used broadly throughout the U.S. to finance a variety of infrastructure and transportation improvements serving new development projects. However, in most cases, the impact fees charged must be demonstrably benefiting just the new development (e.g., a nexus test), and must therefore be carefully designed to not include benefits to other existing property owners or residents. These types of fees are not currently allowed in North Carolina.
- *Joint Development.* This mechanism uses publicly-owned land directly, to stimulate valuable private development with a transit orientation (TOD). Since streetcars do not generally involve substantial publicly-owned land area (e.g., do not involve parking lots), this concept is less frequently considered as a direct funding source for streetcar systems.

**Private Donations.** Multiple cities are planning to finance a portion of their streetcar line with private investments or sponsorships. Columbus' \$103 million streetcar proposal includes a \$12.5 million contribution from Ohio State University, which will receive substantial services from the proposed streetcar line. Similarly, Cincinnati, Ohio's plan includes a \$30 million private investment, approximately 40 percent of the entire cost of the line, while 50 percent of Grand Rapids, Michigan's \$80 million line would be financed by private donations. This approach tends to work best if there is a large institutional or other landowner with substantial services received from the streetcar system.

## Literature Review of Transit Value Premiums

A substantial amount of research and analysis has been undertaken by policy experts over the past decades to track and document the effects of fixed guideway transit system development on property values. This topic has commanded so much attention because many policymakers believe that fixed guideway transit systems created a "value premium," meaning an increase in property values or related economic factors, as a result of the increased access and desirability of the land served by the fixed guideway transit. If increased value, can be linked to the transit improvement, a portion of this increase has strong potential to be "captured" up front in the transit development process, and converted to a funding source for the transit system. In other words, local and regional governments seek to share in the economic benefits which fixed guideway transit is thought to bring to private property owners, in order to finance the transit system.

Numerous studies have used statistical models (e.g., hedonic price models) and other methods to examine "before" and "after" land sales, lease rates, and home prices in areas near transit stops, particularly for commuter and light rail systems. Many of these studies were reviewed for this

report. However it should be noted that due to the relatively recent emergence of contemporary streetcar systems, almost no analysis of the value premiums potentially associated with streetcars has been documented in the literature.

An excellent summary of various fixed guideway transit value premium studies was recently published by the Center for Transit Oriented Development, a non-profit organization associated with Reconnecting America. Entitled *Capturing the Value of Transit* (CTOD, 2008), the publication reviews the concepts associated with this topic, and summarizes the findings of more than 20 analyses of the effect of fixed guideway transit on different land uses around the U.S. Many of these studies, in turn, identified a range of value premiums associated with fixed guideway transit, and utilized a variety of techniques to come to this conclusion.

The range of findings from the wealth of literature indicates that this topic presents challenges in distilling conclusions applicable directly to other locations. As shown below, *Capturing the Value of Transit* found the reviewed studies to conclude the following:

**Table 1: Range of Value Premiums Associated with Transit**

	<b>Range of Property Value Premium</b>	
<b>Single Family Residential</b>	<b>+2% w/in 200 ft of station</b> <i>(San Diego Trolley, 1992)</i>	to <b>+32% w/in 100 ft of station</b> <i>(St. Louis MetroLink Light Rail, 2004)</i>
<b>Condominium</b>	<b>+2% to 18% w/in 2,640 ft of station</b> <i>(San Diego Trolley, 2001)</i>	
<b>Apartment</b>	<b>+0% to 4% w/in 2,640 ft of station</b> <i>(San Diego Trolley, 2001)</i>	to <b>+45% w/in 1,320 ft of station</b> <i>(VTA Light Rail, 2004)</i>
<b>Office</b>	<b>+9% w/in 300 ft of station</b> <i>(Washington Metrorail, 1981)</i>	to <b>+120% w/in 1,320 ft of station</b> <i>(VTA Light Rail, 2004)</i>
<b>Retail</b>	<b>+1% w/in 500 ft of station</b> <i>(BART, 1978)</i>	to <b>+167% w/in 200 ft of station</b> <i>(San Diego Trolley, 2004)</i>

From: *Capturing Value from Transit* (Center for Transit Oriented Development, November 2008).

Note: VTA is the Santa Clara, CA (Silicon Valley) Valley Transportation Authority

The report also describes studies which show a negative impact on value associated with fixed guideway transit. For example, a 1995 study by Dr. John Landis at the University of California, Berkeley, found that values for single family homes within 900 feet of light rail stations in Santa Clara County (e.g., County containing San Jose) were 10.8 percent lower than comparable homes located further away, and no value premium could be identified for commercial properties within one-half mile of BART stations in the East Bay of the San Francisco area.<sup>4</sup>

<sup>4</sup> 13 Landis, J. et al. "Rail Transit Investments, Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Systems," Institute of Urban and Regional Development, UC Berkeley, 1995

One of the most thorough analysis conducted after 2000, when contemporary fixed guideway transit systems had established their resurgence as a modern, desirable form of transportation in urban America, was conducted by Dr. Robert Cervero at the University of California, Berkeley. This study, a survey of other studies covering just housing value premiums associated with fixed guideway transit, found that among the seven locations (Philadelphia, Boston, Portland, San Diego, Chicago, Dallas, and Santa Clara County), value premiums ranged from 6.4 to over 40 percent.<sup>5</sup> The authors concluded that value premiums depended on a variety of factors, including traffic congestion, local real-estate market conditions, and business cycles.

Transit in Europe can also provide insight to ways of measuring value capture. A study of 15 light rail systems in France, Germany, the United Kingdom, and North America measured housing prices, residential rent, office rent, and property values in each of the cities, concluding that there was a positive value premium in all but two cities. These two cities initially experienced negative value impacts from fixed guideway transit due to the noise associated with the light rail system.<sup>6</sup>

One key aspect of this extensive literature is the separation of fixed guideway transit's impacts on existing real estate versus its impacts on new development. In many situations, once a fixed guideway transit system is planned, local governments also increase zoning densities or implement policies which densify allowable development. This makes sense, because fixed guideway transit allows the movement of people without commensurate automobile traffic impacts. However, studies of value premiums often face the challenge of controlling the analysis for changes in zoning (to allow for denser development) and the effects of related development policies. Conversely, increases in allowable development through denser zoning, even in the absence of fixed guideway transit, will almost always result in a higher land value, because a developer can build more units on the same site under these increased density conditions.

For the Charlotte streetcar, these widely varying value premium findings make it is difficult to forecast this factor for the system's impacts with any precision. Moreover, many portions of the streetcar route in Charlotte have also undergone increased zoning densities, and several developers interviewed for this study had purchased land at higher values as a result of this combined situation (denser development allowances and the expectation of a streetcar).

The following chapter explores value premiums and related benefits for specific case study cities in more depth.

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<sup>5</sup> "Real Estate Market Impacts of TOD" (R. Cervero & M. Duncan, 2001).

<sup>6</sup> "Economic Impact of Light Rail: The Results of 15 Urban Areas in France, Germany, UK, and North America". (Hass-Klau, Carmen, Graham Crampton and Rabia Benjari, 2004).

## Case Studies

For this Study, research was conducted into the experience of several cities around the U.S. that have constructed contemporary streetcar systems, in order to understand the impacts of the streetcar presence on both the value of underlying property (e.g., the existing tax base) and the impacts of streetcar as a stimulant to attracting new private development projects.

It should be noted that both trends – increases in existing property, and accelerated new development – are anticipated as outcomes of the proposed Charlotte streetcar. These two ideas are linked, as well. Property values will rise with transit service, because there is the expectation that the existing land use has been enhanced (e.g., higher rents can be charged, home values increase, etc.), from access to this unique amenity.

From an economics point of view, the first outcome – increases in existing property values – is less difficult to identify across cities. Most cities keep good records of assessed value, and also of sale prices when property turns over. Thus, a review of assessed values in an area “before” and “after” streetcar construction is possible, as is analysis of “matched pairs” of sales.

Tracking the impacts of streetcar construction on the pace and amount of new development is a less exact matter, because every city in the U.S. experiences a host of other market forces influencing demand for new development projects. This means that the pace of development resulting from a new streetcar system is shaped by unique local factors, and therefore cannot necessarily be assumed to be repeatable in other locations. If the economy is not growing, or the idea of urban transit service is not valued by housing unit buyers or employers, no amount of transit service will stimulate a moribund situation. If, on the other hand, as Charlotte has experienced in the past decade or more, an economy is strong, vibrant, and growing, the added amenity of streetcar transit service in an area can enhance its desirability, and bring it an additional competitive advantage.

### Portland Streetcar

The streetcar system in Portland has gained national prominence as an example of modern transportation using this traditional method of rail. Initially announced in 1997, the system commenced operations in 2001, with the segment from Good Samaritan Hospital to Portland State University. This first segment traversed primarily what was already a rich transit zone offering free bus service through downtown Portland.

Portland Streetcar is owned by the City of Portland in partnership with TriMet, the regional transit operator, who contributes a portion of operating funding. Portland Streetcar is managed by the City Office of Transportation and contracts with Portland Streetcar Inc., a private non-profit organization, for construction and operation of the system.

Streetcars currently run on four mile continuous loop from Legacy Good Samaritan Hospital at NW 23rd Avenue to the South Waterfront District where it connects with the Portland Aerial Tram to a terminus at SW Lowell and Bond.

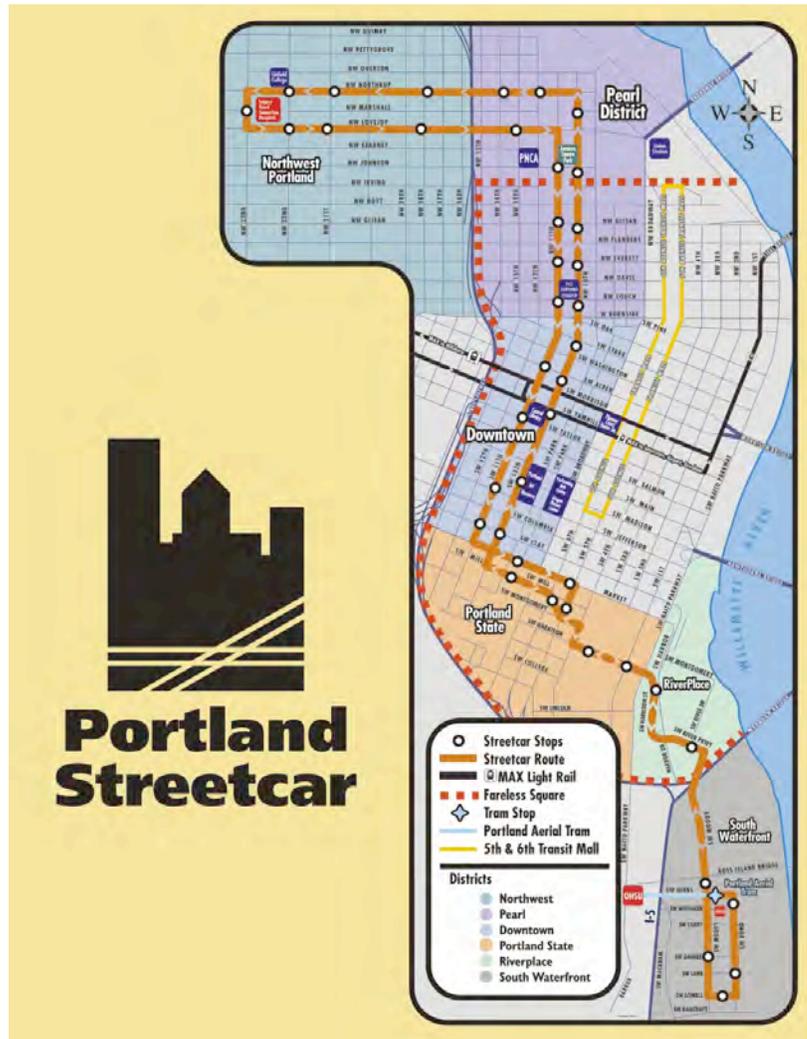
The current system has a total of 46 stops, located approximately every three to four blocks. Streetcars run approximately every 12 minutes during most of the day Monday through Saturday and less frequently in the early morning, evenings and Sundays.

There is currently no charge to ride the portion of the streetcar route traversing Fareless Square (see red dotted line on map), which is a large area covering most of the downtown area (predates streetcar, offers free bus service as well). Tickets for the streetcar outside of Fareless Square are currently \$2.00 for adults and \$1.50 for youth. Transfers from other transportation systems are honored. Ridership of the system as of Spring / Summer 2008 averaged 10,000 riders per day up to 12,600 per day during peak summer weekdays.

**Financing for the Portland Streetcar To Date**

The financing of the Portland Streetcar system has followed a different path and used a different mixture of funding sources for each segment constructed to date. The first segment, running from the Good Samaritan Hospital to Portland State University, a length of 2.4 miles, had a total capital cost of \$56.9 million in 2000/2001. This cost was financed by a mix of local and federal sources. At the local level the most substantial share of capital costs was financed by a city parking revenue bond supported by parking fees in the area of the streetcar. Additional local mechanisms relied on value capture, including a Local Improvement District (LID) and tax increment financing (TIF). Major tax-exempt property owners, including Portland State University, pay the LID fee because of the benefits they receive from streetcar service. As each of three much shorter subsequent segments were constructed, capital costs varied, and funding sources also varied for each increment, as

**Figure 1: Portland Streetcar**



summarized below. Overall, to date, the streetcar system has been financed by approximately 79 percent local funds, including just under 18 percent contributed by local improvement districts and just under 21 percent by tax increment financing.

**Table 2: Summary of Portland Streetcar System Funding Sources Utilized To Date**

Segment	Good Sam Hospital to PSU	PSU to RiverPlace	RiverPlace to SW Gibbs St.	SW Moody/Gibbs to SW Lowell	Total	% of Total
Length	2.4 miles	0.6 miles	0.6 miles	0.4 miles	4.0 miles	
Track Type	Double	Double	Single	Double		
Date of Service	July 2001	March 2005	October 2006	August 2007		
<b>Sources of Funds (Million \$s)</b>						
<u>Local Funds:</u>						
Local Improvement District (LID)	\$ 9.60	\$ 3.00	\$ 2.00	\$ 4.80	\$ 19.40	18.8%
Tax Increment (TIF)	\$ 7.50	\$ 8.40	\$ 3.80	\$ 1.80	\$ 21.50	20.8%
City Parking Bonds	\$ 28.60	\$ -	\$ -	\$ -	\$ 28.60	27.7%
City Parking Fund	\$ 2.00	\$ -	\$ -	\$ -	\$ 2.00	1.9%
City General Fund	\$ 1.80	\$ -	\$ -	\$ -	\$ 1.80	1.7%
City Transportation Fund	\$ 1.70	\$ 0.60	\$ -	\$ -	\$ 2.30	2.2%
Transp System Development Charge (SDC)				\$ 2.50	\$ 2.50	2.4%
Miscellaneous Local Funds (a)	\$ 0.20	\$ 0.10	\$ -	\$ 2.60	\$ 2.90	2.8%
Subtotal	\$ 51.40	\$ 12.10	\$ 5.80	\$ 11.70	\$ 81.00	78.5%
<u>Regional and State Funds:</u>						
Regional Transportation Funds	\$ -	\$ -	\$ 10.00	\$ -	\$ 10.00	9.7%
Connect Oregon				\$ 2.10	\$ 2.10	2.0%
Transportation Land Sale	\$ -	\$ 3.10	\$ -	\$ -	\$ 3.10	3.0%
Subtotal	\$ -	\$ 3.10	\$ 10.00	\$ 2.10	\$ 15.20	14.7%
<u>Federal Funds:</u>						
Federal Transportation Funds	\$ 5.00	\$ -	\$ -	\$ -	\$ 5.00	4.8%
U.S. HUD Grant	\$ 0.50	\$ 0.80	\$ -	\$ 0.65	\$ 1.95	1.9%
Subtotal	\$ 5.50	\$ 0.80	\$ -	\$ 0.65	\$ 6.95	6.7%
<b>Total Funding</b>	<b>\$ 56.90</b>	<b>\$ 16.00</b>	<b>\$ 15.80</b>	<b>\$ 14.45</b>	<b>\$ 103.15</b>	<b>100.0%</b>

**Notes:**

a) Unspecified for 3 segments, includes Gibbs Extension savings and tram transfer for Moody-Lowell segment.

Sources: Portland Streetcar Inc. Capital and Operating Fund Summary, 2-28-08; BAE, 2008.

***Financing for Future Streetcar Extension: Portland Loop Project***

At present, Portland is preparing for its next stage of streetcar system expansion, which will be a larger loop system connecting downtown Portland east with other areas across the Willamette River from the downtown core, including the Lloyd District, a major office center. This eastside extension will pass through additional fairly urbanized neighborhoods, connecting them with downtown retail and employment centers. Specifically, the loop extension will add 3.3 double-tracked miles to the existing streetcar line. It will extend from the Pearl District in NW Portland, crossing the Broadway Bridge, and ending at the Oregon Museum of Science and Industry. The project is currently in its construction design phase, with service slated to begin by 2011. Upon completion, the streetcar system route will be more than 7.3 miles.

Funding sources for this major expansion are shown below. As anticipated, this extension will rely more extensively on federal funds, with \$75 million or just over 51 percent of the project funded from this source. Local funding, from an LID and from the Portland Development Commission (most likely a mix of TIF and other sources) will contribute 10 percent and 19 percent, respectively.

**Table 3: Sources of Funds for Future Portland Streetcar Loop**

Source of Funds:	Amount	%
Local Improvement District	\$ 15,000,000	10.3%
Portland Development Commission	\$ 27,000,000	18.5%
System Development Charge	\$ 6,000,000	4.1%
Regional Funds	\$ 3,000,000	2.1%
Vehicles from State	\$ 20,000,000	13.7%
Federal Transit Administration	\$ 75,000,000	51.4%
<b>Total Project</b>	<b>\$ 146,000,000</b>	<b>100.0%</b>

***Value Premium and Development Impacts***

The Portland streetcar system has been analyzed extensively, but primarily for its impact on the amount and timing of development it has stimulated, rather than on land value increases. Anecdotally, the initial stage of the system is credited with stimulating development of luxury condominiums and specialty retail in the Pearl District, an area which was already undergoing urban revitalization prior to the streetcar but which was linked to upzoning entitlements granted to a large property owner in the late 1990s. Although no land value premium studies were identified for this report, several studies quote the total value of new construction in the Pearl District and attribute all of this new construction to the presence of the streetcar.

More information is available regarding the actual development amounts related to the Portland Streetcar. In a 2005 report prepared by E.D. Hovee & Company for Portland Streetcar, Inc., the operators of the Portland Streetcar system, analyzed the new development patterns experienced as a result of the “Westside” streetcar line in downtown Portland<sup>7</sup>. The study looked at new development quantities on a per lot basis, both before and after 1997 (the year the streetcar was announced). The analysis found that between 1997 and 2004, the density of new construction (e.g., amount of allowable lot development capacity that was actually used in new projects) increased significantly compared to the same geographic area prior to 1997. This density was more pronounced closer to the streetcar line (e.g., one block from streetcar) than further away (three blocks or more from streetcar). For the blocks adjacent to the streetcar alignment, new development averaged 90 percent of allowable Floor Area Ratio (FAR) post-1997, whereas prior to this time, existing buildings averaged just 34 percent of allowable FAR (the study did not look at the density of just newer development projects alone prior to streetcar announcement). Another way to understand the change is that the addition of 4+ million square feet in densely-developed

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<sup>7</sup> *Portland Streetcar Development Impacts*, E.D. Hovee & Company, November 2005.

new projects near the streetcar, in an area previously less dense than the rest of downtown Portland, increased the overall density of the blocks next to the streetcar to the same density as more distant downtown blocks that contain Portland’s Central Business District, as shown below.

**Table 4: Summary of Findings from *Portland Streetcar Impacts, 2005***

Proximity to Streetcar	Buildings Developed Pre 1997				Buildings Developed Post 1997				All Developed Taxlots			
	Existing SF	Potential SF	% of max SF	% of pre 97 dev.	New SF	Potential SF	% of max SF	% of post 97 dev.	Existing SF	Potential SF	% of max SF	% of total dev.
1 block	9,029,000	26,507,000	34%	19%	4,171,645	4,612,000	90%	55%	13,200,000	31,119,000	42%	24%
2 blocks	5,734,000	16,864,000	34%	12%	793,886	1,074,000	74%	10%	6,528,000	17,938,000	36%	12%
3 blocks	7,465,000	15,399,500	48%	16%	773,015	1,175,000	62%	10%	8,198,000	16,575,000	49%	15%
3+ blocks	24,651,000	56,715,035	43%	53%	1,185,510	4,391,000	43%	25%	26,591,000	61,382,000	43%	49%
<b>Total</b>	<b>46,934,000</b>	<b>115,763,000</b>	<b>41%</b>	<b>100%</b>	<b>7,584,056</b>	<b>11,252,000</b>	<b>67%</b>	<b>100%</b>	<b>54,581,000</b>	<b>127,015,000</b>	<b>43%</b>	<b>100%</b>

Note: Condo projects are treated as a single taxlot for this analysis.  
 Redeveloped spaces, inc. former warehouses converted to condominiums, is not included in this analysis.

Source: RLIS, Portland Bureau of Planning, E.D. Hovee & Company.

In addition, the study found that lots located within one block of the streetcar alignment dramatically increased their capture of development activity; prior to 1997, these blocks contained 19 percent of the neighborhoods’ existing development, while after 1997, the same blocks captured 55 percent of all new development in the same neighborhoods.

It should be noted, however, that this area of Portland has long been zoned to permit greater development densities than what actually is built in most new projects; thus, the Hovee study measured the amount of zoning capacity used by developers before and after a specific year in time. Other development trends such as increased demand for more densely developed sites (or increased costs to build, or land costs rising for more general economic reasons, can all influence development patterns and result in denser development with or without a streetcar. Hovee concludes this report with a recommendation that a more thorough statistical model be constructed to better verify the causal relationship between denser development post-streetcar with the effect of the streetcar itself (versus other factors).

## Seattle Streetcar

The Seattle Streetcar is a relatively new system, consisting of 1.3 miles in a combination of single- and double-track segments through an area known as South Lake Union. The streetcar line opened in December 2007, with ridership exceeding expectations to date.

The South Lake Union area has been the target of extensive public and private investment to create a regenerated urban neighborhood, focusing on bio-tech R & D, including facilities occupied by the Fred Kettering Cancer Research Center, the University of Washington, and support uses including urban lofts, retail, office and privately-occupied R & D space.

The total capital cost of constructing this route segment was approximately \$50.5 million, including \$25 million from a Local Improvement District (LID) and the balance provided by local, state, and federal sources.

The adoption of the LID worked well in this case, because this area has several major property owners participating with the City of Seattle on revitalization, including Vulcan (a private development company) and the University of Washington. The University, as a tax-exempt entity, still pays the LID fee because of the benefits it receives from the streetcar line.

An analysis of value capture was not feasible for this report, due to the recent opening of the route, prohibiting a “before” and “after” value comparison.

However, the City of Seattle made its LID appraisal study available for review. This report, *Final Special Benefits Study for South Lake Union Streetcar Project*, City of Seattle LID No. 6750 (Allen Brackett Shedd, 2006), is interesting for several reasons. Instead of taking a strict engineering-style approach to

**Figure 2: South Lake Union LID**

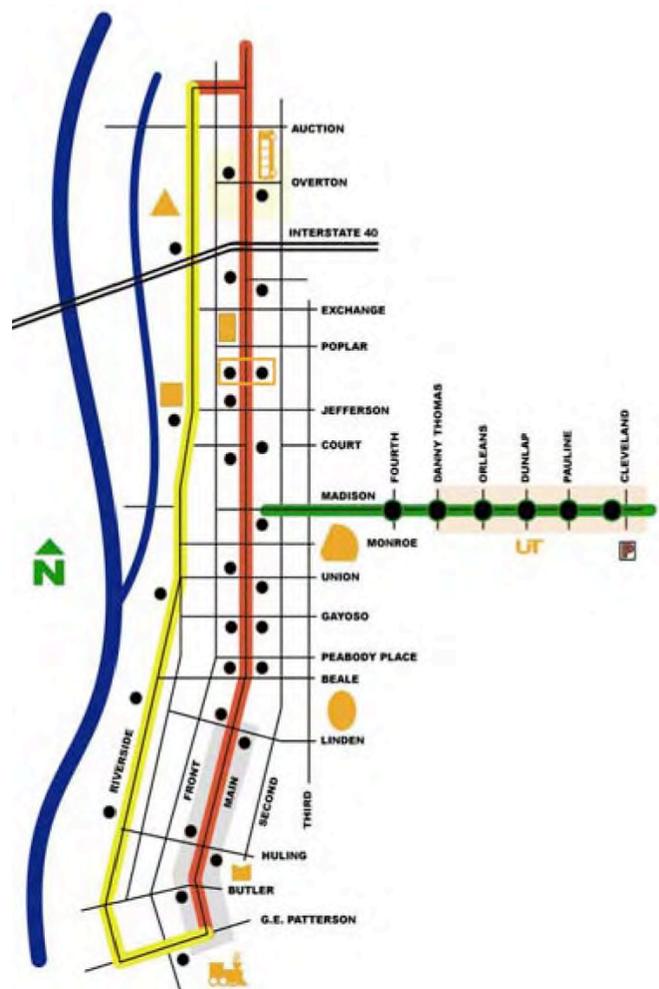


allocating assessments to properties in a special assessment district on a per square foot of land, distance from station, lineal foot, or some other physical relationship, this LID assessment approach values the “before” and “after” values of each property within the pre-determined LID zone (see map). However, the methodology cited in the report does not actually spell out how the transit improvements were applied to value each parcel. The report notes that most parcels were valued “vacant, as is” for the “before” estimate, and to a highest and best use value based on comparables and income approach for the “after” series. The Final Special Benefits Study found that in the aggregate, the “before” value of all properties in the LID Zone totaled \$5.385 billion, and the “after” aggregate value was \$5.454 billion, for a “special benefit” value difference of \$68.4 million. Since the City of Seattle was seeking to assess a total of \$25.7 million through the LID assessment process, it would be capturing 38 percent of the “special benefits” value indicated (e.g., difference in before and after property values).

In essence, this appraisal concludes that the value premium due to fixed guideway transit is roughly 1.3 percent of the baseline aggregate value, assuming properties would not otherwise increase without fixed guideway transit.

## Memphis Streetcar

The Memphis Area Transit Authority (MATA) began streetcar service, known as the MATA Trolley, on a newly-built 2.5-mile line, with a combination of single- and double-track segments, along Main Street in April, 1993. This segment runs parallel to the Mississippi River through the historic core of the City’s downtown. The streetcar project was intended to attract visitors and “casual” riders not utilizing existing bus service, as well as catalyze ongoing City initiatives to redevelop underutilized properties near downtown. In the late 1990s, the 2.4-mile Riverfront Loop opened, nearly doubling MATA’s streetcar route-mileage and contributing to the City’s waterfront revitalization efforts. In early 2003, MATA’s third streetcar route opened along Madison Street. This section intersects, but runs perpendicular to, the Main Street & Riverfront lines. A little more than two miles long, the Madison Street route runs through downtown Memphis and connects the central business district with the largely redeveloped riverfront district.



All streetcars in service along MATA's seven route-miles are refurbished historic (or "heritage") trolley cars. Most are originally from Porto, Portugal, and several others originally served Melbourne, Australia. Trolleys run seven days per week, 10 to 12 minutes apart during weekday commute times, and at 20 to 25 minute intervals during evening/weekend service. The entire MATA trolley system averaged roughly 3,200 riders per day in mid-2008.

The MATA Trolley system serves as a useful case study of value premiums related to streetcar service for several reasons. The system is well-established, originally opening 15 years ago and expanding twice since then. This allows time for ridership to stabilize, as well as provides a longer period to track property values. In addition the Memphis system operates on seven-day-per-week schedule, with headways comparable to urban bus routes.

### ***Analysis of Value Premium for Streetcar Line***

For the Memphis Streetcar system, BAE was able to conduct original research and analysis of property value changes along the Madison Avenue line, with full data available "before" and "after" streetcar service was initiated.

The analysis compared tax appraisal data for residential and commercial uses drawn from the Shelby County (TN) Assessor's Office for the tax years 2002 and 2008 for properties within one-quarter mile of all stops along the Madison Street line to determine change in property values over time. The analysis used geographic information system (GIS) tools to isolate those parcels within the defined distance of one-quarter mile from stops along the line. Since the Madison Street line opened in 2003, this data analysis compared the "before" values to "after" values along the streetcar line, compared to the citywide data for the same time period. It is important to note that the data analyzed was for appraised values, as determined by the Shelby County Assessor's Office, rather than assessed values. All properties in the City are appraised at their fair market value, but assessed values can vary based upon land use type (residential, commercial, industrial, agricultural). In addition, many properties are exempt from tax assessment (i.e., institutional, religious, and government properties).

It is also important to note that the one-quarter mile distance from each Madison Street line streetcar stops limited the scope of the analysis to only those parcels within easy walking distance of the streetcar, excluding most of the nearby waterfront parcels undergoing value increases as well, but not associated with streetcar accessibility at that time.

As shown in the table below, residential properties near the Madison Street route increased in aggregate value over 780 percent for the period between 2002, before the streetcar opening, and 2008. Over the same period for the City as a whole, taxable residential properties rose just 24 percent, resulting in a potential premium in value attributable, at least in part, to the location near the streetcar. This dramatic difference between the Madison Street route and the City overall also reflects a substantial urban condominium building boom at that time. Existing commercial structures near the Madison Street stops, in contrast, did not experience dramatic increase in

property value per the County’s appraisals; these existing structures actually *decreased* in appraised value from 2002 to 2008, while similar properties citywide rose 17 percent<sup>8</sup>. However, when just vacant, commercially-zoned lands were analyzed, the Madison Street route experienced substantial value rises on the order of 70 percent for the period.

**Table 5: Property Value Increases Along Madison Street Route (1/4 mile from Stops)**

	# of Parcels	Aggregate Appraised Value (Millions of \$)		% Change	Total Value Premium
		2002	2008		
<b>Residential Structures</b>					
City of Memphis	175,698	\$ 14,963	\$ 18,485	23.5%	
Qtr-Mile from Madison St Rte	458	\$ 9	\$ 83	783.7%	760.2%
<b>Commercial Structures</b>					
City of Memphis	8,555	\$ 4,172	\$ 4,892	17.3%	
Qtr-Mile from Madison St Rte	493	\$ 280	\$ 258	-7.8%	-25.1%
<b>Commercial Land</b>					
City of Memphis	1,763	\$ 155	\$ 178	14.9%	
Qtr-Mile from Madison St Rte	54	\$ 3	\$ 5	70.1%	55.2%

Source: Shelby County Assessor; BAE, 2008.

In summary, similarly to other studies of transit-oriented value premiums, downtown Memphis along the Madison Street route shows varying results; residential properties as well as vacant commercially-zoned lands experienced substantial increases in value before and after streetcar service. However, existing commercial structures appear to have declined in value, opposite modest citywide increases during the same period. Since these findings are based on County appraisals, rather than actual land sales, the data may reflect other factors affecting assumptions about commercial structures’ values during the period.

## Charlotte’s Light Rail Experience

Finally, a special analysis of Charlotte’s own value premium experience was undertaken for this report. A local appraisal firm, Integra Associates, was commissioned to study the increase in land values along the LYNX Blue Line, which opened in 2007.

The LYNX Blue Line Light Rail is a 15-station corridor that parallels South Boulevard (NC Highway 521) starting at 7th Street on the northeastern side of the Charlotte Central Business District (CBD) and moving southwest approximately 9.5 miles to the intersection of Interstate 485

<sup>8</sup> It should be noted that the Madison Street route contains 451 tax exempt parcels out of 1,699 parcels within one quarter mile of the Madison Street Trolley. These include five hospitals and the University of Tennessee biomedical research campus. Tax exempt parcels cover 56 percent of the area’s total acreage, compared to 30 percent of citywide acreage classified as tax exempt.

and South Boulevard. This popularity of Charlotte’s vintage trolley that runs along a portion of this route helped stimulate interest in light rail, and the trolley still operates on weekends.

Integra’s analysis identified a total of 65 land sales along this corridor during the period between 2002 and 2008, including 11 paired sales (sale and resale of the same property). These paired sales were specifically analyzed to determine the various levels of appreciation along the light rail corridor, including accounting for changes in zoning to allow for higher density development.

The analysis found that the annualized percentage change in value for sales with zoning changes ranged from 36.8 at the New Bern Ave Station, to 143.1 percent at the Arrowood Station. The two pairs without zoning changes ranged from 5.1 percent at the Woodlawn Station, to 16.6 percent at the East/West Boulevard Station.

**Table 6: LYNX Blue-Line Rail Corridor Comparable Sales Data (2002-2008)**

<b>Total Number of Land Sales</b>	<b>65</b>
Size of Land Sales	0.06 to 48.53 acres
Price Range	\$1.49 to \$189.04/square foot
Highest Concentration of Sales (30 sales)	Between Stations 7 and 8
Lowest Concentration of Sales (1 sale)	Station 1
<b>Total Number of Paired Sales</b>	<b>11</b>
Number of Paired Sales with change in zoning:	9
Annualized Change In Value	36.8 % (Station 8) to 143.1% (Station 13)
Avg Annualized Change In Value	72.6%
Number of Paired Sales - No change in zoning	2
Annualized Change In Value	5.09% (Station 10) to 16.61% (Station7)

Source: Integra Realty, 2008.

The increase in values indicated by these paired sales was not compared to overall appreciation rates for property in Charlotte during the same time period, due to lack of available indices for commercial property values in Charlotte.

These LYNX Blue Line has also experienced substantial increases in development activity. According to an August, 2008 analysis prepared by the City, Transit Oriented Development Projects from the South End to Scaleybark, including completed, under construction, and proposed projects total 4,889 residential units; 552,213 square feet of retail space; and 643,390 square feet of office space.

## Charlotte Stakeholder Interviews for Proposed Streetcar Route

For this study, numerous local real estate developers, major property owners, and real estate brokers were interviewed to assess local interest in the streetcar, and obtain opinions about the proposed streetcar line's relationship to economic development, as well as its ability to stimulate value premiums in the local marketplace. A list of stakeholders interviewed for this Study is included in Appendix A. The following points were made by one or more interviewees:

- The experience on South Boulevard has created “believers” in fixed guideway transit and the value that may accrue to transit-oriented properties
  - Entitlements that come with transit are attractive to developers
  - However, several developers cautioned that transit is an amenity, but it does not alone create market demand
- The streetcar is critical to the east/west corridor's economic development
  - Without fixed guideway transit, the eastside is not competitive with NoDa and South End
  - The streetcar is desirable due to frequent stops, ability to transport residents downtown and across town
- Stakeholders interviewed identified specific parcels with the potential for denser development / redevelopment which the stakeholder believed would be catalyzed by the streetcar
  - JCSU hopes the streetcar stimulates development along Beatties Ford Road (student housing, bowling, restaurants, bookstore, etc.). The corridor needs more housing, not just for students
  - Several property owners paid higher prices for land along streetcar route (up to \$50 per square foot of land); some were concerned about delay of streetcar on development plans and prices paid
  - Transit will affect ability of planned projects to attract debt and equity investors
  - Barnhardt Manufacturing does not foresee redevelopment unless streetcar is built
- Support was expressed by property owners for both TIF and an MSD
- There is an expectation that Gold Rush line replacement by streetcar will continue a fare-free zone
- Some stakeholders were opposed to LID (educational institutions, hospitals)

In summary the stakeholder interviewees expressed strong support for the proposed streetcar, with the view that this transit improvement would bring renewed vitality, economic development, and increased demand for development products to the east/west corridor.

## Summary of Case Studies

The case studies of Portland, Seattle, Memphis, and Charlotte's own recent experiences highlight several key points.

### ***Value Premiums for Existing Tax Base***

As demonstrated throughout the literature and in the case studies above, the premium for property values located near transit can vary substantially from one location to another, as well as over time along the same route as it is extended. In Portland, the use of a Local Improvement District (LID) and other value-based financing tools to finance portions of each streetcar segment appears to bear out that capturing this value premium is workable. In Seattle, it is too early to ascertain this trend, while in Memphis the findings are a bit more varied. Charlotte itself, along the Blue Line, appears to have experience substantial value increases, although it should be noted that it is difficult to separate out the additional value created by new, higher density zoning from otherwise similar "before" and "after" transit system situations.

### ***Catalyst for New Development***

Here the picture will depend on the overall economic situation as well as a host of other non-transit related factors. In Portland, the streetcar route is credited with stimulating the revival of the Pearl District, and the data collected there does seem to bear this out. However, the Pearl District was already underway as a new urban neighborhood, and had attracted substantial private investment capital prior to the streetcar initiation (and much as in Seattle, these private developers actually encouraged the construction of the streetcar to enhance their projects' market position).

Interviews conducted with developers in Charlotte further indicate this same trend. Developers who had decided to invest along the proposed streetcar route attribute the streetcar with attracting their capital investment, but also mention in some cases, that the corresponding increases in zoning/entitlements drew their attention. Separating out the two factors is quite difficult in this case. Indeed, there may be some potential developers or land owners who see the streetcar as a "silver bullet" that makes otherwise relatively modest local markets come alive. While this may be true in a city like Charlotte, with dynamic overall growth and extensive planned transit service, it is not clear that the competitive advantages of the proposed streetcar route alone would elevate these local markets to the level of marketability desired by project proponents, especially in the next few years as the overall economy slows and capital dollars are limited.

As a final note, however, so much of market demand and attraction of private capital is driven by perceptions of competitive advantage. The streetcar route in Charlotte is perceived to be a development catalyst by those developers who the City asked the report authors to interview. While this may be driven more by individual investment decisions speculating on the "next big thing," the increasing need for more efficient patterns of land use made possible by transit service may well extend and reinforce this initial perception in the future.

# Overview of Charlotte Streetcar System

## Description of Proposed System and Corridor

The proposed Charlotte streetcar system would span an approximately 10 miles length in a generally east/west direction. The proposed route would have its western terminus at the existing Rosa Parks Transit Center located just north of Interstate-85 on Beatties Ford Road. From there it would proceed southerly along Beatties Ford Road, continue southeasterly as it turns on to Trade Street through Downtown, on to Elizabeth Street, turn northeasterly along Hawthorne Lane past Central Avenue, then loop back to Central Avenue moving east. The eastern terminus of the proposed route would be located at the Eastland Mall site, currently undergoing initiatives for redevelopment.

The streetcar system would replace existing bus service and provide significant increases in capacity. It would consist of double tracks, one for each direction, set in the public street right-of-way and sharing access with other vehicles. The proposed streetcar system would run on 7.5 minute to 10 minute headways during daytime hours, and up to 15 minute headways off-peak, with operations from 18 to 20 hours per day, depending on day of week. Travel time from either end to Downtown would run between 20 to 25 minutes, and peak daily boardings are estimated to run as high as 9,000 to 16,000 persons per day by 2030. Streetcar stops will consist of widened sidewalks directly adjacent to where the streetcar would stop.

A separate project, the proposed future West Corridor transit service from Downtown to the Charlotte Douglas International Airport, is considering use of streetcars as well as bus rapid transit.

The focus of this Study is on the corridor that lies within  $\frac{1}{4}$  mile of either side of the proposed Beatties Ford Road to Eastland Mall streetcar route. This corresponds to an approximately five to ten minute walk from a streetcar stop to the edge of the corridor, a distance that numerous studies and experience has shown is the area likeliest to support streetcar-oriented development<sup>9</sup>. Streetcar-oriented development is denser mixed-use infill development designed to interact with the access provided by fixed guideway transit, attracting residents, workers, shoppers, and others interested in the mobility benefits provided by nearby transit.

## Existing Streetcar Corridor Development by Segment

The proposed streetcar route spans numerous neighborhoods with substantial variations in existing development patterns, current market conditions, and future development potential. For the

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<sup>9</sup> Streetcar-oriented development is used here in lieu of the more common phrase Transit-Oriented Development (TOD) used in transit literature since TOD in Charlotte has a specific definition and applicable zoning that would not apply to the proposed streetcar corridor and future development along it. Where “TOD” is used elsewhere in this Study it generally refers to all types of mixed-use infill development along fixed guideway transit rather than Charlotte’s specific definition.

purposes of this Study, the streetcar route has been broken into four segments that define subareas with distinct characteristics and local real estate markets as follows:

1. **West Segment.** This segment corresponds to the ¼ mile area on either side of the streetcar route from the Rosa Parks Place Community Transit Center, along Beatties Ford Road and West Trade Street to Interstate-77. It includes traditionally African-American neighborhoods and passes Johnson C. Smith University, a historically African-American university that has evolved into a leading private liberal arts college. The segment includes neighborhoods close to Downtown with increasing rehabilitation of historic housing, as well as new development in areas such as Wesley Heights. North of the Brookshire Freeway, various types of older auto-oriented retail strip as well as other development in varying conditions line Beatties Ford Road, with residential neighborhoods behind the commercial frontage. Many residents are interested in expanded retail choices in this area.
2. **Downtown Segment.** This segment consists of the ¼ mile area on either side of Trade Street between Interstate-77 and Interstate-277, the proposed streetcar route through Downtown. This segment lies within Charlotte's Central Business District, and includes the Bank of America Corporate Center, Johnson & Wales University, City and County government centers, the Time Warner Cable Arena, the Charlotte Transportation Center and future Gateway Transit Station that provide connections to multiple other modes of transportation, and numerous other public and private office buildings, hotels, and other services. The Downtown area has experienced tremendous growth over the past decade that is expected to continue with recovery from the current economic recession.
3. **Midtown Segment.** This segment consists of the ¼ mile area on either side of Elizabeth Street west of Interstate-277, Hawthorne Lane northeast of Elizabeth Street, the Barnhardt Manufacturing Company site over to Clement Avenue, and Central Avenue to Briar Creek (this route avoids a new grade separation from the CSX rail line in this area). The Midtown segment includes Central Piedmont Community College and Presbyterian Hospital. Elizabeth Avenue and Hawthorne Lane are experiencing active development of mixed-use and midrise development. The area between Hawthorne Lane and The Plaza includes numerous large commercial developments with pending development plans, while the Plaza Central Business District, a unique neighborhood retail district abuts attractive historic residential neighborhoods. This area includes the large Morningside LLC housing development currently under construction.
4. **East Segment.** This segment consists of the ¼ mile area on either side of Central Avenue from Briar Creek to the eastern terminus of the proposed streetcar route at the future Eastland Community Transit Center at the Eastland Mall site. This segment of Central Avenue includes small-scale older commercial buildings with extensive auto-related retail and service businesses and numerous ethnic eateries, along with numerous multifamily developments. A larger retail center at the southwest corner of Eastway Drive and Central Avenue is struggling to retain retail uses, and Eastland Mall is a declining older mall for which the City is currently considering alternative redevelopment schemes. Beyond Central Avenue, the area includes single-family residential neighborhoods, along with some multifamily residential development.

South of this segment, revitalization planning is underway in anticipation of anticipated future fixed guideway transit along Independence Boulevard.

Each segment of the streetcar corridor lies within a distinct market area for residential and commercial real estate. These areas were defined to correspond to available data sources for real estate market information as well as boundaries for demographic projection data published by the Centralina Council of Governments. Figure 4 on the next page shows the proposed streetcar route and stations, and the local market area that has been defined for each segment for this Study.

## Planning Context<sup>10</sup>

The City of Charlotte's Draft *Centers, Corridors, and Wedges Growth Framework* (September 2008) lays out the City's proposed focus on how growth and development should occur in Charlotte now and in the future, by encouraging the most growth in the "Centers and Corridors" with supporting infrastructure and capacity, leaving lower density development in the large residential "Wedges" between Corridors. Four of the Corridors are planned or proposed to have a Charlotte Area Transit System (CATS) LYNX line providing rapid transit service, with the Blue Line along the South Corridor already in service.

The need for such a strategic framework arises because growth has been a central issue for Charlotte for many years and will continue to be in the future. Charlotte's population more than doubled between 1980 and 2008, increasing from 315,000 to 697,000 persons. This growth stems from Charlotte's strong economy and high quality of life: Charlotte is the nation's second largest banking center, ranked first among industrial hubs in the Southeast, and is the sixth largest wholesale center nationwide. More than half of Fortune 500 firms are represented in the Charlotte region. This growth is expected to continue; in the next 25 years Charlotte will add an estimated 287,000 residents and 318,000 new jobs.

The Centers, Corridors and Wedges Growth Framework provides guidance for refinements to other plans, policies, and ordinances that will help accommodate growth by:

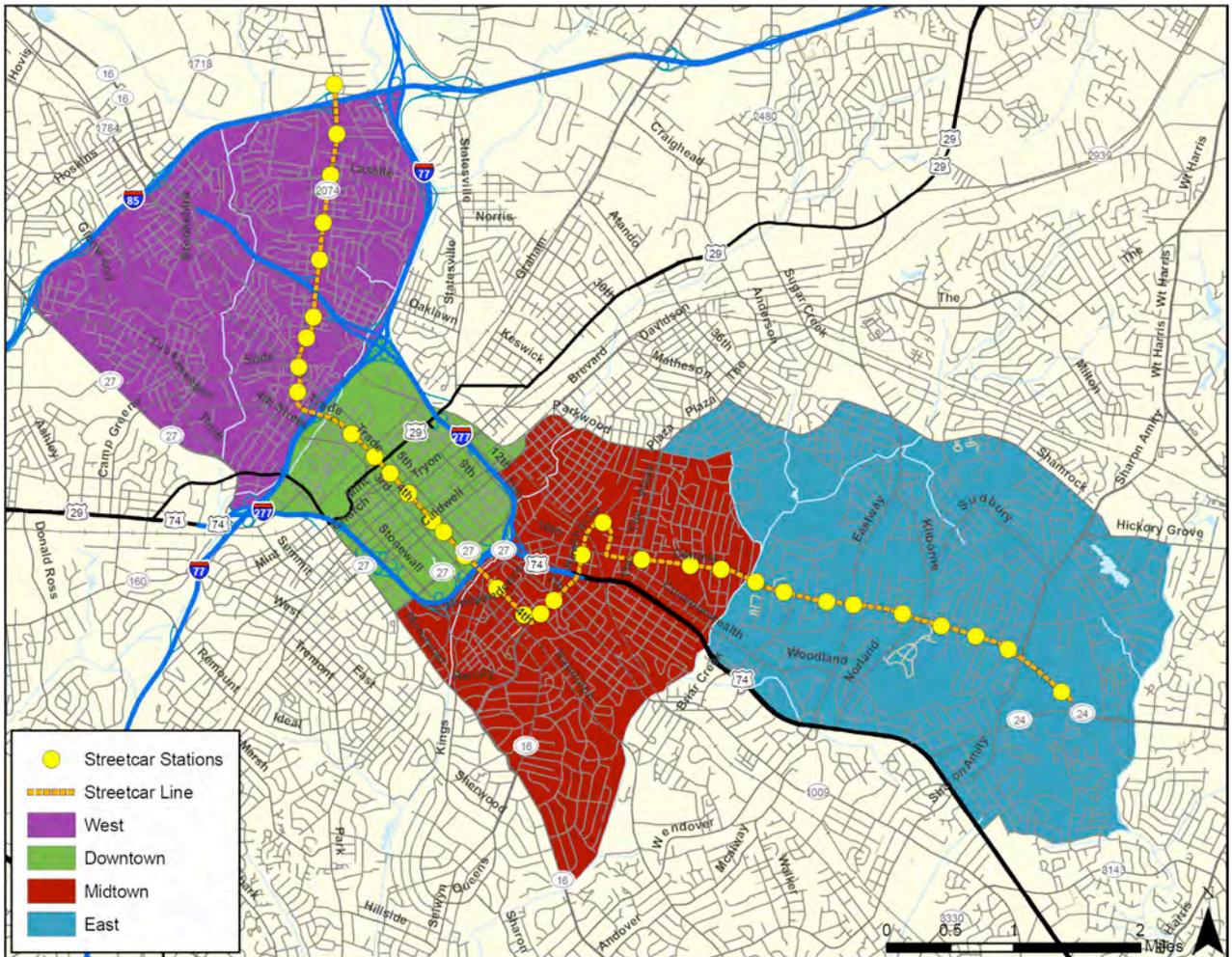
- Supporting a variety of housing choices at appropriate locations;
- Providing guidance to better match development types and intensities with infrastructure, particularly transportation facilities;
- Emphasizing quality design and the importance of environmental considerations;
- Recognizing redevelopment as a key part of accommodating future growth, particularly in Centers and Corridors; and
- Encouraging a variety of transportation choices.

These guidelines organize Charlotte's growth and development in a transit-oriented manner, which will be augmented by the construction of the streetcar system.

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<sup>10</sup> This section borrows extensively from Charlotte-Mecklenburg Planning Department publications and website.

**Figure 3: Proposed Streetcar Route and Local Market Areas**



Source: Warren & Associates.

***Streetcar Corridor and Centers, Corridors, and Wedges***

The proposed route of the Charlotte Streetcar connects several Activity Centers and Corridors. Its western terminus at the Rosa Parks Place Community Transit Center is located within approximately one-quarter mile from the eastern edge of a sizable designated industrial center area. The route provides a direct connection from there to the Center City, although its route along Beatties Ford Road is designated as a Wedge area. East of the Center City, the proposed route runs through the Southeast Corridor until it reaches Briar Creek Road; from there it continues east and provides a connection to the Eastland mixed use center area designated around Central Avenue and Albemarle Road.

### **Area Plan Context**

The Planning Department prepares Area Plans to guide growth and development in smaller areas of the City, consistent with the vision for the City. These plans typically address: land use and zoning; transportation; environment; infrastructure; economic development/revitalization; community appearance and urban design; and safety. Much, but not all, of the proposed Streetcar Corridor has been the subject of Area and other plans most adopted since 2000, including<sup>11</sup>:

- Belmont Area Revitalization
- Briar Creek/Woodland/Merry Oaks
- Center City 2010
- Eastland
- Plaza Central Pedscape
- Second Ward Neighborhood Master Plan
- Sunnyside Pedscape and Land Use
- Third Ward Neighborhood Vision
- West End Pedscape

The Area Plans already provide for land uses and zoning on portions of the proposed streetcar corridor to allow more intensive residential and mixed-use development that would benefit from the streetcar as an urban amenity, and in turn could help generate increased ridership for it. One of the most significant provisions to implement these area plans is the application of the Pedestrian Overlay District (PED), Transit Supportive Overlay District (TS), and other urban zoning to extensive portions of the streetcar corridor, as shown in Figure 4 on the next page.

PED and Transit Supportive Overlay District zoning standards, along with other zoning code provisions, encourage high quality design, mixed use development, the use of public transit, and development, which complements adjacent neighborhoods. Specific zoning provisions for PED and Transit Supportive Overlay Districts to promote moderate intensity development include: increases in height limits above the base 40 foot height limit at the ratio of one foot in height for each ten feet of distance from adjacent residential uses; allowance for up to a maximum height of 100 to 120 feet (depending on the specific zoning); no maximum Floor Area Ratio<sup>12</sup>; reduced setback and side yard requirements; decreased parking requirements, and in some cases limits on how much parking is allowed; and flexibility in meeting parking requirements through on-street parking or parking on adjacent properties.

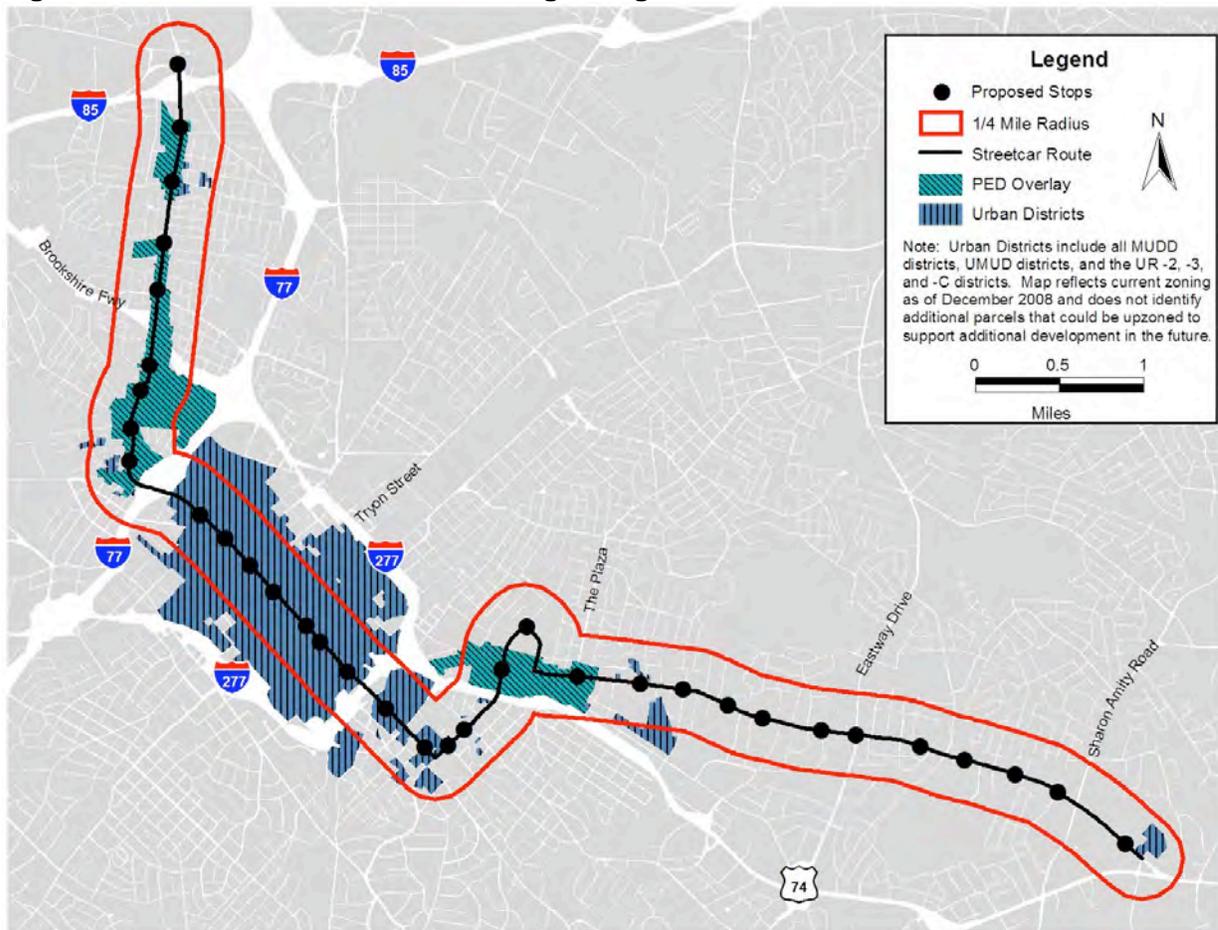
The adoption of the Area Plans and application of the PED and Transit Supportive Overlay District zoning has significantly increased the amount of development that could potentially occur along much of the proposed streetcar corridor, both in the City Center area as well as in the segments outside of it.

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<sup>11</sup> Remaining areas of the streetcar corridor not included in the above plans are addressed in Central District and East District Plans.

<sup>12</sup> Floor Area Ratio is the ratio of total square footage of a structure to the area of the site it sits upon.

**Figure 4: PED and Urban District Zoning Along Streetcar Corridor as of 2008**



# Charlotte Streetcar Corridor Development Scenarios

In order to forecast potential revenues from property-based funding mechanisms, a thorough assessment of potential development along the streetcar corridor was undertaken for this report.

The four segments of the streetcar corridor represent distinct existing market areas, with varying characteristics. The West and East segments are older, established neighborhoods with older auto-oriented commercial strip development along the streetcar corridor, and moderate amounts of new infill residential development. Midtown is experiencing strong development interest in the stretch from Elizabeth Avenue, up through Hawthorne Lane to where it meets Central Avenue, with extensive plans for large scale new mixed-use development and a first round of projects under construction. Downtown uniquely serves as the region's hub for corporate offices, government, cultural and entertainment activities and continues to experience transformational development with numerous high rises.

## Methodologies for Projecting Future Development

This changing picture of each segment of the streetcar's route, and the ability of the streetcar to affect market demand and the pace of redevelopment/infill development activity, is difficult to forecast. It is rendered even more challenging against the backdrop of the recent economic downturn, which has started to impact Charlotte's overall real estate market and development.

There are several key approaches to estimating future development activity over the long term, as follows:

- **Local Historical Trends.** Overall development trends during the current decade can be extrapolated in the future to project potential development activity. This approach is well suited to areas such as Downtown that have experienced strong development activity during this decade. However, this approach could underestimate development potential for the streetcar segments outside of Downtown that have only seen significant increases in development in the last couple years, as these areas have been able to attract greater interest from developers, businesses, and residents. This approach, with adjustments, was used to project future development for a "No Streetcar" scenario without the proposed streetcar (i.e. a "no build" scenario).
- **Potential Development Based on Land and Zoning Capacity.** This method of forecasting the development that could occur along a new fixed guideway transit corridor takes the approach that at the outside, fixed guideway transit will stimulate as much new development as the zoning capacity will allow. The Draft *Centers, Corridors, and Wedges Growth Framework*, along with the Area Plans and District Plans applicable to the proposed streetcar corridor, and the associated zoning, allows evaluation on a parcel by parcel basis of development potential. This evaluation, combined with an assessment of which parcels are

likely to be developed or redeveloped in a given period, can be used to project potential development activity. This approach was not used because, as discussed in the following pages, all potential development scenarios for the proposed streetcar corridor would result in less development than is allowed based on current zoning<sup>13</sup>.

- **Transportation Planning Forecasts with Market Adjustments.** Another approach is to start with long-term growth projections that are prepared by the regional council of government for transportation improvement planning. These projections typically use demographic and economic forecasting techniques to identify long-term growth, and then allocate it down to city and small scale Transportation Analysis Zones (TAZ) based on existing plans, policies, and other directions. These projections are not directly market-based, and as such do not specifically call out near-term business cycles or rapidly redeveloping locations, but do forecast a potential distribution of growth for a long-term period, and are used to plan for infrastructure and other major capital improvement projects. This approach was used to develop the “baseline” development scenario for the Charlotte Streetcar Property Value-Based Funding described in the following pages.
- **Accelerated Market Share of Regional Growth.** A fourth approach is to estimate a capture rate for a small area, such as the proposed streetcar corridor, of a share of a larger regional growth forecast. This approach allows for adjustments to reflect changes in the attractiveness of a small area or corridor, vis-à-vis a larger region. It can account for the process of “redistributing” new growth in households and jobs, to follow the shifts in policy and market conditions as central city areas revitalize. This approach was used to formulate the “accelerated” development scenario used in this report.

For this Study, all of the above approaches described above were used to formulate development scenarios and forecasts of potential property value-based funding sources. A process of assessing development capacity based on identifying underutilized sites, estimating development potential based on zoning, and totaling the results to describe corridor capacity give an “outside” estimate of what could happen on the corridor over the long term.

Using a more calibrated approach, the transportation planning estimates available for TAZs encompassed by the corridor’s market segments were then also analyzed, and these were utilized to form the basis for a “baseline” development scenario incorporating further adjustments for market demand and the near-term economic downturn.

In addition to the baseline scenario, an “accelerated” scenario was formulated, which increased the market share of regional growth to further accommodate potential market responses to the streetcar service and its associated amenities.

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<sup>13</sup> Many cities’ zoning often provides for more development than the market can be expected to demand in order to ensure sufficient availability of development sites (since not all property owners wish to sell or develop), and to attract development in targeted areas.

## Land Capacity for Infill Development

The streetcar corridor lies entirely within an already developed urban area, with no undeveloped “greenfield” sites. This means that properties within the corridor already have access to roads, utilities, and other infrastructure, and much of the corridor already has priority for further infrastructure investment under the City’s Centers, Corridors, and Wedges Framework. Many properties have PED or other zoning that permits development intensification of use.

This helps create substantial potential for redevelopment and new infill development at numerous sites along the streetcar corridor, driven by factors such as:

- Redevelopment of functionally obsolete properties whose zoning now permits significantly denser development, e.g., properties that have been “upzoned”;
- New development on properties with surplus land, i.e. more land than is needed pursuant to the zoning code for existing improvements and are thus “underimproved”;
- Redevelopment or new development in areas that become attractive to a broader range of residents and businesses because of changes in perceptions and markets, i.e. “gentrification”.

Even though these and other factors may create significant development potential in an area, the potential for development alone does not necessarily mean that all or even many properties will redevelop, even in the long term. Key factors potentially shaping the pace of redevelopment of existing properties, *in addition* to real estate market fundamentals and owner expectations on property value, include:

- **Size of Available Parcels.** Areas with numerous small parcels requiring land assembly into parcels sizes sufficient to provide attractive development opportunities, will likely experience less development. This is because land assembly is complicated, time-consuming, and risky, limiting the interest by developers to undertake the process in many cases. At the same time, small-parcel constraints can create an opportunity for a public agency to undertake land assembly, typically on the basis of working only with willing sellers.
- **Existing Owner Objectives.** Existing property owners may simply be satisfied with their properties as is, particularly if they have recently made improvements. Existing multi-tenant properties may be generating enough cash flow that owners are not motivated to take on the risks inherent in redevelopment, the potential increase in value is too small, or owners may lack the knowledge of how to do development but are unwilling to sell. Elderly owners may be more focused on estate and tax planning considerations than maximizing property value.
- **Existing or Adjacent Residential Uses.** Areas with extensive single-family, townhouse, or condominium developments occupied by owners present an almost insurmountable land assembly challenge. Most cities find it inappropriate and politically infeasible, absent extraordinary circumstances, to use eminent domain powers to assemble land for economic development purposes (and North Carolina law expressly prohibits this). Adjacent

homeowners are often extremely concerned about impacts on their property value from new development, and may oppose new denser development, and significantly slow down the planning approval process or discourage developers from undertaking projects that may generate opposition.

- **Development Constraints.** There are a range of development issues that may be complicated and expensive to resolve, further constraining new development of infill sites. These can include a need for environmental remediation (e.g., brownfields); a need for substantial infrastructure improvements, particularly if required at a scale that benefits the larger area; and complex permitting and entitlement processes. Many property owners lack the technical knowledge, financial wherewithal, or are not able to assemble the multi-disciplinary teams needed to successfully resolve these issues – but are not willing to sell at a discounted price that would allow another party with greater capabilities to do so.

While infill development is often more complex than greenfield projects in outlying undeveloped areas, it can also be more attractive to developers because of the increasingly higher premiums that residents and businesses place on convenient locations close to Downtown areas. Existing closer-in locations, particularly in well-built older areas and historic districts with unique characters, can attract residents and businesses who increasingly place a premium on quality of place and seek neighborhoods and locations that offer a unique and engaging environment.

#### ***Estimate of Infill Potential Using Improvement-to-Land Ratios***

One method for quickly identifying those sites that are currently underutilized and may be stimulated to redevelop with the construction of a streetcar route is to compare the ratio of improvements (e.g., buildings) to land values (also known as I:L ratio). In cases where the value of a building is less than the land it sits on (e.g., a ratio of improvements to land is less than 1:1), this suggests that the building may be at the end of its economic life, or the site may be under-improved, presenting opportunities to develop the land to a higher and better use.

BAE used the City's GIS layers and current tax assessor's data for the Streetcar Corridor, to conduct an initial screening of all sites' improvement-to-land ratios to identify all parcels within the Streetcar Corridor where land had a greater value than the buildings on it. The complete corridor, including the identified parcels, was then extensively reviewed in an iterative process involving BAE, Warren & Associates, and City staff to integrate knowledge of existing conditions, property owner plans and objectives, planned and proposed development, existing land uses and zoning entitlements, and other site factors affecting development.

Following an initial identification of potential underutilized sites along the corridor which could attract redevelopment and new investment based on the I:L ratios, the identified sites were further screened to eliminate properties owned by institutions and non-profit organizations, small sites that would be difficult to assemble into developable parcels, and sites that could create conflicts over appropriate use or development due to adjacency with established residential areas.

Based on locations and characteristics, remaining sites were then sorted into two tiers:

- **Tier 1** - those sites with the greatest potential for infill development over the next 25 years; and
- **Tier 2** – sites with long-term potential for infill development, but likely further than the next 25 years.

Existing zoning was then reviewed for the Tier 1 and Tier 2 sites. The segments of the streetcar corridors have a range of residential and commercial zoning, as well as mixed-use development zoning. Of particular significance is the Pedestrian Overlay District (PED) zoning that allows considerably denser development, as explained in the previous section.

Various transit-oriented development projects that have been built along the LYNX Blue Line, or near the streetcar corridor, were evaluated to identify the types and densities of development that could be accommodated on sites based on height limits, allowed densities, and other regulations. These prototype projects used to identify potential types of residential and mixed-use development along the streetcar corridor are shown in Appendix B.

A factor affecting potential development quantities is the size and density of units within individual projects. Charlotte has historically been a low-density city, and multifamily residential development has tended to feature units that are considerably larger than those in more urbanized cities. This means that a given building envelope allowed by the zoning code will result in fewer units, and thus lower density. However, as land values increase for sites served by fixed guideway transit and due to neighborhood revitalization, it should be expected that in the medium- and longer-term units sizes in Charlotte multifamily developments will become more comparable to those in other cities. This would occur as higher land values motivate developers to build smaller units so that more units and thus greater density can be achieved within allowable building envelopes.

GIS tools were used to calculate potential development that could be accommodated on various parcels, based on allowable densities, FAR, and the types of prototype streetcar-oriented development that could be accommodated within the regulations. The analysis included calculation of height planes to determine allowable heights in overlay districts and urban zoned areas that are adjacent to residential uses. This approach to estimating development potential, while not as precise as specific site planning, does provide a useful initial assessment.

The analysis considered residential in all segments of the streetcar corridor, including Downtown. However, for commercial uses, the Downtown area was excluded because existing zoning provides few limits on the size of such development. The office market for Downtown is a regional-serving market, and is thus driven by the overall regional economy and activities of major corporate tenants, unlike that in the other segments that will be oriented more towards local areas.

The findings from this analysis include:

- The Tier 1 sites have the potential to accommodate anywhere from 10,000 to 20,000 new dwelling units along the entire streetcar corridor over the next 25 years. This range reflects differing assumptions about the densities of units that would be built.
- Aside from Downtown, the Tier 1 sites could accommodate anywhere from 500,000 to one million square feet or more of all types of commercial uses, including office and retail. The variation reflects how commercial development potential is affected by whether other development is solely residential, or part of a mix of uses that includes commercial. The range is also affected by the range of residential unit sizes cited above, because additional units would support some additional retail space.
- For the longer-term, beyond 25 years, the Tier 2 sites could support an *additional* 5,000 to 10,000 new dwelling units throughout the streetcar corridor, along with an additional 200,000 to 400,000 square feet of all types of commercial in the streetcar segments excluding Downtown.

These figures represent potential new development that can be accommodated by the streetcar corridor, and demonstrate that there is great potential to urbanize along the corridor and take advantage of the mobility, access, and amenity that streetcar systems provide. It should be noted that numerous existing buildings and residences would be expected to be renovated and improved to take advantage of improved market conditions, but would not add to the total newly developed square footage within various segments of the streetcar corridor.

## **Projected Development - “No Streetcar” Scenario**

Potential development that could be expected along the streetcar corridor if the proposed streetcar is not built – a “No Build” or “No Streetcar” Scenario – was estimated in order to allow comparison of the “revitalization effects” of the streetcar, as measured in terms of new development and new fiscal revenues for the City from the streetcar corridor.

The beginning point for this analysis is consideration of development absorption along the streetcar corridor during the current decade, from 2000 to the second quarter of 2008, which approximately corresponds to a complete market cycle, along with data on current development activity. Absorption data is preferable because it reflects actual market activity. Historical data was obtained only for residential uses, both because it represents the largest amount of potential development by square footage, and because data for retail and office are not available at geographies that approximate the proposed streetcar corridor and segment boundaries.

Table 7 summarizes absorption and development trends in the local market areas surrounding the proposed streetcar corridor, comparing Downtown which has the most active development market, with the remainder of the proposed streetcar corridor. It is important to note that only a portion of

this local market area activity occurs or would be expected to be captured within ¼ mile of the proposed streetcar corridor; the capture rate could range from 35 percent to 45 percent.

**Table 7: Streetcar Corridor Residential Absorption and Development Trends**

<b>Average Annual Annual Residential Absorption, Dwelling Units, 2000 - 2008</b>			
	<b>Downtown Segment</b>	<b>All Other Segments</b>	<b>Total Corridor</b>
Apartments (Net)	96	65	161
For-Sale (New Construction)	<u>82</u>	<u>68</u>	<u>150</u>
	178	133	311
<b>Units Currently Under Construction as of 4th Quarter 2008</b>			
Apartments	0	319	319
For-Sale	<u>1,291</u>	<u>692</u>	<u>1,983</u>
	1,291	1,011	2,302
<b>Units Proposed as of 4th Quarter 2008</b>			
Apartments	337	1,085	1,422
For-Sale	<u>1,965</u>	<u>876</u>	<u>2,841</u>
	2,302	1,961	4,263
<b>Total - Units Under Construction &amp; Proposed</b>			
Apartments	337	1,404	1,741
For-Sale	<u>3,256</u>	<u>1,568</u>	<u>4,824</u>
	3,593	2,972	6,565

Note: For-Sale units includes condominiums and townhouses

Source: Warren & Associates, 2008.

This data highlights several key points:

- Most of the streetcar corridor during this decade has experienced modest development activity. Applying the above annual absorption rates to the 2010 to 2035 time period, and assuming an average of 40 percent of local market activity would be captured along the streetcar corridor, it would suggest that the market could support less than 3,000 new residential units along the entire streetcar corridor.
- During the last couple years there has been a spike in development activity in the streetcar corridor. This spike most likely represents a combination of a shift in market demand, with greater interest in living in or closer to Downtown, as well as an increase in development activity that often occurs late in market cycles. However, absorption trends suggest that there may be a near-term overbuilding of residential along the streetcar corridor, particularly if the current credit crunch and recession continue.
- The very large number of proposed units reflects strong increases in developer assessment of the market potential of the streetcar area. However, given current economic conditions and the challenges of obtaining project financing, it is likely that a large portion of this proposed development will be postponed until conditions improve, as well as until after the market has shown that it can absorb the higher level of development that is now occurring.

Projections for residential development from 2010 to 2035 in the No Streetcar Scenario would most appropriately be based on current development activity, and assume slightly more than half of currently proposed units are developed. Converting these figures to an annual absorption rate would result in total projected new residential development from 2010 to 2035 in the No Streetcar Scenario of 6,551 multifamily residential units (2,427 for-sale and 4,124 rental).

The retail projection would be based on the same household expenditure methodology used for other scenarios, resulting in 253,295 square feet of net new retail. Without streetcar, the office development in the Downtown area projected for the Baseline Scenario with streetcar would likely be minimally affected, however minimal new office development would be expected in the West and East streetcar segments, resulting in a projection of 3,827,854 square feet of new office space. Hotel development is affected by the decreased employment, and the projection for the streetcar corridor would be 1,003 hotel rooms.

The Downtown segment of the streetcar corridor would capture by far the largest share of all new development, with 56 percent of new residential, and 89 percent of new office development.

## **Projected Development with Streetcar – Baseline Scenario**

This scenario presents what is considered an achievable level of new development along the proposed streetcar corridor, reflecting the ability of streetcar to stimulate additional new development.

The specific methodology for projecting this scenario is as follows (and tables outlining specific figures and adjustment factors for each segment of the streetcar corridor is contained in Appendix A, which is the executive summary of the separate market study prepared by Warren & Associates):

- TAZ data was assembled for each of the local market areas around each of the streetcar segments. The boundaries of these areas was defined based on local market dynamics, and they also correspond to published data sources for home prices and other market information.
- Near-term TAZ estimates 2010 – 2015 for each segment were adjusted to reflect the potential demand in development activity that will occur as a result of the current recession.
- For each segment, based on a review of market trends, the portion of local market area growth that could be captured along the streetcar corridor (the ¼ mile distance from the line itself) was identified. These factors vary from streetcar segment to streetcar segment; for residential they range from approximately 30 percent to 45 percent (see Appendix A for more detail).
- Each segment's share of residential household growth is then allocated between for-sale and rental units. These figures vary between segments, and also over time, with a greater trend towards ownership units in later years. Ownership units represent 35 percent to 50+ percent of units. For sale units are then further distributed between townhouse and condominium units.

- For office uses, Centralina’s estimates of future regional employment by economic sector is converted to an estimate of office-based employment by applying factors that represent the proportion of jobs that are office-based (e.g., professional services is largely office-based, while transportation and utilities has a relatively low proportion of office-based employment). Growth for the local area is then allocated to each segment, and total office space is determined by multiplying those figures by an average of 225 square feet per office worker.
- Retail demand is estimated by using household growth projections and current household incomes in each streetcar corridor segment to estimate household retail spending on local goods and services. An average of \$350<sup>14</sup> per square foot per year for retail sales is used to convert this figure to supportable retail space. This approach may be conservative to the extent that there is “leakage” of local retail sales from existing residents to other areas that could be located in new local retail development.

Total new development from 2010 to 2035 in the Baseline Scenario is projected to consist of 9,460 multifamily residential units (4,117 for-sale and 5,343 rental), a 44 percent increase over the No Streetcar Scenario; 365,723 square feet of net new retail, also 44 percent more than the No Streetcar Scenario; 4,338,849 square feet of new office space, a 13 percent increase over the No Streetcar Scenario; and 1,137 hotel rooms. Downtown captures by far the largest share of new development, with 54 percent of new residential, and 78 percent of new office development.

## **Projected Development with Streetcar – Accelerated Scenario**

This scenario presents more intensive levels of new development along the proposed streetcar corridor than the baseline scenario, corresponding to the proposed streetcar having a stronger catalytic effect for new development. Such a stronger catalytic effect would correspond to the high level of development seen along streetcar corridors in some of the case study cities, as well as Charlotte’s recent experience with TOD along the new LYNX Blue Line.

For the accelerated scenario, additional residential demand was estimated by considering a larger share of regional household growth that the streetcar corridor might capture than estimated in the baseline method. It should be noted, however, that since Charlotte may have five corridors with various types of fixed guideway transit service designated for more intensive development in addition to the streetcar corridor, this limits how much any corridor can accelerate its capture of market growth due to new transit service.

Looking at growth projections for the nine-county region through 2035, it appears unlikely that the streetcar corridor, or any other corridor, could increase its share by more than one percent to two percent. These seemingly small percentage shifts in corridor capture of regional growth can lead to substantial amounts of new housing, office, and retail space development. Therefore, the accelerated scenario assumes that the share of growth of the overall nine-county region increases

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<sup>14</sup> Based on Urban Land Institute *Dollars and Cents of Shopping Centers 2008* for median retail sales in neighborhood shopping centers in the Southern U.S.

0.5%. This amount results in a nearly 20 percent additional increase in residential development in the streetcar corridor above the Baseline Scenario.

Total new development from 2010 to 2035 in the Accelerated Scenario is projected to consist of 11,314 multifamily residential units (4,928 for-sale and 6,386 rental), a 20 percent increase over the Baseline Scenario and 73 percent over the No Streetcar Scenario; 391,109 square feet of net new retail (same proportion increase as residential); 4,488,439 square feet of new office space, a three percent increase over the Baseline Scenario and a 17 percent increase over the No Streetcar Scenario; and 1,176 hotel rooms. Downtown captures by far the largest share of new development, with 47 percent of new residential, and 76 percent of new office development.

The larger amount of development in the Accelerated Scenario, compared to the Baseline Scenario, mostly accrues to the streetcar segments outside Downtown. For multifamily development as compared to the Baseline Scenario, the West Segment would experience a 41 percent increase; the Downtown Segment would experience a five percent increase; the Midtown Segment would experience a 32 percent increase; and the East Segment would experience a 37 percent increase. The lesser increase for Downtown would occur because it is already an active market for development with less unrealized potential for additional development than the other segments.

## Summary of Development Scenarios

The baseline and accelerated scenarios result in the following projections for new residential development in the streetcar corridor from 2010 through 2035: Additional detail for each five year increment per segment, per land use, is including in Appendix D.

**Table 8: Summary of Streetcar Corridor Development Scenarios, 2010 – 2035**

Segment	Amount of New Development														
	No Streetcar (Slower Growth Scenario)					Baseline Growth Scenario					Accelerated Growth Scenario				
	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
West	416	508	12,228	0	0	646	742	17,656	178,762	47	917	1,037	20,545	220,440	58
Downtown	1,294	2,402	150,520	3,393,695	889	2,169	2,896	217,329	3,393,695	889	2,282	3,052	221,940	3,409,258	893
Midtown	468	869	69,729	434,159	114	786	1,002	100,679	434,159	114	1,032	1,331	115,265	488,192	128
East	249	345	20,819	0	0	516	703	30,059	332,233	87	697	966	33,359	370,549	97
Total	2,427	4,124	253,295	3,827,854	1,003	4,117	5,343	365,723	4,338,849	1,137	4,928	6,386	391,109	4,488,439	1,176

Segment	Distribution of New Development by Segment														
	No Streetcar (Slower Growth Scenario)					Baseline Growth Scenario					Accelerated Growth Scenario				
	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt. Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
West	17%	12%	5%	0%	0%	16%	14%	5%	4%	4%	19%	16%	5%	5%	5%
Downtown	53%	58%	59%	89%	89%	53%	54%	59%	78%	78%	46%	48%	57%	76%	76%
Midtown	19%	21%	28%	11%	11%	19%	19%	28%	10%	10%	21%	21%	29%	11%	11%
East	10%	8%	8%	0%	0%	13%	13%	8%	8%	8%	14%	15%	9%	8%	8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: BAE, 2008.

Most of the residential and commercial growth is concentrated in the Downtown area because of its active development market and zoning that allows large scale development, including high rises.

It should be noted that both the Baseline and Accelerated Scenarios represent considerably more growth than would be expected in the streetcar corridor outside of Downtown based on historical trends, as discussed in the section on the No Streetcar Scenario. The Baseline Scenario incorporates the results of a “streetcar effect” that attracts substantial new development that would not otherwise occur because of the amenity value of the streetcar and enhanced mobility. The Baseline Scenario also assumes that other public policies and improvements occur to stimulate neighborhood revitalization. The Accelerated Scenario represents a best case outcome, where not only does the streetcar corridor become an active development market along its length, but it is succeeds in attracting development from other areas, including areas in the region outside the City of Charlotte.



# Estimate of Potential Property-Based Funding

This chapter provides an overview of several key property-based funding mechanisms under consideration for financing a portion of the capital costs of streetcar construction. It also outlines the assumptions and findings from a forecasting model prepared for this report to evaluate the funding potential of these mechanisms as applied to the Charlotte streetcar corridor.

## Overview of Property-Based Funding Mechanisms

This section describes three public financing mechanisms that are potentially applicable to pay for the City's share of costs to develop the streetcar project.

### ***Tax Increment Financing***

Following a referendum to amend the State constitution, North Carolina became the forty-ninth state to allow the use of Project Development Finance, or as it is more commonly known nationally, Tax Increment Financing or TIF. Historically tax increment financing has been a tool specifically reserved for blighted or economically depressed areas. In North Carolina, the Project Development Financing Act is broadly written and allows for the use of tax increment financing in any area “appropriate for the economic development of the community.”

The Project Development Finance act works through the creation of Development Financing Districts by cities or counties (referred to in this section as *cities*). Within a District a portion of the property taxes that would otherwise flow to the city general fund, is diverted to a special revenue fund (or Revenue Increment Fund). It is important to note that TIF does not increase taxes for property owners, rather it reallocates a portion of the growth in property taxes receipts to cities that arise from new construction and market-based increases in property value. These revenues may be bonded against to pay for a variety of types of capital projects including the development of public transportation facilities (G.S. 159-48).

When a District is established, the assessed value of property within the District is calculated for the starting year and referred to as the “baseline valuation”. For the duration of the District, which lasts until any bonds are repaid, but not any longer than thirty years, the amount of property taxes which accrue to city general fund from the District is tied to the baseline valuation. The difference between the baseline valuation and the current valuation at the end of each year is referred to as the incremental valuation. Taxes are collected on the incremental valuation at the effective property tax rate for the city and flow into the Revenue Increment Fund for use on capital or other projects that promote the economic development of the District.<sup>15</sup>

Development Financing Districts are established through a multi-step process that includes: 1) consultation with the North Carolina Local Governments Commission; 2) a city defines an

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<sup>15</sup> As of 2008, the property tax rate for the City of Charlotte is \$0.4586 per \$100 of assessed value.

appropriate area as a Development Financing District; 3) a city adopts a TIF Plan, 4) a city conducts external reviews, including review by the County Commission, who can veto it; and 5) hold public hearings and complete adoption. Additional steps are required to issue bonds repaid by TIF. The TIF Plan must address the costs of proposed public activities, the sources and amounts of funds to pay for these activities, a projection of the amount of tax increment revenues that will be raised, and the estimated duration of the District. A city may have no more than five percent of its total land area within Development Financing Districts, and no more than 20 percent of future projected private development within a District located outside of a central business district may be used for “retail sales, hotels, banking and financial services offered directly to consumers, and other commercial uses other than office space” (G.S. 158-7.3).<sup>16</sup>

### ***Municipal Service Districts***

North Carolina state law also authorizes cities to establish Municipal Service Districts (MSDs) to provide or maintain services or facilities that are not offered to the entire city or which would be provided to a greater extent than elsewhere in the city (G.S. 160A-536). MSDs levy an additional ad valorem property tax in the defined area and use the proceeds to fund special programs or the development of facilities that will benefit the properties and businesses in the District. All funds generated through this additional tax must be spent within the District on enhancement programs managed either directly by the City or by another organization contracted to provide services. Importantly, MSD revenues may be bonded against through the issuance of special obligation bonds to pay for any service or facility which MSDs are authorized to provide (G.S. 159I-30).

Cities may define MSDs for a variety of functions, including downtown and urban area revitalization projects, transit-oriented development projects, infrastructure improvements, and planning and design work for District improvements, including fees for consultants, engineers, and architects. Streetcar systems qualify as projects eligible for MSD funding.

State law outlines four actions required of cities seeking to establish an MSD. The city must develop a report that defines the proposed boundaries, demonstrates the proposed District meets state standards, and identifies a plan for providing services in the District. The city must then notify all property owners in the District of the proposed District formation and the date of a public hearing. After holding a public hearing, the city must approve a resolution adding parcels to the MSD and establish the tax rate as part of its annual budget ordinance. Upon formation, MSDs may tax property owners at a rate determined to generate sufficient revenue to fund the additional services provided in the District. Petitions and votes by property owners within the District are not required for MSD formation.

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<sup>16</sup> According to the US Census Bureau, the City of Charlotte is approximately 242 square miles or 154,880 acres in size. By comparison, a Development Financing District covering the area within one-quarter mile of the proposed streetcar route, would be approximately 3,350 acres or 2.16 percent of the land area of the City, well below the maximum size of 5 percent. Similarly, based on an analysis of projected future private development in the one-quarter mile corridor surrounding the proposed streetcar route, the amount of retail, hotel, and retail banking/financial services would be far below the 20 percent maximum allowed under state law. A preliminary analysis indicates that this type of development would account for only 5 to 7 percent of total projected private development, measured on a per square foot basis.

An MSD does not have its own governing board separate from the city council that established it. However, cities may create advisory boards within Districts or contract for the operation of the District with a nonprofit organization that represents District property owners.

The City of Charlotte currently has five MSDs, all of which are managed through contracts with a nonprofit service provider. Center City Partners services MSDs 1-4 while University Partners manages MSD 5. Services provided in these MSDs by these nonprofit providers include land use and transportation planning and development, minor streetscape improvements, special events, marketing and promotion, transportation services, and business development.

The proposed streetcar route passes through three Municipal Service Districts in the Uptown area. Tax Rates in these areas range from 1.31 percent to 1.35 percent, reflecting an additional 0.017 percent to 0.056 percent tax rate applied on top of combined City and County property tax rate for the City of Charlotte, which is 1.30 percent as of 2008. Per state law, the maximum property tax rate that can be charged in the state on any property is 1.50 percent. Hence, in areas where no MSD already exists, the City can increase property taxes by a maximum of 0.20 percent through the creation of an MSD.

If the City were to establish an MSD to pay for streetcar improvements, it would need to first develop a report which identifies the District boundaries and details the plan to implement the streetcar improvement program. After notifying property owners and holding a public hearing, the city council must find that the District needs the proposed services “to a demonstrably greater extent” than the rest of the city and adopt a resolution establishing the MSD.

In addition to establishing a new MSD which encompasses the entire streetcar system, individual stations located in one of the existing MSDs in the City may be eligible for MSD funding for station area enhancements. Eight of the proposed streetcar stations are located in existing MSDs. MSD 1 and MSD 3 each contain one station while MSD 2 contains six stations.

### ***Special Assessments***

Special assessments are financing mechanisms cities and counties use to fund capital projects. These assessments are levied on properties to pay for public improvements that benefit them with the amount of the assessment placed on each property determined based on the proportional benefit it receives. Often, the basis of assessment is front footage, meaning that each property is assessed a uniform rate per foot of property that abuts the project. Other bases of assessment include the size of the area benefited and the value added to the property because of the improvement project.

In North Carolina, cities may levy special assessments to finance public improvements including streets, sidewalks, water systems, sewage collection and disposal systems, storm sewer and drainage systems, and beach erosion control and flood and hurricane protection projects. Public transit improvements are not identified as public improvements authorized for special assessments

in the statute (G.S. 160-A-216). This means that the State legislature would need to modify special assessment district legislation to allow its collection for the streetcar system.

This year the State legislature approved the creation of Special Assessment Districts for Critical Infrastructure Needs (G.S. 121-38). This authority allows a petition by 50 percent of property owners in an area representing 2/3 of assessed value to create district to finance infrastructure improvements. Public transportation facilities are specifically included. Furthermore, unlike property taxes or MSD payments, tax-exempt property owners such as institutions and non-profits would be required to pay this type of assessment, on the theory that they also share in the benefits of such improvements. Because of the petition requirements, it is more practical when there are only a few owners controlling a large amount of land, such as in a new subdivision. Creating such a district in the streetcar corridor would likely require tightly drawn district boundaries that include those owners who benefit most (e.g., excluding single-family neighborhoods with many property owners) and an active education and outreach campaign to generate support among those property owners who would pay the assessments.

## **Forecasting Model Methodology**

The following section provides a step-by-step description of BAE’s methodology for forecasting MSD and TIF revenues which could be used to pay for the City’s share of costs to build the streetcar. Detailed calculations regarding this methodology are shown in Appendix D.

### ***Define Boundaries of MSD and TIF District***

For purposes of forecasting tax revenues, BAE used a distance of one-quarter mile around the proposed streetcar route to define the boundaries of a potential MSD and TIF District. Actual District boundaries would be determined through a public process, taking into account input from the community and affected property owners and the boundaries of the MSD and TIF districts would not need to be contiguous. One-quarter mile is typically considered the distance people will walk to access light rail and streetcar transit systems and is defined in State law as a “public transit area” within which an MSD may be formed to help pay for the development of transit facilities (G.S. 160A-536).

### ***Calculate Baseline Valuation for the District***

Tax increment financing forecasts begin with the calculation of a baseline valuation for the District during the initial year of its formation. Based on tax data provided by Mecklenburg County, BAE used a GIS analysis to calculate the assessed value of all taxable properties<sup>17</sup> located within one quarter mile of the proposed streetcar route.<sup>18</sup> Property values reflected in this data were from the

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<sup>17</sup> Which properties are taxable is described in State law with several categories of property explicitly identified as exempt from property taxes, including government-owned properties, cemeteries, religious institutions, educational institutions, and properties used for various other charitable purposes (G.S. 159 107).

<sup>18</sup> BAE considered parcels to be within the District if center point of those parcels was within a quarter-mile of the proposed streetcar route. Hence, where only a small portion of parcels was located within the quarter-mile

2003 revaluation and totals \$3.1 billion, including residential and non-residential properties. Using data from the S&P/Case-Shiller index for the Charlotte metropolitan area and MIT Center for Real Estate Transactions-Based Index of U.S. Institutional Commercial Property to identify long-term appreciation trends for residential and commercial properties, BAE inflated these values to current dollars to approximate the future 2010 reassessment (although this will not account for properties that have had more rapid appreciation<sup>19</sup>).

### ***Estimate the Quantity and Value of New Development with the District***

Warren & Associates forecast the quantity of new residential and commercial development anticipated within the District throughout the 25 year period from 2010 to 2035, in five-year increments, as described in the previous chapter on development scenarios. These forecasts included a baseline scenario, which quantifies the amount of development expected within the District, excluding the active Downtown streetcar corridor segment, based on streetcar and neighborhood revitalization increasing development activity above historical and recent trends. An accelerated scenario was created, which assumes that the District will capture an even larger share of regional growth as a result of the streetcar project, representing a 0.5 percent additional share of residential growth in the 9-county region. Both scenarios were adjusted to show more modest development during the 2010 to 2015 time period, as a result of the current deep recession. Given the multiple transit corridors being created, and development through the region, it would be extremely difficult for the streetcar corridor to attract more than a one to two percent additional share of regional growth; 0.5 percent was chosen to provide a more reasonable increment.. BAE modeled tax revenue forecasts based on both the baseline and accelerated scenarios to show the range of possible revenue generation, depending on the quantity of new development that actually occurs.

Warren & Associates also provided market data for each of the real estate product types expected to be built in the various segments of the corridor. These data included condominium/townhouse sale prices and apartment, office, and retail rents, and are shown in Appendix A. Also provided were data regarding operating expenses and vacancies. For so-called income properties (those which are leased rather than sold), BAE calculated the completed value of new development using a capitalized value approach. This approach is commonly used by appraisers and estimates the value of a property based on the stream of net operating income that it generates. Capitalization rates and other assumptions are set forth in the detailed model in Appendix D.

### ***Calculate Increase in Assessed Value***

A key step in determining the amount of MSD and TIF revenues the District would generate is estimating the increase in assessed value in the District during its duration. Described below are various property value appreciation factors relevant to this Study:

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buffer around the streetcar, those parcels were not included in District as defined for purposes of this analysis. Exempt parcels include those

<sup>19</sup> The higher value of such properties would be included in the baseline value for a District, and therefore would not generate additional increment.

**Streetcar Premium**<sup>20</sup>. A streetcar premium is the assumed increase in land values within the District attributable to the development of the streetcar. As described previously in this report, much research has been conducted into the impact of fixed guideway transit systems on the value of nearby land. For purposes of this analysis, BAE used a low, medium, and high values for this appreciation factor ranging from 0 percent to 10 percent. The streetcar premium is a one-time factor that is assumed to be realized concurrent with the opening of the streetcar project.

**Real Increases in Market Values.** Although the data indicates continuing long-term increases in Charlotte real property values, which could result in increases in assessed value and tax increment, this factor was not included in future projections of assessed value.

The reason for this arises from the particulars of how reassessments are conducted pursuant to North Carolina law. One of the final steps in the reassessment process, after new values have been determined, is to readjust the property tax rate so that there is no net increase in property tax receipts due to overall increases assessed value (this does not apply to individual properties that may have increased in value because of gentrification, etc.). After this step, jurisdictions can subsequently decide to increase the property tax rate to increase property tax receipts as a result of higher assessed values, however, the City's policy is to not do this.

Theoretically, the policy of tax rate adjustment to offset increases in assessed value could diminish some of the utility of a tax increment finance district, since increased assessed values in the district would have to result in an adjustment to the City-wide property tax rate to offset the increased receipts. However, based on discussions with the City's Finance Department, it was decided that projections should assume that a new tax increment finance district would capture the increase in assessed value resulting from new development or redevelopment of properties, any streetcar premium, and other reinvestment in existing properties that increases their value, as described in the next section. This means that future reassessments after 2010 are not projected to increase property tax receipts, and therefore the financial model does not account for future reassessment cycles.

**Neighborhood Reinvestment.** Another factor leading to property value appreciation is reinvestment in properties, through the process of renovation, rehabilitation, or expansion of existing development as neighborhood market conditions improve. For purposes of estimating its impact on assessed value, BAE has estimated the potential range of this effect (in real inflation-adjusted terms) to be between 0 percent per year at the low end to 0.3 percent per year at the high end and applied the factor only to residential development. These figures are based on professional judgment, with the upper figure selected to avoid overstating this effect. Per State law, changes in value resulting from construction activity are assessed on an annual basis, separate from the revaluation process.

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<sup>20</sup> This is the same as the "TOD Premium" discussed in the academic literature; it is referred to here as a "Streetcar Premium" to avoid confusion with Charlotte's TOD definition and policies that are not necessarily applicable to the proposed streetcar corridor.

**Agreements with Property Owners.** A final factor which can lead to increases in property value is agreements between the City and individual property owners establishing the minimum assessed value of properties. Under a provision of State law, any jurisdiction forming a TIF District may negotiate agreements with property owners establishing a floor for assessed property values, regardless of actual market conditions. Agreements may extend for the life of the District with agreed-upon minimum assessed values varying from year to year (G.S. 159-108). Such agreements would presumably only be entered into with major property owners expected to directly benefit from expenditures of the District. This analysis does not make any adjustments to account for the possibility of such agreements. If the city proceeds to form a District it may wish to study the desirability and feasibility of entering into such agreements with key property owners.<sup>21</sup>

### **Calculate MSD and TIF Revenues**

Based on expectation for new development within the District and the appreciation factors described above, the assessed value of the District was expected to increase year-by-year, leading to increasing MSD and TIF revenues through the life of the District.<sup>22</sup>

**MSD Revenues.** For each year from 2010 to 2035, BAE estimated the total assessed value at the start of the year and applied an assumed MSD tax rate to determine the amount of revenue generated. For purposes of this model, BAE assumed an MSD tax rate ranging from a low of 0.02 percent of assessed value to a high of 0.06 percent. Current MSDs in the City have tax rates ranging from approximately 0.012 percent to approximately 0.067 percent. Per State law, the maximum MSD tax rate that could be assessed in Charlotte would be approximately 0.20 percent.<sup>23</sup>

**TIF Revenues.** In addition to calculating the assessed value each year, BAE calculated the incremental value, which is the difference between the baseline valuation (calculated for the District's initial year) and the valuation at the end of each subsequent year. TIF revenues are calculated by multiplying the incremental valuation each year by the City property tax rate, currently 0.46 percent of assessed value. During early years, TIF revenues are expected to be quite small as the baseline valuation and current valuation are similar. However, as new development activity occurs, the amount of TIF revenues become quite significant in later years.

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<sup>21</sup> At their discretion, tax-exempt institutions could potentially enter into such agreements, allowing their properties to be taxed as a way of contributing to the amount of available tax increment generated from a District and thereby helping to finance desired public improvements. The decision to enter into such an agreement would be at the discretion of these institutions and would require further legal research to determine whether this provision of State law is in fact applicable to tax-exempt properties.

<sup>22</sup> Note that TIF districts can exist for a maximum of up to 30 years under North Carolina law. For purposes of analysis, BAE has only modeled revenues over a 25 year period due to a lack of housing and employment forecasts for the region beyond 2035.

<sup>23</sup> State law allows both the County and the City to establish a maximum property tax rate of 1.50%, for a total combined rate of 3.0%. The combined City and County tax rate in Charlotte is approximately 1.30% as of 2008. For this analysis, a target maximum combined tax rate of 1.5% was used, therefore the maximum MSD rate in the City would be approximately 0.20%. A higher tax rate was not modeled in order to provide a more conservative estimate of potential MSD revenue generation.

### **Model Assumptions for Taxation and Value Capture**

The table below summarizes the various assumptions regarding the applicable MSD tax rate, TOD premium, and neighborhood reinvestment factor. These are included in three scenarios formulated to combine multiple variables and allow meaningful comparison. The Low and Moderate Scenario use the Baseline Development Scenario described in the preceding chapter of this Study, while the High Scenario uses the Accelerated Development Scenario.

The Low Scenario starts with the Baseline Development Scenario, and assumes a modest MSD rate of 0.02 percent, no streetcar premium, and no increase in assessed values from increased demand or improvements to existing properties.

The Moderate Scenario starts with the Baseline Development Scenario, and assumes a higher MSD rate of 0.04 percent, a five percent streetcar premium, and a 0.3 percent annual increase in assessed values from improvements to existing properties arising from neighborhood reinvestment.

The High Scenario starts with the Accelerated Development Scenario, and assumes a higher MSD rate of 0.06 percent, a 10 percent streetcar premium, and a 0.3 percent annual increase in assessed values from improvements to existing properties arising from neighborhood reinvestment.

**Table 9: Taxation and Value Assumptions for Model**

<b>Taxation and Property Value Appreciation Assumptions</b>			
	<b>Scenarios</b>		
	<b>Low</b>	<b>Moderate</b>	<b>High</b>
<b>Tax Rates (a)</b>			
MSD Tax Rate	0.02%	0.04%	0.06%
TIF Tax Rate	0.46%	0.46%	0.46%
<b>Streetcar Value Premium (b)</b>			
Residential	0.00%	5.00%	10.00%
Commercial	0.00%	5.00%	10.00%
<b>Neighborhood Reinvestment Factor (Annual) (c)</b>			
Residential	0.00%	0.30%	0.30%
Commercial	0.00%	0.00%	0.00%

**Notes:**

(a) Tax rate assumptions are as follows:

-MSD tax rates show various possible tax rates which could be applied to properties in the streetcar corridor. With a current combined City and County tax rate of approximately 1.3% in Charlotte and a maximum allowable property tax rate of 1.5% under state law, the maximum MSD tax rate could go as high as approximately 0.20%.

-TIF tax rate is based on the 2008 City of Charlotte property tax rate. (Note this is different from the combined City and County rate of 1.3%).

(b) Streetcar value premium based on case study research regarding increases in land value for properties near transit systems.

(c) Denotes the estimated increase in improved value attributable to renovations, additions, and small-scale infill development.

Sources: Warren & Associates, 2008; BAE, 2008; and other sources as listed above.

### **Model Findings for No Streetcar vs. Streetcar Scenarios**

The property-based tax proceeds for the No Streetcar scenario was modeled in order to allow a comparison of how much additional tax proceeds would result from the various streetcar scenarios described in the preceding section. Such a comparison needs to focus on solely property tax proceeds to the City’s General Fund, since in the No Streetcar scenario neither a TIF District, nor an MSD or other assessment district would be created.

To provide an even comparison, the No Streetcar scenario as well as the Low, Moderate, and High Streetcar scenarios were modeled for the period from 2010 to 2035, using the development

scenarios outlined in the previous chapter of this Study, and the assumptions described in the preceding section. The No Streetcar scenario uses the same inflation and increase in neighborhood value assumptions as the Low Streetcar scenario.

Table 10 shows the model results for these four scenarios. These figures show only the increase from new development (i.e. property tax proceeds from existing development is not included), along with the resulting increases in property values from renovation and improvement of existing properties.

**Table 10: Growth in Streetcar Corridor Property Tax Increment from New Development and Appreciation Factors, 2010 to 2035**

*(Figures in constant 2008 dollars)*

Year	No Streetcar Scenario (No Streetcar Premium / Slower Growth)	Low Growth Scenario (No Streetcar Premium / Baseline Growth)	Moderate Growth Scenario (Moderate Streetcar Premium / Baseline Growth)	High Growth Scenario (High Streetcar Premium / Accelerated Growth)
2010	\$217,411	\$284,593	\$528,913	\$765,652
2011	\$434,821	\$569,187	\$821,760	\$1,058,627
2012	\$652,232	\$853,780	\$1,115,155	\$1,352,151
2013	\$869,643	\$1,138,374	\$1,409,100	\$1,646,225
2014	\$1,087,054	\$1,422,967	\$1,703,596	\$1,940,850
2015	\$1,304,464	\$1,707,561	\$1,998,644	\$2,236,028
2016	\$1,853,952	\$2,389,224	\$2,691,317	\$3,037,908
2017	\$2,403,439	\$3,070,888	\$3,385,065	\$3,841,170
2018	\$2,952,926	\$3,752,551	\$4,079,891	\$4,645,820
2019	\$3,502,413	\$4,434,215	\$4,775,799	\$5,451,861
2020	\$4,051,901	\$5,115,879	\$5,472,792	\$6,259,297
2021	\$4,577,211	\$5,780,975	\$6,154,306	\$7,024,934
2022	\$5,102,522	\$6,446,071	\$6,836,939	\$7,791,911
2023	\$5,627,833	\$7,111,167	\$7,520,695	\$8,560,230
2024	\$6,153,144	\$7,776,264	\$8,205,577	\$9,329,897
2025	\$6,678,454	\$8,441,360	\$8,891,589	\$10,100,915
2026	\$7,196,277	\$9,120,576	\$9,592,854	\$10,867,860
2027	\$7,714,099	\$9,799,793	\$10,295,388	\$11,636,225
2028	\$8,231,921	\$10,479,009	\$10,999,195	\$12,406,017
2029	\$8,749,743	\$11,158,226	\$11,704,277	\$13,177,238
2030	\$9,267,565	\$11,837,442	\$12,410,640	\$13,949,894
2031	\$9,783,511	\$12,517,617	\$13,119,246	\$14,727,898
2032	\$10,299,457	\$13,197,792	\$13,829,153	\$15,507,396
2033	\$10,815,403	\$13,877,966	\$14,540,366	\$16,288,391
2034	\$11,331,349	\$14,558,141	\$15,252,889	\$17,070,888
2035	\$11,847,295	\$15,238,316	\$15,966,726	\$17,854,892
Total	\$142,706,040	\$182,079,935	\$193,301,874	\$218,530,175

Note:

(a) City of Charlotte Property Tax Rate, 2008:

\$0.4586 per \$100 of assessed value

Source: BAE, 2008.

Using 2035 as a comparison year, with no streetcar the corridor is still projected to generate an additional approximately \$11.8 million in property tax proceeds in constant 2008 dollars, versus \$15.2 million for the Low Scenario, \$18 million for the Moderate Scenario, and \$20 million for the High Scenario. In percentage terms, the Low Scenario would generate approximately 28 percent more property tax revenues, the Moderate Scenario 52 percent, and the High scenario 70 percent.

## Model Findings for Streetcar Scenarios

The following paragraphs summarize the model results shown in Table 11, on the page after next, for potential TIF and MSD generation for the Low, Moderate, and High Scenarios<sup>24</sup>.

### ***Low Appreciation Factors / Baseline Growth Scenario***

This scenario is based on the low range of taxation and property appreciation factor assumptions and the *baseline* assumption for future growth. Findings include:

- Annual MSD revenues increase from \$750,000 in 2010 to \$1.4 million in 2035.
- Annual TIF revenues increase from \$285,000 in 2010 to \$15.2 million in 2035.
- Added together, these revenues total approximately \$209 million over a 25 year period, expressed in constant 2008 dollars.

### ***Moderate Appreciation Factors / Baseline Growth Scenario***

This scenario is based on the middle range of taxation and property appreciation factor assumptions and the *baseline* assumption for future growth. Findings include:

- Annual MSD revenues would increase from \$1.5 million in 2010 to \$2.9 million in 2035.
- Annual TIF revenues would increase from \$529,000 in 2010 to \$16.0 million in 2035.
- Added together, these revenues would total approximately \$249 million over a 25 year period, expressed in constant 2008 dollars. Underlying the higher revenue projections in this scenario compared to the Low Scenario is the assumption of a higher MSD tax rate and higher rates for property value appreciation factors.

### ***High Appreciation Factors / Accelerated Growth Scenario***

This scenario is based on the high range of taxation and property appreciation factor assumptions and the accelerated assumption for future growth. Findings include:

- Annual MSD revenues would increase from \$2.3 million in 2010 to \$4.6 million in 2035.
- Annual TIF revenues would increase from \$766,000 in 2010 to \$17.8 million in 2035.
- Added together, these revenues would total approximately \$305 million over a 25 year period, expressed in constant 2008 dollars. Underlying the higher revenue projections in this scenario compared to the Low Scenario and Moderate Scenario is the assumption of a higher MSD tax rate, larger TOD premium, and an accelerated projection of amount new development that will occur in the streetcar corridor.

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<sup>24</sup> These figures do not include the proposed Elizabeth Avenue Synthetic Tax Increment Finance District (STIF) repayment. The value of the STIF was in the process of being determined when the Study was prepared.

## **Implications for Streetcar Capital Improvements Financing**

The preceding figures do not directly translate to available potential financing for the streetcar system, for several reasons. Perhaps the most significant factor is that property-based value capture mechanisms build value over time, while capital improvement costs typically need to be made up-front. Obtaining a larger amount of financing than can be justified by available tax increment and/or assessment district proceeds is often done by providing credit guarantees, or arranging internal loans of funds from other accounts that would be repaid from future tax increment and MSD payments as they increase. Other factors that might affect financing would include whether improvements can be phased.

Next steps for a streetcar financing strategy would include evaluation of these and other factors with the City's budget and management staff, and decisions on the optimal methods for leveraging potential tax increment and MSD proceeds. That work would then need to be integrated with other work addressing other federal, state, and local grants and non-property tax based funding sources.

**Table 11: Yearly Revenue from MSD and TIF**

*(Figures in constant 2008 dollars)*

Year	Low Appreciation / Baseline Growth Scenario			Moderate Appreciation / Baseline Growth Scenario			High Appreciation / Accelerated Growth Scenario		
	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues
2010	\$750,348	\$284,593	\$1,034,941	\$1,522,005	\$528,913	\$2,050,918	\$2,313,982	\$765,652	\$3,079,634
2011	\$762,759	\$569,187	\$1,331,946	\$1,547,548	\$821,760	\$2,369,308	\$2,352,312	\$1,058,627	\$3,410,940
2012	\$775,171	\$853,780	\$1,628,951	\$1,573,139	\$1,115,155	\$2,688,294	\$2,390,715	\$1,352,151	\$3,742,866
2013	\$787,582	\$1,138,374	\$1,925,956	\$1,598,777	\$1,409,100	\$3,007,877	\$2,429,189	\$1,646,225	\$4,075,414
2014	\$799,993	\$1,422,967	\$2,222,961	\$1,624,464	\$1,703,596	\$3,328,059	\$2,467,736	\$1,940,850	\$4,408,586
2015	\$812,405	\$1,707,561	\$2,519,965	\$1,650,198	\$1,998,644	\$3,648,842	\$2,506,355	\$2,236,028	\$4,742,383
2016	\$842,133	\$2,389,224	\$3,231,357	\$1,710,615	\$2,691,317	\$4,401,932	\$2,611,267	\$3,037,908	\$5,649,175
2017	\$871,861	\$3,070,888	\$3,942,749	\$1,771,125	\$3,385,065	\$5,156,190	\$2,716,361	\$3,841,170	\$6,557,531
2018	\$901,589	\$3,752,551	\$4,654,140	\$1,831,729	\$4,079,891	\$5,911,620	\$2,821,635	\$4,645,820	\$7,467,455
2019	\$931,317	\$4,434,215	\$5,365,532	\$1,892,427	\$4,775,799	\$6,668,227	\$2,927,092	\$5,451,861	\$8,378,953
2020	\$961,045	\$5,115,879	\$6,076,924	\$1,953,220	\$5,472,792	\$7,426,013	\$3,032,731	\$6,259,297	\$9,292,028
2021	\$990,050	\$5,780,975	\$6,771,025	\$2,012,663	\$6,154,306	\$8,166,969	\$3,132,902	\$7,024,934	\$10,157,836
2022	\$1,019,056	\$6,446,071	\$7,465,127	\$2,072,204	\$6,836,939	\$8,909,143	\$3,233,248	\$7,791,911	\$11,025,159
2023	\$1,048,061	\$7,111,167	\$8,159,229	\$2,131,843	\$7,520,695	\$9,652,537	\$3,333,769	\$8,560,230	\$11,894,000
2024	\$1,077,067	\$7,776,264	\$8,853,331	\$2,191,579	\$8,205,577	\$10,397,156	\$3,434,467	\$9,329,897	\$12,764,364
2025	\$1,106,072	\$8,441,360	\$9,547,432	\$2,251,415	\$8,891,589	\$11,143,004	\$3,535,342	\$10,100,915	\$13,636,257
2026	\$1,135,694	\$9,120,576	\$10,256,270	\$2,312,580	\$9,592,854	\$11,905,435	\$3,635,683	\$10,867,860	\$14,503,543
2027	\$1,165,315	\$9,799,793	\$10,965,108	\$2,373,857	\$10,295,388	\$12,669,245	\$3,736,211	\$11,636,225	\$15,372,436
2028	\$1,194,936	\$10,479,009	\$11,673,945	\$2,435,244	\$10,999,195	\$13,434,439	\$3,836,925	\$12,406,017	\$16,242,942
2029	\$1,224,558	\$11,158,226	\$12,382,783	\$2,496,743	\$11,704,277	\$14,201,020	\$3,937,826	\$13,177,238	\$17,115,065
2030	\$1,254,179	\$11,837,442	\$13,091,621	\$2,558,353	\$12,410,640	\$14,968,994	\$4,038,915	\$13,949,894	\$17,988,810
2031	\$1,283,842	\$12,517,617	\$13,801,459	\$2,620,159	\$13,119,246	\$15,739,405	\$4,140,704	\$14,727,898	\$18,868,602
2032	\$1,313,505	\$13,197,792	\$14,511,297	\$2,682,079	\$13,829,153	\$16,511,232	\$4,242,688	\$15,507,396	\$19,750,083
2033	\$1,343,168	\$13,877,966	\$15,221,134	\$2,744,112	\$14,540,366	\$17,284,479	\$4,344,868	\$16,288,391	\$20,633,258
2034	\$1,372,831	\$14,558,141	\$15,930,972	\$2,806,260	\$15,252,889	\$18,059,149	\$4,447,244	\$17,070,888	\$21,518,132
2035	\$1,402,494	\$15,238,316	\$16,640,810	\$2,868,522	\$15,966,726	\$18,835,248	\$4,549,818	\$17,854,892	\$22,404,710
Total	\$27,127,031	\$182,079,935	\$209,206,965	\$55,232,861	\$193,301,874	\$248,534,735	\$86,149,986	\$218,530,175	\$304,680,160

Source: BAE, 2008.

# Appendix A: Market Study Executive Summary

The study area for the Streetcar corridor has been established based on transportation analysis zones (TAZs), as defined by Charlotte region jurisdictions. The TAZs have been divided into four segments along the Streetcar line, bounded by major roads and creeks. For the purposes of this report, the segments have been defined as follows:

West: Beatties Ford Road between Rosa Parks Place and I-77  
 Downtown: Trade Street between I-77 and I-277  
 Midtown: Elizabeth Avenue, Hawthorne Lane, and Central Avenue west of Briar Creek  
 East: Central Avenue between Briar and Campbell creeks

A quarter-mile corridor surrounding the proposed Streetcar line was used to focus residential, office, and retail demand forecasts. All of the potential development in this report has been forecasted for the corridor. The four segments and the Streetcar corridor are shown in Map 1.

## 1. Demographic Forecasts

The Streetcar study area is forecasted to increase from 99,540 residents in 2010 to 152,399 residents in 2035 (Table 1). This would represent a 53.1% increase over the 25-year period. Growth would be concentrated in the Downtown segment, with 21,722 new residents representing 41.1% of the total study area increase. The much larger East segment would add the second-highest absolute number of residents, but would grow at the lowest rate of 26.6%.

**Table 1: Baseline Population Forecasts, Streetcar Segments, 2010-2035**

Streetcar Segment	Population						2010-2035 Change	
	2010	2015	2020	2025	2030	2035	#	%
West	23,696	26,260	28,317	30,374	31,980	33,574	9,878	41.7%
Downtown	11,651	14,612	19,369	24,126	28,758	33,373	21,722	186.4%
Midtown	21,004	22,558	23,927	25,295	28,052	30,787	9,783	46.6%
East	43,189	45,621	47,799	49,976	52,332	54,665	11,476	26.6%
<b>Total</b>	<b>99,540</b>	<b>109,051</b>	<b>119,411</b>	<b>129,771</b>	<b>141,122</b>	<b>152,399</b>	<b>52,859</b>	<b>53.1%</b>

Source: Charlotte Department of Transportation and Centralina Council of Governments

An accelerated growth scenario has been applied to the study area to indicate a potential shift in regional growth toward the Streetcar corridor. The market for additional growth and the ability to accommodate it varies by segment.

Assuming an accelerated growth rate, the Streetcar study area could grow by 57,656 residents between 2010 and 2035 (Table 2), up 9.1% from 52,859 new residents in the baseline scenario. Again, the Downtown segment commands the highest absolute and percentage growth, comprising 38.8% of the total study area growth.

**Table 2: Accelerated Population Forecasts, Streetcar Segments, 2010-2035**

Streetcar Segment	Population						2010-2035 Change	
	2010	2015	2020	2025	2030	2035	#	%
West	23,696	26,260	28,461	30,662	32,776	34,891	11,195	47.2%
Downtown	11,651	14,612	19,503	24,393	29,327	34,026	22,375	192.0%
Midtown	21,004	22,558	24,514	26,471	29,290	32,344	11,340	54.0%
East	43,189	45,621	48,311	51,001	53,585	55,935	12,746	29.5%
<b>Total</b>	<b>99,540</b>	<b>109,051</b>	<b>120,789</b>	<b>132,526</b>	<b>144,978</b>	<b>157,195</b>	<b>57,656</b>	<b>57.9%</b>

Source: Charlotte Department of Transportation and Centralina Council of Governments

Table 3 compares population forecasts for the Streetcar study area based on baseline and accelerated growth scenarios. Under the accelerated growth scenario, there would be 4,797 more residents in the study area than under the baseline scenario.

**Table 3: Population Scenario Comparison, Streetcar Areas, 2010-2035**

Scenario	Population						2010-2035 Change	
	2010	2015	2020	2025	2030	2035	#	%
Baseline	99,540	109,051	119,411	129,771	141,122	152,399	52,859	53.1%
Accelerated	99,540	109,051	120,789	132,526	144,978	157,195	57,656	57.9%
<b>Accelerated Premium</b>	<b>0.0%</b>	<b>0.0%</b>	<b>1.2%</b>	<b>2.1%</b>	<b>2.7%</b>	<b>3.1%</b>	<b>9.1%</b>	

Source: Charlotte Department of Transportation and Centralina Council of Governments

Table 4 compares the shares of regional population growth to the Streetcar study area for both the baseline and accelerated scenarios. Premiums for the accelerated scenario range from 0% to 0.6%. Premiums are only applied after 2015, when the construction of the Streetcar line is expected to be complete.

**Table 4: Shares of Regional Population Growth, Baseline & Accelerated Scenarios, 2010-2035**

Scenario	2010-2015	2016-2020	2021-2025	2026-2030	2031-2035
Baseline	5.0%	4.2%	4.2%	4.8%	4.8%
Accelerated	5.0%	4.8%	4.7%	5.2%	5.2%
<b>Accelerated Premium</b>	<b>0.0%</b>	<b>0.6%</b>	<b>0.5%</b>	<b>0.4%</b>	<b>0.4%</b>

Source: Warren & Associates

## 2. Residential Forecasts

New residential unit forecasts were based on household growth. Vacancy rates, tenure, and corridor captures were taken into account for each Streetcar segment to determine the overall demand for residential units. The baseline scenario shows demand for 9,458 new units in the Streetcar corridor between 2010 and 2035 (Table 5). Housing unit demand is strongest in the Downtown segment, making up 53.6% of the total forecast.

**Table 5: Baseline Total Unit Forecast,  
Streetcar Corridor, 2010-2035**

<b>Segment</b>	<b>2010- 2015</b>	<b>2016- 2020</b>	<b>2021- 2025</b>	<b>2026- 2030</b>	<b>2031- 2035</b>	<b>Total</b>	<b>% of Total</b>
West	222	337	337	249	241	1,387	14.7%
Downtown	596	1,167	1,167	1,071	1,065	5,065	53.6%
Midtown	227	222	222	562	554	1,787	18.9%
East	200	223	223	290	283	1,219	12.9%
<b>Total</b>	<b>1,245</b>	<b>1,950</b>	<b>1,950</b>	<b>2,171</b>	<b>2,142</b>	<b>9,458</b>	<b>100.0%</b>

Source: Charlotte Department of Transportation and Centralina COG

The accelerated growth scenario forecasts additional residential units exceeding the baseline total. Since growth in the accelerated scenario is attributed entirely to the Streetcar, all of the residential units are forecasted to be developed within the quarter-mile corridor. An additional 1,875 units could be supported in the accelerated growth scenario (Table 6). The accelerated scenario limits additional units Downtown because the Streetcar will be only one of multiple factors driving demand. Midtown would account for 31% of the total accelerated increment.

**Table 6: Accelerated New Unit Forecast,  
Streetcar Corridor, 2010-2035**

<b>Segment</b>	<b>2010- 2015</b>	<b>2016- 2020</b>	<b>2021- 2025</b>	<b>2026- 2030</b>	<b>2031- 2035</b>	<b>Total</b>	<b>% of Total</b>
West	0	98	98	183	189	567	30.5%
Downtown	0	150	0	72	46	269	14.5%
Midtown	0	218	218	22	117	575	31.0%
East	0	189	189	30	39	446	24.0%
<b>Total</b>	<b>0</b>	<b>655</b>	<b>505</b>	<b>307</b>	<b>391</b>	<b>1,857</b>	<b>100.0%</b>

Source: Charlotte Department of Transportation and Centralina COG

Table 7 indicates demand for 11,316 total residential units in the accelerated growth scenario. The forecasted residential units are expected to be developed within the quarter-mile Streetcar corridor.

**Table 7: Total Residential Unit  
Demand Summary, Streetcar  
Corridor, 2010-2035**

Corridor	Accelerated			% of Total
	Baseline	Increment	Total	
West	1,387	567	1,954	17.3%
Downtown	5,065	269	5,334	47.1%
Midtown	1,787	575	2,363	20.9%
East	1,219	446	1,665	14.7%
<b>Total</b>	<b>9,458</b>	<b>1,857</b>	<b>11,316</b>	<b>100.0%</b>
<b>% of Total</b>	<b>83.6%</b>	<b>16.4%</b>	<b>100.0%</b>	

Source: Warren & Associates

Owner occupied units account for 43.5% of the total forecasted units in the accelerated scenario (Table 8). Rental units make up a larger 56.5% of the new units within the corridor. The accelerated increase for all residential units is 19.6% over the baseline total.

**Table 8: Total New Residential  
Units by Tenure, Streetcar  
Corridor, 2010-2035**

Tenure	Accelerated			% of Total
	Baseline	Increment	Total	
Owner	4,114	813	4,927	43.5%
Rental	5,344	1,045	6,389	56.5%
<b>Total</b>	<b>9,458</b>	<b>1,857</b>	<b>11,316</b>	<b>100.0%</b>

Source: Warren & Associates

Table 9 shows the estimated unit size and sales price for for-sale residential product in the Streetcar corridor. Reported in 2008 dollars, the Downtown submarket has an average sales price of \$350,000, the highest of all four corridor segments. At \$198,000, the West corridor has the lowest average sales price. Average for-sale unit sizes range from 1,000 square feet Downtown to 1,200 square feet in the East segment.

**Table 9: New For-Sale Unit Pricing in 2008 Dollars,  
Streetcar Corridor, 2010-2035**

Segment	Average Price/S.F.	Average Unit Size	Average Sales Price
West	\$180	1,100	\$198,000
Downtown	\$350	1,000	\$350,000
Midtown	\$215	1,100	\$236,500
East	\$170	1,200	\$204,000

Source: Warren & Associates

Note: Pricing in 2008 dollars.

Rental units in the Downtown corridor have the highest rent per square foot at \$1.80 (Table 10). Downtown units have an average unit size of 850 square feet, equating to an average monthly rent of \$1,440. The East segment has the lowest rent per square foot at \$1.00, while the West segment has the lowest average monthly rent at \$990.

**Table 10: New Rental Unit Pricing in 2008 Dollars, Streetcar Corridor, 2010-2035**

Segment	Average Price/S.F.	Average Unit Size	Average Monthly Rent
West	\$1.10	900	\$990
Downtown	\$1.80	800	\$1,440
Midtown	\$1.60	850	\$1,360
East	\$1.00	1,000	\$1,000

Source: Warren & Associates

Note: Rents in 2008 dollars.

### 3. Office Forecasts

Baseline forecasts for square footage along the Streetcar corridor were based on employment estimates provided by the Centralina Council of Governments. Shares were applied to eight employment sectors to determine the number of new office-occupying employees expected in the Streetcar segments.

Based on office-occupying employee growth, it is anticipated that there is demand for 4.3 million square feet of office space in the Streetcar corridor by 2035 (Table 11). The Downtown segment accounts for 78.2% of total office demand for the Streetcar corridor. Office demand is expected to peak between 2016 and 2025, after the Streetcar opens.

**Table 11: Baseline Office Square Feet Demand Forecast, Streetcar Corridor, 2010-2035**

Corridor	2010-2015	2016-2020	2021-2025	2026-2030	2031-2035	Total	% of Total
West	20,736	34,029	38,283	44,282	41,432	178,761	4.1%
Downtown	302,040	912,229	821,006	681,559	676,861	3,393,695	78.2%
Midtown	70,642	81,149	81,149	102,622	98,597	434,160	10.0%
East	40,644	59,041	67,475	84,190	80,883	332,234	7.7%
<b>Total</b>	<b>434,063</b>	<b>1,086,448</b>	<b>1,007,913</b>	<b>912,653</b>	<b>897,773</b>	<b>4,338,851</b>	<b>100.0%</b>

Note: Based on 225 square feet per office employee.

Source: Warren & Associates

The accelerated growth scenario is based on additional demand that would be generated exclusively by the Streetcar. Table 12 shows that an additional 149,590 square feet of office space could be absorbed in the accelerated growth model. The Midtown corridor would account for 36% of the additional growth.

**Table 12: Accelerated Office Square Feet  
Demand Forecast, Streetcar Corridor, 2010-2035**

<b>Corridor</b>	<b>2010- 2015</b>	<b>2016- 2020</b>	<b>2021- 2025</b>	<b>2026- 2030</b>	<b>2031- 2035</b>	<b>Total</b>	<b>% of Total</b>
West	0	0	10,342	19,041	12,295	41,678	27.9%
Downtown	0	0	0	12,207	3,356	15,563	10.4%
Midtown	0	10,498	22,424	19,890	1,221	54,033	36.1%
East	0	10,215	10,215	11,364	6,522	38,315	25.6%
<b>Total</b>	<b>0</b>	<b>20,712</b>	<b>42,981</b>	<b>62,502</b>	<b>23,394</b>	<b>149,590</b>	<b>100.0%</b>

Note: Based on 225 square feet per office employee.

Source: Warren & Associates

The accelerated growth model forecasts a total of 4.5 million square feet of new office space within the Streetcar corridor by 2035 (Table 13). Approximately 96.7% of the total is accounted for in the baseline growth scenario, with only 3.3% added as the accelerated increment.

**Table 13: Total Accelerated Scenario  
Summary, Streetcar Corridor, 2010-  
2035**

<b>Corridor</b>	<b>Baseline Sq. Ft.</b>	<b>Accelerated Increment</b>	<b>Total</b>	<b>% of Total</b>
West	178,761	41,678	220,439	4.9%
Downtown	3,393,695	15,563	3,409,258	76.0%
Midtown	434,160	54,033	488,193	10.9%
East	332,234	38,315	370,549	8.3%
<b>Total</b>	<b>4,338,851</b>	<b>149,590</b>	<b>4,488,440</b>	<b>100.0%</b>
<b>% of Total</b>	<b>96.7%</b>	<b>3.3%</b>	<b>100.0%</b>	

Source: Warren & Associates

Average full-service office rents for new Class A space range from \$18.00 per square foot in the West and East segments to \$34.00 per square foot Downtown (Table 14). The Midtown segment could command an estimated \$30.00 per square foot. Office pricing is shown in 2008 dollars.

**Table 14: Office Pricing  
in 2008 Dollars, Streetcar  
Corridor**

<b>Corridor</b>	<b>Full Service Office Rent</b>
West	\$18.00
Downtown	\$34.00
Midtown	\$30.00
East	\$18.00

Source: Warren & Associates

#### 4. Retail Forecasts

Demand for retail square footage was determined based on household growth within the Streetcar study area. Using the average annual income for each segment, a total household income (THI) was determined. It was assumed that 30% of THI is spent on retail goods and services, including restaurants. A corridor capture of THI and employee and visitor inflow were applied to of the four segments.

The baseline scenario shows 365,722 square feet of new retail space for the corridor, ranging from 17,657 in the West to 217,328 Downtown (Table 15). The accelerated increment, due to the Streetcar adds another 25,388 square feet. This results in a total accelerated scenario of 391,110 square feet. Downtown represents 56.7% of the total.

**Table 15: Retail Square Feet Demand Summary, 2010-2035**

Corridor	Baseline Sq. Ft.	Accelerated Increment	Total	% of Total
West	17,657	2,889	20,546	5.3%
Downtown	217,328	4,612	221,940	56.7%
Midtown	100,679	14,586	115,265	29.5%
East	30,059	3,300	33,359	8.5%
<b>Total</b>	<b>365,722</b>	<b>25,388</b>	<b>391,110</b>	<b>100.0%</b>
<b>% of Total</b>	<b>93.5%</b>	<b>6.5%</b>	<b>100.0%</b>	

Source: Warren & Associates

Table 16 shows that estimated triple net retail rents for the corridor range from \$17.00 per square foot in the East to \$27.00 per square foot Downtown. Retail rents are shown in 2008 dollars.

**Table 16: Retail Pricing in 2008 Dollars, Streetcar Corridor**

Corridor	Triple Net Retail Rent
West	\$18.00
Downtown	\$27.00
Midtown	\$25.00
East	\$17.00

Source: Warren & Associates



# **Appendix B: Charlotte TOD Prototypes**

**Prototype Streetcar Developments in Charlotte**

Map Key	Project	Construction			Year			
		Type	Location	Neighborhood	Completed	Tenure	Units	Other Uses
1	Midwood Central Phase 1	Courtyard/Small Lot	Central Avenue	Plaza-Midwood	Und. Const.	For-Sale	11	None
2	Dilworth Crescent	Courtyard/Small Lot	Dilworth Road	Dilworth	1999	For-Sale	40	None
3	3030 South	Townhouse	South Boulevard	South End	2007	For-Sale	100	None
4	Elizabeth Village	Townhouse	Hawthorne Lane	Elizabeth	2004	For-Sale	42	None
5	Elizabeth on the Park	Townhouse	Park Drive	Elizabeth	2000	For-Sale	16	None
6	Woodfield Elizabeth	Texas Donut	Hawthorne Lane	Elizabeth	Und. Const.	Rental	267	None
7	Camden Dilworth	Texas Donut	Scott Avenue	Dilworth	2006	Rental	145	None
8	Cotton Mills	Podium	W. 5th Street	Uptown	2002	Rental	180	Retail, Office
9	626 N. Graham	Podium	N. Graham Street	Uptown	2004	For-Sale	43	Retail
10	Camden Grandview	Mid-Rise	E. Morehead Street	Uptown	1999	Rental	266	Retail, Office
11	Metropolitan Lofts	Mid-Rise	Kings Drive	Midtown	2008	For-Sale	101	Retail, Office

Source: Warren & Associates

**Courtyards – Small Lots: Midwood Central**



Dilworth Crescent



**Townhouses:** 3030 South



Elizabeth Village



Elizabeth on the Park



**Texas Donut: Woodfield Elizabeth**



**Camden Dilworth**





**Podium:** Camden Cotton Mills



626 N. Graham



**Mid-Rise:** Camden Grandview



**Metropolitan Lofts**





## **Appendix C: Analysis of LYNX Blue Line**

**MARKET STUDY (Excerpted sections)**

**Market Study**

**Lynx Blue-Line Light Rail Corridor**

Charlotte, Mecklenburg County

North Carolina

**PREPARED FOR:**

Bay Area Economics

1285 66<sup>th</sup> Street

Emeryville, CA 94608

**EFFECTIVE DATE OF THE STUDY:**

October 17, 2008

**REPORT FORMAT**

Summary

**INTEGRA REALTY RESOURCES - CHARLOTTE**

File Number: 105-2008-0561



**Market Study Along the Lynx Blue-Line Light Rail Corridor  
Charlotte, North Carolina**

October 17, 2008

Mr. Ron Golem  
Bay Area Economics  
1285 66<sup>th</sup> Street  
Emeryville, CA 94608

SUBJECT: Market Study  
Market Study Along the Lynx Blue-Line Light Rail Corridor  
Charlotte, Mecklenburg County  
North Carolina  
Integra Charlotte File No. 105-2008-0561

Dear Mr. Golem:

Integra Realty Resources – Charlotte is pleased to submit the accompanying market study of the referenced corridor. The purpose of the study to identify and analyze land sales along the Lynx Blue-Line Light Rail Corridor as well as within a quarter mile radius of each of the fifteen stations document appreciation levels, and identify development trend, the key factors influencing sales activity and land values. The client for the assignment is Bay Area Economics, and the intended use is to identify development trends and impacts on land values along the light rail corridor as a direct effect of its implementation..

This market study has been prepared in conformance with the Code of Ethics and Standards of Professional Practice of the Appraisal Institute. Further, the report is intended to comply with the Uniform Standards of Professional Appraisal Practice. The analysis involved the determination of a number of factors relating to supply, demand and market conditions.

The Lynx Blue Line Light Rail is a 15-station corridor that parallels South Boulevard (NC Highway 521) starting at 7th Street on the northeastern side of the Charlotte Central Business District (CBD) and moving southwest approximately 9.5 miles to the intersection of Interstate 485 and South Boulevard.

Mr. Ron Golem  
Bay Area Economics  
October 16, 2008  
Page 2

An investigation was conducted of land sales along the Lynx Blue Line X Blue-Line Corridor between the 7th Street Station and the I-485/South Boulevard Station which resulted in a total of 65 land sales. These sales occurred between 2002 and 2008. A total of 11 paired sales (sale and resale of the same property) was made to determine the various levels of appreciation along the light rail corridor. The annualized percentage change in value for sales with zoning changes ranged from 36.8% to 143.1%. The annualized percentage change in value for sales with no zoning change range from 5.1% to 16.6%. The primary reason for this dramatic change in value was attributed to the ability to rezone land along the light rail corridor to permit higher density development under the transit orientated development zoning ordinance with the second most influencing factor being the location along the light rail corridor. A more detailed summary is provided herein.

Thank you for the opportunity to provide our service.

Respectfully submitted,

**INTEGRA REALTY RESOURCES - CHARLOTTE**

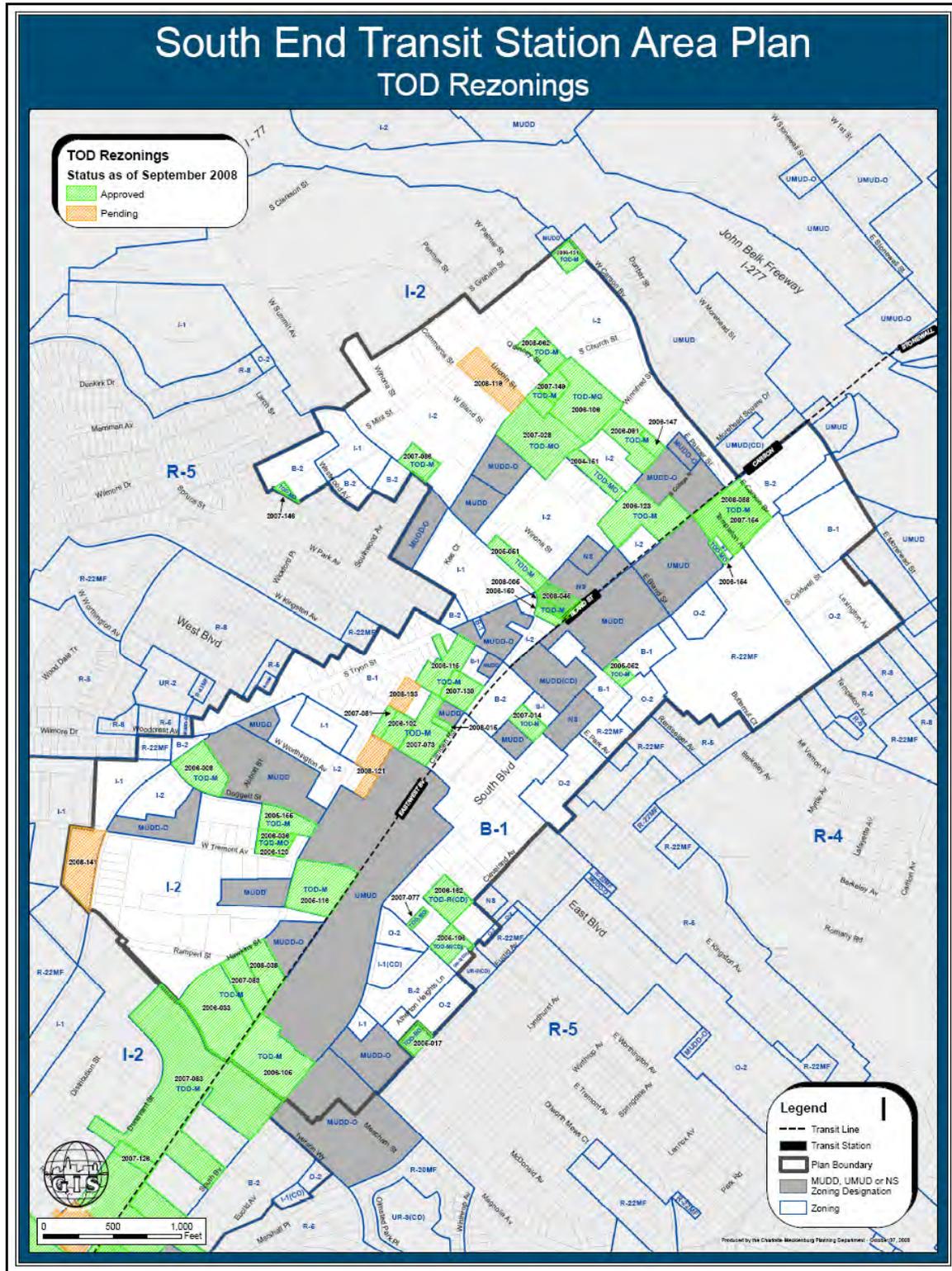
M. Scott Smith  
Registered Trainee Real Estate Appraiser  
North Carolina Certificate #T4997

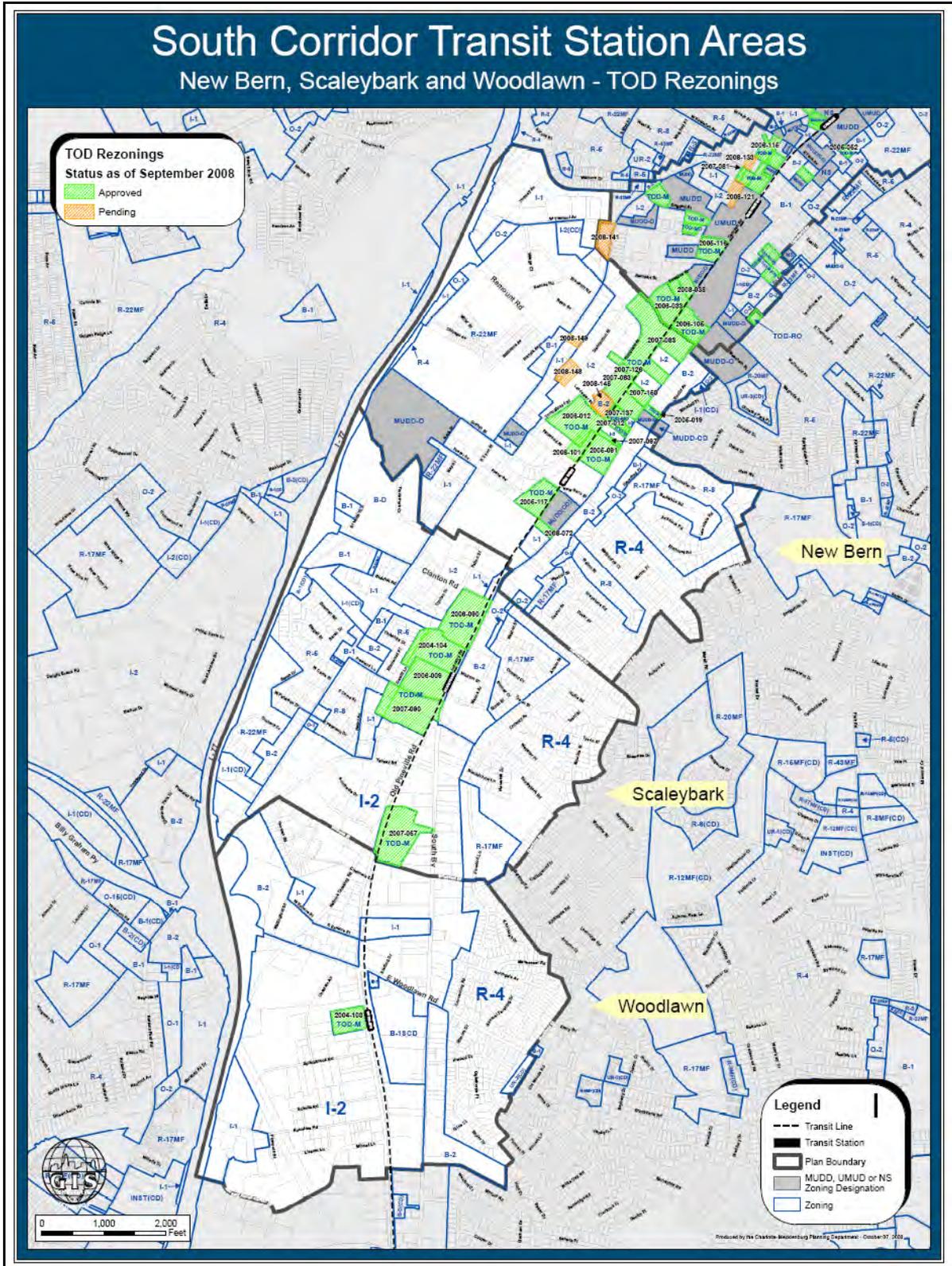
John S. Luntsford  
Certified General Real Estate Appraiser  
North Carolina Certificate # A5259

Fitzhugh L. Stout, MAI, CRE, FRICS  
Certified General Real Estate Appraiser  
North Carolina Certificate # A1093

MSS/JSL/FLS;tvm

# SOUTH END TRANSIT STATIONS AREA PLANS





## Lynx Blue Line Light Rail Study Land Sale Findings

### Mile 1

The following stations are located within the first mile of the Lynx Blue Line Light Rail:

Station 1 – 7<sup>th</sup> Street Station

Station 2 – Transportation Center Station

Station 3 – 3<sup>rd</sup> Street/ Convention Center Station

Station 4 – Stonewall Street Station

Station 5 – Carson Street Station

The following is a paired sale that reflects the upper end of the range based on the sales identified in the first mile of the Lynx Blue Line.

#### **228 South Church Street – 0.207 acre or 9,008 SF**

Sale 1- August 1, 2005, \$800,000 - \$88.81/SF

Sale 2- February 12, 2007, \$1,500,000 - \$166.51/SF

Total percent change – 87.5%

Annual Percent Change- 56.75%

The chart below summarizes the land sales identified within the first mile. The station numbers listed correspond with the numbers listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
7/31/2007	135 Morehead Apartments, LLC	104,805	\$8,155,000	\$77.81	5	UMUD	N/A	N/A
7/19/2007	Preferred Parking Service, LLC	5,924	\$572,000	\$96.56	1	UMUD	N/A	N/A
6/21/2007	Morehead Acquisitions, LLC	27,676	\$4,000,000	\$144.53	4 & 5	UMUD	N/A	N/A
2/12/2007	222 South Church Street, LLC*	9,008	\$1,500,000	\$166.52	3	UMUD	N/A	N/A
			<b>2007 Average:</b>	<b>\$121.35</b>				
7/18/2006	Crescent Resources, LLC	20,374	\$3,851,400	\$189.04	4	UMUD	N/A	N/A
1/10/2005	Starport Parking I, LLC	35,065	\$4,005,000	\$114.22	4	UMUD-O	N/A	N/A
8/1/2005	New Americana Investments, LLC*	9,008	\$800,000	\$88.81	3	UMUD	N/A	N/A
			<b>2005 Average:</b>	<b>\$101.51</b>				
10/9/2003	Morehead Tryon Properties, LLC	19,397	\$981,500	\$50.60	5	UMUD	N/A	N/A

\* Denotes a paired sale

## Mile 2

The following stations are located within the second mile of the Lynx Blue Line Light Rail:

Station 6 – Bland Street Station

Station 7 – East/ West Boulevard Station

The following are paired sales identified in the second mile of the Lynx Blue Line.

### **1927 South Tryon – 1.621 acres or 70,604 SF**

Sale 1 – July 29, 2005, \$1,200,000 - \$16.99/SF

Sale 2 – August 8, 2006, \$2,000,000 - \$28.33/SF

Total percent change – 66.67%

Annual percent change – 66.67%

**2203 Hawkins Street – 4.221 usable acres or 183,867 SF**

Sale 1 – December 30, 2005, \$3,500,000 - \$19.03/SF

Sale 2 – August 14, 2006, (effective) \$6,650,000 - \$36.16/SF

Total percent change – 90%

Annual percent change – 127.06%

**Design Center Carolinas – East Worthington Avenue – 0.4883 acre or 21,270 SF**

Sale 1 – March 11, 2002, \$477,000 - \$22.42/SF

Sale 2 – June 22, 2007, \$893,000 - \$41.98/SF

Total percentage change – 87.21%

Annual percentage change – 16.61% (no change in zoning)

**101 West Tremont – 2.866 acres or 124,843 SF**

Sale 1 – November 13, 2002, \$2,300,000 or \$18.42/SF

Sale 2 – August 18, 2006, \$6,500,000 or 52.07/SF

Total percentage change – 182.61%

Annual percentage change – 48.69%

**Annual percentage change ranges from 16.61% to 127.06% with an average of 65.76% for the four paired sales identified in the second mile of the Lynx Blue Line.**

The chart below summarizes the land sales identified within the second mile. The station numbers listed correspond with the numbers listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
3/13/2008	Southend Development Group, LLC	43,560	\$1,700,000	\$39.03	7	I-2	N/A	N/A
2/1/2008	Backstreets Marketing Group, Inc.	8,000	\$350,000	\$43.75	7	B-1	N/A	N/A
4/1/2008	Trehouse, LLC	15,000	\$800,000	\$53.33	7	UR-2 (CD)	N/A	N/A
3/25/2008	1200 South Boulevard, LLC	8,362	\$941,000	\$112.53	5	B-2	N/A	N/A
			<b>2008 Average:</b>	<b>\$62.16</b>				
1/17/2007	Park Avenue Investors, LLC	80,491	\$2,800,000	\$34.79	7	B-1	10/18/2006	TOD-M
6/22/2007	Design Center Carolinas*	21,270	\$893,000	\$41.98	7	UMUD	N/A	N/A
1/29/2007	1423 South Tryon Partners, LLC	10,572	\$476,000	\$45.02	6	I-2	N/A	N/A
9/5/2007	Rappaport Pearson, LLC	13,141	\$620,000	\$47.18	7	B-1	N/A	N/A
1/19/2007	Euclid, LLC	43,974	\$2,250,000	\$51.17	7	O-2	N/A	N/A
10/30/2007	South and Bland, LLC	155,073	\$8,500,000	\$54.81	6	MUDD	N/A	N/A
			<b>2007 Average:</b>	<b>\$45.83</b>				
8/4/2006	Southend Associates, LLC	38,594	\$805,725	\$20.88	7	I-2	4/17/2006	TOD-M
7/20/2006	Greendoc, LLC	72,609	\$1,800,000	\$24.79	7	I-2	7/16/2007	TOD-M
5/16/2006	McMahon Investments, LLC	8,113	\$204,000	\$25.14	5	I-2	N/A	N/A
8/8/2006	1927 Tryon Street Investors, LLC*	70,604	\$2,050,000	\$29.04	7	I-2	2/20/2006	TOD-M
8/14/2006	Hawkins Street Holdings, LLC*	183,867	\$6,650,000	\$36.17	7	I-2	4/17/2006	TOD-M
8/18/2006	Tremont Partners, LP*	124,843	\$6,500,000	\$52.07	7	I-2	10/19/2005	TOD-M
			<b>2006 Average:</b>	<b>\$33.44</b>				
6/30/2005	Waypoint Development, LLC	38,159	\$455,000	\$11.92	7	B-1	N/A	N/A
8/25/2005	1100 South Tryon Group I, LLC	29,577	\$433,000	\$14.64	6	I-2	N/A	N/A
7/29/2005	1927 South Tryon, LLC*	71,438	\$1,200,000	\$16.80	7	I-2	2/20/2006	TOD-M
12/30/2005	HMV Hawkins, LLC*	206,735	\$3,500,000	\$16.93	7	I-2	4/17/2006	TOD-M
12/14/2005	Tidewater Corporate Dev., LLC	33,454	\$600,000	\$17.94	7	B-1	11/21/2005	TOD-M (CD)
4/16/2005	Cole-Newman Investments, LLC	7,500	\$275,000	\$36.67	7	B-1	N/A	N/A
1/31/2005	Shoe Properties, LLC	2,420	\$113,000	\$46.69	6	I-2	N/A	N/A
			<b>2005 Average:</b>	<b>\$23.08</b>				
3/22/2004	Jupiter Group, LLC	20,400	\$519,600	\$25.47	7	B-1	7/16/2007	TOD-M
8/31/2004	Southend Investment Properties, LLC	28,500	\$1,500,000	\$52.63	7	B-1	3/19/2007	TOD-M
			<b>2004 Average:</b>	<b>\$39.05</b>				
11/26/2003	HMV Camden, LLC	11,246	\$505,000	\$44.90	6	MUDD	N/A	N/A
3/11/2002	Thomas P. Moore, III*	21,270	\$477,000	\$22.43	7	UMUD	N/A	N/A
11/13/2002	SGH-Mooresville, LLC*	124,843	\$2,300,000	\$18.42	7	I-2	10/19/2005	TOD-M
			<b>2002 Average:</b>	<b>\$20.42</b>				

\* Denotes a paired sale

### Mile 3

The following station is located within the third mile of the Lynx Blue Line Light Rail:

Station 8 – New Bern Avenue Station

The following are paired sales were identified in the third mile of the Lynx Blue Line.

#### **123 New Bern Avenue – 0.689 acre or 30,024 SF**

Sale 1 – July 22, 2002, \$200,000 or \$6.66/SF

Sale 2 – January 5, 2007, \$950,000 or \$31.64/SF

Total percentage change – 375%

Annual percentage change – 84.91%

#### **2400 South Boulevard – 1.48 (usable) acres or 64,774 SF**

Sale 1 – June 18, 2004, \$1,318,200 (effective price) or \$20.35/SF

Sale 2 – January 31, 2006, \$ 2,226,000 or \$34.37/SF

Total percentage change – 68.87%

Annual percentage change – 43.49%

#### **2800 South Boulevard – 4.15 (usable) acres or 181,166 SF**

Sale 1 – August 23, 2005, \$5,449,240 (effective price) or \$30.08/SF

Sale 2 – September 11, 2007, \$9,627,740 (effective price) or \$53.14/SF

Total percentage change – 76.68%

Annual percentage change – 36.81%

**2610 South Boulevard – 0.69 (usable) acre or 30,056 SF**

Sale 1 – January 23, 2004, \$450,000 or \$14.97/SF

Sale 2 – June 13, 2006, \$969,646 (effective price) or 32.26/SF

Total percentage change – 115.48%

Annual percent change – 46.19%

**Annual percentage change ranges from 36.81% to 84.91% with an average of 52.85%**

The chart on the following page summarizes the land sales identified within the third mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
2/22/2008	Kal Properties, LLC	262,631	\$1,761,500	\$6.71	8	I-2	N/A	N/A
1/22/2008	Fabrix Inc.	9,049	\$350,000	\$38.68	8	I-2	N/A	N/A
			<b>2008 Average:</b>	<b>\$22.69</b>				
1/5/2007	FMK Partners, LLC*	30,024	\$950,000	\$31.64	8	I-2	N/A	N/A
1/19/2007	Edward L. Keller	51,880	\$1,915,000	\$36.91	8	MUDD-O	N/A	N/A
9/11/2007	Colonial Realty, LP*	181,166	\$9,627,740	\$53.14	8	I-2	7/18/2005	TOD-M
8/7/2007	BSP Foster, LLC	166,138	\$9,375,000	\$56.43	8	I-2	10/19/2005	TOD-M
1/11/2007	Cherokee Southline, LLC	96,562	\$5,576,969	\$57.76	8	I-2	9/17/2007	TOD-M
			<b>2007 Average:</b>	<b>\$47.18</b>				
2/15/2006	Arthur and Diane Pue	41,125	\$750,000	\$18.24	8	I-2	N/A	N/A
6/13/2006	Citiline, LLC*	30,056	\$969,646	\$32.26	8	I-2 & B-1	2/19/2007	TOD-M
3/1/2006	Greenhawk Partners, LLC	186,742	\$6,356,000	\$34.04	8	I-2	9/17/2007	TOD-M
1/31/2006	Greenhawk Partners, LLC*	64,776	\$2,226,000	\$34.36	8	I-2	N/A	N/A
			<b>2006 Average:</b>	<b>\$29.72</b>				
8/23/2005	Abberley Station, LP*	181,166	\$5,449,240	\$30.08	8	I-2	7/18/2005	TOD-M
1/23/2004	Cecil E. Ormsby Jr.*	30,056	\$450,000	\$14.97	8			
6/18/2004	2400 South Boulevard, LLC*	64,776	\$1,318,200	\$20.35	8	I-2	N/A	N/A
			<b>2004 Average:</b>	<b>\$17.66</b>				
6/22/2002	Welsh Partners, LLC*	30,024	\$200,000	\$6.66	8	I-2	N/A	N/A

\* Denotes a paired sale

## Mile 4

The following station is located within the fourth mile of the Lynx Blue Line Light Rail:

Station 9 – Scaleybark Station

There were no identified paired sales found within the fourth mile of the Lynx Blue Line Light Rail.

The chart below summarizes the land sales identified within the fourth mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
3/4/2008	Scaleybark Partners, LLC	714,689	\$5,200,000	\$7.28	9	I-2	9/18/2006	TOD-M
1/18/2008	Crosland Greens, LLC	123,579	\$3,046,000	\$24.65	9	B-2	N/A	N/A
1/28/2008	Crosland Greens, LLC	49,144	\$1,250,000	\$25.44	9	B-2	N/A	N/A
			<b>2008 Average:</b>	<b>\$19.12</b>				
10/13/2006	Scout - JB, LLC	104,065	\$2,520,304	\$24.22	9	B-2	N/A	N/A

## Mile 5

The following stations are located within the fifth mile of the Lynx Blue Line Light Rail:

Station 10 – Woodlawn Station

Station 11 – Tyvola Road Station

The following is a paired sale that was identified in the fifth mile of the Lynx Blue Line Light Rail.

### 144 West Exmore Street – 2.929 acres or 127,587 SF

Sale 1 – March 16, 2000, \$312,000 or \$2.45/SF

Sale 2 – August 4, 2006, \$412,500 or \$3.23/SF

Total percent change – 32.21%

Annual percent change – 5.09% (no change in zoning)

The chart on the following page summarizes the land sales identified within the fifth mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
7/25/2007	De Quaing Nguyen*	94,307	\$1,300,000	\$13.78	11	B-2	N/A	N/A
8/4/2006	Southeast Commercial Corp.	127,587	\$412,500	\$3.23	10	I-2	N/A	N/A
6/28/2006	Claude L. Hensley*	94,307	\$1,200,000	\$12.72	11	B-2	N/A	N/A
			<b>2006 Average:</b>	<b>\$7.98</b>				
10/21/2004	4565 South Boulevard, LLC	31,493	\$355,000	\$11.27	10	I-2	N/A	N/A

\* Denotes a paired sale

## Mile 6

The following station is located within the sixth mile of the Lynx Blue Line Light Rail:

Station 12 – Archdale Station

There were no identified paired sales found within the sixth mile of the Lynx Blue Line Light Rail.

The chart below summarizes the land sales identified within the sixth mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
2/8/2005	John and Maria Hudson	46,173	\$300,000	\$6.50	11	I-2	N/A	N/A
2/17/2004	City of Charlotte	25,102	\$185,000	\$7.37	12	I-2	11/15/2004	TOD-M

## Mile 7

The following station is located within the seventh mile of the Lynx Blue Line Light Rail:

Station 13 – Arrowood Station

There were no identified paired sales found within the seventh mile of the Lynx Blue Line Light Rail.

The chart on the following page summarizes the land sales identified within the seventh mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
11/20/2007	Iglesia Pentecostal El Tabernaculo	84,593	\$150,000	\$1.77	13	O-15 (CD)	N/A	N/A

## Mile 8

The following stations are located within the eighth mile of the Lynx Blue Line Light Rail:

Station 14 – Sharron Road West Station

The following is a paired sale that was identified in the eighth mile of the Lynx Blue Line Light Rail.

### 807 Imperial Court – 48.532 acres or 2,114,054 SF (indicative of up-zoning to TOD)

Sale 1 – March 23, 2006, \$3,150,000 or \$1.49/SF

Sale 2 – August 29, 2007, \$9,161,000 or \$4.49/SF  
(Based off 46.866 acres or 2,041,483SF)

Total percentage change – 190.8%

Annual percentage change – 143.12%

The chart below summarizes the land sales identified within the eighth mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
8/29/2007	Arrowood Station, LLC*	2,037,736	\$9,161,000	\$4.50	13	BD	6/18/2007	TOD-M
3/23/2006	Jerry and Susan Helms, et. al. *	2,114,053	\$3,150,000	\$1.49	13	BD	6/18/2007	TOD-M
4/12/2005	The Cato Corporation	618,580	\$1,121,000	\$1.81	14	I-2	N/A	N/A
1/9/2002	John and Irene Blackmon	197,022	\$300,000	\$1.52	13	B-1 SCD	N/A	N/A

\* Denotes a paired sale

## Mile 9

The following station is located within the ninth mile of the Lynx Blue Line Light Rail:

Station 15 – I-485/South Boulevard Station

There were no identified paired sales found within the ninth mile of the Lynx Blue Line Light Rail.

The chart below summarizes the land sales identified within the ninth mile. The station number listed corresponds with the number listed above. The sales are listed by sales year and are ordered by ascending price per square foot, with an average provided where applicable.

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
1/31/2006	Five SAC Self Storage Corp.	20,865	\$225,000	\$10.78	14	I-2	N/A	N/A
6/18/2004	City of Charlotte	71,221	\$1,088,000	\$15.28	14	B-1	11/15/2004	TOD-M

<b>Summary Lynx Blue-Line Rail Corridor Comparable Sales Data</b>	
Total Number of Land Sales	65
Total Number of Paired Sales (Sale and Resale of Same Property)	11
Time Period Analyzed	2002-2008
Size of Land Sales	2,614 square feet; 0.06 acres to 2,114,053 square feet; 48.53 acres
Price Range	\$1.49/square foot; \$64,904/acre to \$189.04/square foot; \$8,124,582 acre
Annualized Change In Value of 9 Paired Sale With Change in Zoning	36.8 % (Station 8) to 143.1% (Station 13)
Annualized Change In Value of 2 Paired Sale With No Change in Zoning	5.09% (Station 10) to 16.61% (Station7)
Average Annualized Change In Value of 9 Paired Sales with Change Zoning	72.6%
Median Annualized Change In Value of 9 Paired Sales with Change in Zoning	56.8%
Percentage of Paired Sales That Occurred In Less Than 2 years	64% (7 sales)
Highest Concentration of Sales (30 sales - 46%)	Between Stations 7 and 8
Lowest Concentration of Sales (1 sale – 15%)	Station 1
Key Factors Influencing Sales Activity and Land Values along Lynx Blue-Line Corridor in order of Priority	
<ol style="list-style-type: none"> <li>5. Rezoning of land to Transit Oriented Development (TOD).</li> <li>6. Location along light rail with most desirable area being South End.</li> <li>7. Proximity to light rail stations.</li> <li>8. Strong local economy.</li> </ol>	

## Conclusions

As can be seen from this analysis, there was significant appreciation in land values along the light rail corridor which were primarily attributed to the ability of the property owners to rezone the property to allow a higher density of development under the Transit Orientated Development zoning regulations. It is our belief that the existing development and proposed development along the existing light rail corridor is in balance with current market demand. There are a significant number of other proposed projects that will not be completed along the light rail corridor due to the downturn in the economy. Once market conditions improve, we believe that many of their proposed projects will proceed. There has been such significant development in the CBD, South End, Dilworth, Plaza Midwood and NODA as well as additional proposed development in these areas that demand for mixed use development along any future major light rail corridor will most likely proceed at a slower pace than what has been experienced in the past between 2005 and 2008.

It is our opinion that the higher density projects along the existing light rail and future light rail projects will continue to be located in proximity to the central business district with lower density projects occurring the further you are from the central business district. The areas that will have the highest potential for redevelopment along the future light rail corridors are where the improvements are older and may no longer be the highest and best use of the site or contribute value. The majority of any proposed development will be located in proximity to the future transit stations. We are also aware of several development companies acquiring land for speculative purchases for redevelopment along the light rail corridors. Consequently, there will be a significant amount of land available for redevelopment, once market conditions improve that will most likely create an oversupply of land for mixed use development. We believe the oversupply will reduce the levels of appreciation that have occurred along the Lynx Blue Line.

# **ADDENDUM A**

## **SORTED SALES SHEETS**

## SORTED BY PRICE PER SQUARE FOOT

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
7/18/2006	Crescent Resources, LLC	20,374.00	\$3,851,400.00	\$189.04	4			
2/12/2007	222 South Church Street, LLC	9,008.00	\$1,500,000.00	\$166.52	3			
6/21/2007	Morehead Acquisitions, LLC	27,676.00	\$4,000,000.00	\$144.53	4			
1/10/2005	Starport Parking I, LLC	35,065.00	\$4,005,000.00	\$114.22	4			
3/25/2008	1200 South Boulevard, LLC	8,362	\$941,000	\$112.53	5	B-2	N/A	N/A
7/19/2007	Preferred Parking Service, LLC	5,924.00	\$572,000.00	\$96.56	1			
8/1/2005	New Americana Investments, LLC*	9,008	\$800,000	\$88.81	3			
7/31/2007	135 Morehead Apartments, LLC	104,805.00	\$8,155,000.00	\$77.81	5			
1/11/2007	Cherokee Southline, LLC	96,562	\$5,576,969	\$57.76	8	I-2	9/17/2007	TOD-M
8/7/2007	BSP Foster, LLC	166,138	\$9,375,000	\$56.43	8	I-2	10/19/2005	TOD-M
10/30/2007	South and Bland, LLC	155,073	\$8,500,000	\$54.81	6	MUDD	N/A	N/A
4/1/2008	Trehouse, LLC	15,000	\$800,000	\$53.33	7	UR-2(CD)	N/A	N/A
9/11/2007	Colonial Realty, LP	181,166	\$9,627,740	\$53.14	8	I-2	7/18/2005	TOD-M
8/31/2004	Southend Investment Prop., LLC	28,500	\$1,500,000	\$52.63	7	B-1	3/19/2007	TOD-M
8/18/2006	Tremont Partners, LP	124,843	\$6,500,000	\$52.07	7	I-2	10/19/2005	TOD-M
1/19/2007	Euclid, LLC	43,974	\$2,250,000	\$51.17	7	O-2	N/A	N/A
10/9/2003	Morehead Tryon Properties, LLC	19,397.00	\$981,500.00	\$50.60	5			
9/5/2007	Rappaport Pearson, LLC	13,141	\$620,000	\$47.18	7	B-1	N/A	N/A
1/29/2007	1423 South Tryon Partners, LLC	10,572	\$476,000	\$45.02	6	I-2	N/A	N/A
11/26/2003	HMV Camden, LLC	11,246	\$505,000	\$44.90	6			
2/1/2008	Backstreets Marketing Group, Inc.	8,000	\$350,000	\$43.75	7	B-1	N/A	N/A
1/31/2005	Shoe Properties, LLC	2,614	\$113,000	\$43.23	6	I-2	N/A	N/A
6/22/2007	Design Center Carolinas	21,270	\$893,000	\$41.98	7	UMUD	N/A	N/A
3/13/2008	Southend Development Group, LLC	43,560	\$1,700,000	\$39.03	7	I-2	N/A	N/A
1/22/2008	Fabrix Inc.	9,049	\$350,000	\$38.68	8	I-2	N/A	N/A
1/19/2007	Edward L. Keller	51,880	\$1,915,000	\$36.91	8	MUDD-O	N/A	N/A
8/14/2006	Hawkins Street Holdings, LLC*	183,867	\$6,650,000	\$36.17	7	I-2	4/17/2006	TOD-M
1/17/2007	Park Avenue Investors, LLC	80,491	\$2,800,000	\$34.79	7	B-1	10/18/2006	TOD-M
1/31/2006	Greenhawk Partners, LLC*	64,776	\$2,226,000	\$34.36	8	I-2	N/A	N/A
3/1/2006	Greenhawk Partners, LLC	186,742	\$6,356,000	\$34.04	8	I-2	9/17/2007	TOD-M
6/13/2006	Citiline, LLC*	30,056	\$969,646	\$32.26	8	I-2 & B-1	2/19/2007	TOD-M
1/5/2007	FMK Partners, LLC*	30,024	\$950,000	\$31.64	8	I-2	N/A	N/A
8/23/2005	Abberley Station, LP*	181,166	\$5,449,240	\$30.08	8	I-2	7/18/2005	TOD-M
8/8/2006	1927 Tryon Street Investors, LLC*	70,604	\$2,050,000	\$29.04	7	I-2	2/20/2006	TOD-M
3/22/2004	Jupiter Group, LLC	20,400	\$519,600	\$25.47	7	B-1	7/16/2007	TOD-M
1/28/2008	Crosland Greens, LLC	49,144	\$1,250,000	\$25.44	9	B-2	N/A	N/A
5/16/2006	McMahon Investments, LLC	8,113	\$204,000	\$25.14	5	I-2	N/A	N/A
7/20/2006	Greendoc, LLC	72,609	\$1,800,000	\$24.79	7	I-2	7/16/2007	TOD-M
1/18/2008	Crosland Greens, LLC	123,579	\$3,046,000	\$24.65	9	B-2	N/A	N/A
10/13/2006	Scout - JB, LLC	104,065	\$2,520,304	\$24.22	9	B-2	N/A	N/A
3/11/2002	Thomas P. Moore, III*	21,270	\$477,000	\$22.43	7	UMUD	N/A	N/A
8/4/2006	Southend Associates, LLC	38,594	\$805,725	\$20.88	7	I-2	4/17/2006	TOD-M
6/18/2004	2400 South Boulevard, LLC*	64,776	\$1,318,200	\$20.35	8	I-2	N/A	N/A
11/13/2002	SGH-Mooresville, LLC*	124,843	\$2,300,000	\$18.42	7	I-2	10/19/2005	TOD-M
2/15/2006	Arthur and Diane Pue	41,125	\$750,000	\$18.24	8	I-2	N/A	N/A
12/14/2005	Tidewater Corporate Dev., LLC	33,541	\$600,000	\$17.89	7	B-1	11/21/2005	TOD-M(CD)
6/18/2004	City of Charlotte	71,221	\$1,088,000	\$15.28	14			TOD-M
1/23/2004	Cecil E. Ormsby Jr.	30,056	\$450,000	\$14.97	8	I-2 & B-1	N/A	N/A
8/25/2005	1100 South Tryon Group I, LLC	29,577	\$433,000	\$14.64	6	I-2	N/A	N/A
7/25/2007	De Quaing Nguyen*	94,307	\$1,300,000	\$13.78	11	B-2	N/A	N/A
6/28/2006	Claude L. Hensley*	94,307	\$1,200,000	\$12.72	11	B-2	N/A	N/A
6/30/2005	Waypoint Development, LLC	38,159	\$455,000	\$11.92	7	B-1	N/A	N/A
10/21/2004	4565 South Boulevard, LLC	31,493	\$355,000	\$11.27	10	I-2	N/A	N/A
1/31/2006	Five SAC Self Storage Corp.	20,865	\$225,000	\$10.78	14	I-2	N/A	N/A
2/17/2004	City of Charlotte	25,102	\$185,000	\$7.37	12			TOD-M
3/4/2008	Scaleybark Partners, LLC	714,689	\$5,200,000	\$7.28	9	I-2	7/17/2006	TOD-M
2/22/2008	Kal Properties, LLC	262,631	\$1,761,500	\$6.71	8	I-2	N/A	N/A
6/22/2002	Welsh Partners, LLC*	30,024	\$200,000	\$6.66	8	I-2	N/A	N/A
2/8/2005	John and Maria Hudson	46,173	\$300,000	\$6.50	11	I-2	N/A	N/A
8/29/2007	Arrowood Station, LLC*	2,037,736	\$9,161,000	\$4.50	13	TOD-M	N/A	N/A
8/4/2006	Southeast Commercial Corp.	127,587	\$412,500	\$3.23	10	I-1	N/A	N/A
4/12/2005	The Cato Corporation	618,580	\$1,121,000	\$1.81	14	I-2	N/A	N/A
11/20/2007	Iglesia Pentecostal El Tabernaculo	84,593	\$150,000	\$1.77	13	O-15 (CD)	N/A	N/A
1/9/2002	John and Irene Blackmon	197,022	\$300,000	\$1.52	13	B-1SCD	N/A	N/A
3/23/2006	Jerry and Susan Helms, et. al. *	2,114,053	\$3,150,000	\$1.49	13	B-D (CD)	6/18/2007	TOD-M

## SORTED BY SALE DATE

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
4/1/2008	Trehouse, LLC	15,000	\$800,000	\$53.33	7	UR-2(CD)	N/A	N/A
3/25/2008	1200 South Boulevard, LLC	8,362	\$941,000	\$112.53	5	B-2	N/A	N/A
3/13/2008	Southend Development Group, LLC	43,560	\$1,700,000	\$39.03	7	I-2	N/A	N/A
3/4/2008	Scaleybark Partners, LLC	714,689	\$5,200,000	\$7.28	9	I-2	7/17/2006	TOD-M
2/22/2008	Kal Properties, LLC	262,631	\$1,761,500	\$6.71	8	I-2	N/A	N/A
2/1/2008	Backstreets Marketing Group, Inc.	8,000	\$350,000	\$43.75	7	B-1	N/A	N/A
1/28/2008	Crosland Greens, LLC	49,144	\$1,250,000	\$25.44	9	B-2	N/A	N/A
1/22/2008	Fabrix Inc.	9,049	\$350,000	\$38.68	8	I-2	N/A	N/A
1/18/2008	Crosland Greens, LLC	123,579	\$3,046,000	\$24.65	9	B-2	N/A	N/A
11/20/2007	Iglesia Pentecostal El Tabernaculo	84,593	\$150,000	\$1.77	13	O-15 (CD)	N/A	N/A
10/30/2007	South and Bland, LLC	155,073	\$8,500,000	\$54.81	6	MUDD	N/A	N/A
9/11/2007	Colonial Realty, LP	181,166	\$9,627,740	\$53.14	8	I-2	7/18/2005	TOD-M
9/5/2007	Rappaport Pearson, LLC	13,141	\$620,000	\$47.18	7	B-1	N/A	N/A
8/29/2007	Arrowood Station, LLC*	2,037,736	\$9,161,000	\$4.50	13	TOD-M	N/A	N/A
8/7/2007	BSP Foster, LLC	166,138	\$9,375,000	\$56.43	8	I-2	10/19/2005	TOD-M
7/31/2007	135 Morehead Apartments, LLC	104,805.00	\$8,155,000.00	\$77.81	5			
7/25/2007	De Quaing Nguyen*	94,307	\$1,300,000	\$13.78	11	B-2	N/A	N/A
7/19/2007	Preferred Parking Service, LLC	5,924.00	\$572,000.00	\$96.56	1			
6/22/2007	Design Center Carolinas	21,270	\$893,000	\$41.98	7	UMUD	N/A	N/A
6/21/2007	Morehead Acquisitions, LLC	27,676.00	\$4,000,000.00	\$144.53	4			
2/12/2007	222 South Church Street, LLC	9,008.00	\$1,500,000.00	\$166.52	3			
1/29/2007	1423 South Tryon Partners, LLC	10,572	\$476,000	\$45.02	6	I-2	N/A	N/A
1/19/2007	Euclid, LLC	43,974	\$2,250,000	\$51.17	7	O-2	N/A	N/A
1/19/2007	Edward L. Keller	51,880	\$1,915,000	\$36.91	8	MUDD-O	N/A	N/A
1/17/2007	Park Avenue Investors, LLC	80,491	\$2,800,000	\$34.79	7	B-1	10/18/2006	TOD-M
1/11/2007	Cherokee Southline, LLC	96,562	\$5,576,969	\$57.76	8	I-2	9/17/2007	TOD-M
1/5/2007	FMK Partners, LLC*	30,024	\$950,000	\$31.64	8	I-2	N/A	N/A
10/13/2006	Scout - JB, LLC	104,065	\$2,520,304	\$24.22	9	B-2	N/A	N/A
8/18/2006	Tremont Partners, LP	124,843	\$6,500,000	\$52.07	7	I-2	10/19/2005	TOD-M
8/14/2006	Hawkins Street Holdings, LLC*	183,867	\$6,650,000	\$36.17	7	I-2	4/17/2006	TOD-M
8/8/2006	1927 Tryon Street Investors, LLC*	70,604	\$2,050,000	\$29.04	7	I-2	2/20/2006	TOD-M
8/4/2006	Southeast Commercial Corp.	127,587	\$412,500	\$3.23	10	I-1	N/A	N/A
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7/20/2006	Greendoc, LLC	72,609	\$1,800,000	\$24.79	7	I-2	7/16/2007	TOD-M
7/18/2006	Crescent Resources, LLC	20,374.00	\$3,851,400.00	\$189.04	4			
6/28/2006	Claude L. Hensley*	94,307	\$1,200,000	\$12.72	11	B-2	N/A	N/A
6/13/2006	Citiline, LLC*	30,056	\$969,646	\$32.26	8	I-2 & B-1	2/19/2007	TOD-M
5/16/2006	McMahon Investments, LLC	8,113	\$204,000	\$25.14	5	I-2	N/A	N/A
3/23/2006	Jerry and Susan Helms, et. al. *	2,114,053	\$3,150,000	\$1.49	13	B-D (CD)	6/18/2007	TOD-M
3/1/2006	Greenhawk Partners, LLC	186,742	\$6,356,000	\$34.04	8	I-2	9/17/2007	TOD-M
2/15/2006	Arthur and Diane Pue	41,125	\$750,000	\$18.24	8	I-2	N/A	N/A
1/31/2006	Greenhawk Partners, LLC*	64,776	\$2,226,000	\$34.36	8	I-2	N/A	N/A
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12/14/2005	Tidewater Corporate Dev., LLC	33,541	\$600,000	\$17.89	7	B-1	11/21/2005	TOD-M(CD)
8/25/2005	1100 South Tryon Group I, LLC	29,577	\$433,000	\$14.64	6	I-2	N/A	N/A
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2/8/2005	John and Maria Hudson	46,173	\$300,000	\$6.50	11	I-2	N/A	N/A
1/31/2005	Shoe Properties, LLC	2,614	\$113,000	\$43.23	6	I-2	N/A	N/A
1/10/2005	Starport Parking I, LLC	35,065.00	\$4,005,000.00	\$114.22	4			
10/21/2004	4565 South Boulevard, LLC	31,493	\$355,000	\$11.27	10	I-2	N/A	N/A
8/31/2004	Southend Investment Prop., LLC	28,500	\$1,500,000	\$52.63	7	B-1	3/19/2007	TOD-M
6/18/2004	2400 South Boulevard, LLC*	64,776	\$1,318,200	\$20.35	8	I-2	N/A	N/A
6/18/2004	City of Charlotte	71,221	\$1,088,000	\$15.28	14			TOD-M
3/22/2004	Jupiter Group, LLC	20,400	\$519,600	\$25.47	7	B-1	7/16/2007	TOD-M
2/17/2004	City of Charlotte	25,102	\$185,000	\$7.37	12			TOD-M
1/23/2004	Cecil E. Ormsby Jr.	30,056	\$450,000	\$14.97	8	I-2 & B-1	N/A	N/A
11/26/2003	HMV Camden, LLC	11,246	\$505,000	\$44.90	6			
10/9/2003	Morehead Tryon Properties, LLC	19,397.00	\$981,500.00	\$50.60	5			
11/13/2002	SGH-Mooresville, LLC*	124,843	\$2,300,000	\$18.42	7	I-2	10/19/2005	TOD-M
6/22/2002	Welsh Partners, LLC*	30,024	\$200,000	\$6.66	8	I-2	N/A	N/A
3/11/2002	Thomas P. Moore, III*	21,270	\$477,000	\$22.43	7	UMUD	N/A	N/A
1/9/2002	John and Irene Blackmon	197,022	\$300,000	\$1.52	13	B-1SCD	N/A	N/A

**SORTED BY PROXIMITY TO STATION**

Sale Date	Owner	Size (SF)	Sale Price	Price/SF	Station Proximity	Initial Zoning	Date	New Zoning
7/19/2007	Preferred Parking Service, LLC	5,924.00	\$572,000.00	\$96.56	1			
2/12/2007	222 South Church Street, LLC	9,008.00	\$1,500,000.00	\$166.52	3			
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5/16/2006	McMahon Investments, LLC	8,113	\$204,000	\$25.14	5	I-2	N/A	N/A
11/26/2003	HMV Camden, LLC	11,246	\$505,000	\$44.90	6			
1/29/2007	1423 South Tryon Partners, LLC	10,572	\$476,000	\$45.02	6	I-2	N/A	N/A
8/25/2005	1100 South Tryon Group I, LLC	29,577	\$433,000	\$14.64	6	I-2	N/A	N/A
1/31/2005	Shoe Properties, LLC	2,614	\$113,000	\$43.23	6	I-2	N/A	N/A
10/30/2007	South and Bland, LLC	155,073	\$8,500,000	\$54.81	6	MUDD	N/A	N/A
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4/1/2008	Trehouse, LLC	15,000	\$800,000	\$53.33	7	UR-2(CD)	N/A	N/A
1/17/2007	Park Avenue Investors, LLC	80,491	\$2,800,000	\$34.79	7	B-1	10/18/2006	TOD-M
6/22/2007	Design Center Carolinas	21,270	\$893,000	\$41.98	7	UMUD	N/A	N/A
9/5/2007	Rappaport Pearson, LLC	13,141	\$620,000	\$47.18	7	B-1	N/A	N/A
1/19/2007	Euclid, LLC	43,974	\$2,250,000	\$51.17	7	O-2	N/A	N/A
7/20/2006	Greendoc, LLC	72,609	\$1,800,000	\$24.79	7	I-2	7/16/2007	TOD-M
3/22/2004	Jupiter Group, LLC	20,400	\$519,600	\$25.47	7	B-1	7/16/2007	TOD-M
8/8/2006	1927 Tryon Street Investors, LLC*	70,604	\$2,050,000	\$29.04	7	I-2	2/20/2006	TOD-M
8/14/2006	Hawkins Street Holdings, LLC*	183,867	\$6,650,000	\$36.17	7	I-2	4/17/2006	TOD-M
8/18/2006	Tremont Partners, LP	124,843	\$6,500,000	\$52.07	7	I-2	10/19/2005	TOD-M
3/11/2002	Thomas P. Moore, III*	21,270	\$477,000	\$22.43	7	UMUD	N/A	N/A
11/13/2002	SGH-Mooresville, LLC*	124,843	\$2,300,000	\$18.42	7	I-2	10/19/2005	TOD-M
12/14/2005	Tidewater Corporate Dev., LLC	33,541	\$600,000	\$17.89	7	B-1	11/21/2005	TOD-M(CD)
6/30/2005	Waypoint Development, LLC	38,159	\$455,000	\$11.92	7	B-1	N/A	N/A
8/4/2006	Southend Associates, LLC	38,594	\$805,725	\$20.88	7	I-2	4/17/2006	TOD-M
2/22/2008	Kal Properties, LLC	262,631	\$1,761,500	\$6.71	8	I-2	N/A	N/A
1/22/2008	Fabrix Inc.	9,049	\$350,000	\$38.68	8	I-2	N/A	N/A
1/5/2007	FMK Partners, LLC*	30,024	\$950,000	\$31.64	8	I-2	N/A	N/A
1/19/2007	Edward L. Keller	51,880	\$1,915,000	\$36.91	8	MUDD-O	N/A	N/A
9/11/2007	Colonial Realty, LP	181,166	\$9,627,740	\$53.14	8	I-2	7/18/2005	TOD-M
8/7/2007	BSP Foster, LLC	166,138	\$9,375,000	\$56.43	8	I-2	10/19/2005	TOD-M
1/11/2007	Cherokee Southline, LLC	96,562	\$5,576,969	\$57.76	8	I-2	9/17/2007	TOD-M
2/15/2006	Arthur and Diane Pue	41,125	\$750,000	\$18.24	8	I-2	N/A	N/A
6/13/2006	Citiline, LLC*	30,056	\$969,646	\$32.26	8	I-2 & B-1	2/19/2007	TOD-M
3/1/2006	Greenhawk Partners, LLC	186,742	\$6,356,000	\$34.04	8	I-2	9/17/2007	TOD-M
1/31/2006	Greenhawk Partners, LLC*	64,776	\$2,226,000	\$34.36	8	I-2	N/A	N/A
1/23/2004	Cecil E. Ormsby Jr.	30,056	\$450,000	\$14.97	8	I-2 & B-1	N/A	N/A
6/18/2004	2400 South Boulevard, LLC*	64,776	\$1,318,200	\$20.35	8	I-2	N/A	N/A
6/22/2002	Welsh Partners, LLC*	30,024	\$200,000	\$6.66	8	I-2	N/A	N/A
8/23/2005	Abberley Station, LP*	181,166	\$5,449,240	\$30.08	8	I-2	7/18/2005	TOD-M
3/4/2008	Scaleybark Partners, LLC	714,689	\$5,200,000	\$7.28	9	I-2	7/17/2006	TOD-M
1/18/2008	Crosland Greens, LLC	123,579	\$3,046,000	\$24.65	9	B-2	N/A	N/A
1/28/2008	Crosland Greens, LLC	49,144	\$1,250,000	\$25.44	9	B-2	N/A	N/A
10/13/2006	Scout - JB, LLC	104,065	\$2,520,304	\$24.22	9	B-2	N/A	N/A
8/4/2006	Southeast Commercial Corp.	127,587	\$412,500	\$3.23	10	I-1	N/A	N/A
10/21/2004	4565 South Boulevard, LLC	31,493	\$355,000	\$11.27	10	I-2	N/A	N/A
7/25/2007	De Quaing Nguyen*	94,307	\$1,300,000	\$13.78	11	B-2	N/A	N/A
6/28/2006	Claude L. Hensley*	94,307	\$1,200,000	\$12.72	11	B-2	N/A	N/A
2/8/2005	John and Maria Hudson	46,173	\$300,000	\$6.50	11	I-2	N/A	N/A
2/17/2004	City of Charlotte	25,102	\$185,000	\$7.37	12			TOD-M
11/20/2007	Iglesia Pentecostal El Tabernaculo	84,593	\$150,000	\$1.77	13	O-15 (CD)	N/A	N/A
8/29/2007	Arrowood Station, LLC*	2,037,736	\$9,161,000	\$4.50	13	TOD-M	N/A	N/A
3/23/2006	Jerry and Susan Helms, et. al. *	2,114,053	\$3,150,000	\$1.49	13	B-D (CD)	6/18/2007	TOD-M
1/9/2002	John and Irene Blackmon	197,022	\$300,000	\$1.52	13	B-1SCD	N/A	N/A
4/12/2005	The Cato Corporation	618,580	\$1,121,000	\$1.81	14	I-2	N/A	N/A
1/31/2006	Five SAC Self Storage Corp.	20,865	\$225,000	\$10.78	14	I-2	N/A	N/A
6/18/2004	City of Charlotte	71,221	\$1,088,000	\$15.28	14			TOD-M

## **Appendix D: Model Details**

**Table D-1: Summary of Potential Tax Revenue Generation***(Figures in constant 2008 dollars)*

Year	Low Appreciation / Baseline Growth Scenario			Moderate Appreciation / Baseline Growth Scenario			High Appreciation / Accelerated Growth Scenario		
	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues	Annual MSD Revenues	Annual TIF Revenues	Total MSD and TIF Revenues
2010	\$750,348	\$284,593	\$1,034,941	\$1,522,005	\$528,913	\$2,050,918	\$2,313,982	\$765,652	\$3,079,634
2011	\$762,759	\$569,187	\$1,331,946	\$1,547,548	\$821,760	\$2,369,308	\$2,352,312	\$1,058,627	\$3,410,940
2012	\$775,171	\$853,780	\$1,628,951	\$1,573,139	\$1,115,155	\$2,688,294	\$2,390,715	\$1,352,151	\$3,742,866
2013	\$787,582	\$1,138,374	\$1,925,956	\$1,598,777	\$1,409,100	\$3,007,877	\$2,429,189	\$1,646,225	\$4,075,414
2014	\$799,993	\$1,422,967	\$2,222,961	\$1,624,464	\$1,703,596	\$3,328,059	\$2,467,736	\$1,940,850	\$4,408,586
2015	\$812,405	\$1,707,561	\$2,519,965	\$1,650,198	\$1,998,644	\$3,648,842	\$2,506,355	\$2,236,028	\$4,742,383
2016	\$842,133	\$2,389,224	\$3,231,357	\$1,710,615	\$2,691,317	\$4,401,932	\$2,611,267	\$3,037,908	\$5,649,175
2017	\$871,861	\$3,070,888	\$3,942,749	\$1,771,125	\$3,385,065	\$5,156,190	\$2,716,361	\$3,841,170	\$6,557,531
2018	\$901,589	\$3,752,551	\$4,654,140	\$1,831,729	\$4,079,891	\$5,911,620	\$2,821,635	\$4,645,820	\$7,467,455
2019	\$931,317	\$4,434,215	\$5,365,532	\$1,892,427	\$4,775,799	\$6,668,227	\$2,927,092	\$5,451,861	\$8,378,953
2020	\$961,045	\$5,115,879	\$6,076,924	\$1,953,220	\$5,472,792	\$7,426,013	\$3,032,731	\$6,259,297	\$9,292,028
2021	\$990,050	\$5,780,975	\$6,771,025	\$2,012,663	\$6,154,306	\$8,166,969	\$3,132,902	\$7,024,934	\$10,157,836
2022	\$1,019,056	\$6,446,071	\$7,465,127	\$2,072,204	\$6,836,939	\$8,909,143	\$3,233,248	\$7,791,911	\$11,025,159
2023	\$1,048,061	\$7,111,167	\$8,159,229	\$2,131,843	\$7,520,695	\$9,652,537	\$3,333,769	\$8,560,230	\$11,894,000
2024	\$1,077,067	\$7,776,264	\$8,853,331	\$2,191,579	\$8,205,577	\$10,397,156	\$3,434,467	\$9,329,897	\$12,764,364
2025	\$1,106,072	\$8,441,360	\$9,547,432	\$2,251,415	\$8,891,589	\$11,143,004	\$3,535,342	\$10,100,915	\$13,636,257
2026	\$1,135,694	\$9,120,576	\$10,256,270	\$2,312,580	\$9,592,854	\$11,905,435	\$3,635,683	\$10,867,860	\$14,503,543
2027	\$1,165,315	\$9,799,793	\$10,965,108	\$2,373,857	\$10,295,388	\$12,669,245	\$3,736,211	\$11,636,225	\$15,372,436
2028	\$1,194,936	\$10,479,009	\$11,673,945	\$2,435,244	\$10,999,195	\$13,434,439	\$3,836,925	\$12,406,017	\$16,242,942
2029	\$1,224,558	\$11,158,226	\$12,382,783	\$2,496,743	\$11,704,277	\$14,201,020	\$3,937,826	\$13,177,238	\$17,115,065
2030	\$1,254,179	\$11,837,442	\$13,091,621	\$2,558,353	\$12,410,640	\$14,968,994	\$4,038,915	\$13,949,894	\$17,988,810
2031	\$1,283,842	\$12,517,617	\$13,801,459	\$2,620,159	\$13,119,246	\$15,739,405	\$4,140,704	\$14,727,898	\$18,868,602
2032	\$1,313,505	\$13,197,792	\$14,511,297	\$2,682,079	\$13,829,153	\$16,511,232	\$4,242,688	\$15,507,396	\$19,750,083
2033	\$1,343,168	\$13,877,966	\$15,221,134	\$2,744,112	\$14,540,366	\$17,284,479	\$4,344,868	\$16,288,391	\$20,633,258
2034	\$1,372,831	\$14,558,141	\$15,930,972	\$2,806,260	\$15,252,889	\$18,059,149	\$4,447,244	\$17,070,888	\$21,518,132
2035	\$1,402,494	\$15,238,316	\$16,640,810	\$2,868,522	\$15,966,726	\$18,835,248	\$4,549,818	\$17,854,892	\$22,404,710
Total	\$27,127,031	\$182,079,935	\$209,206,965	\$55,232,861	\$193,301,874	\$248,534,735	\$86,149,986	\$218,530,175	\$304,680,160

Source: BAE, 2008.

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**Table D-2: Key Assumptions**

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**Taxation and Property Value Appreciation Assumptions**

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Tax Rates (a)	Scenarios		
	Low	Moderate	High
MSD Tax Rate	0.02%	0.04%	0.06%
TIF Tax Rate	0.46%	0.46%	0.46%
<b>Streetcar Value Premium (b)</b>			
Residential	0.00%	5.00%	10.00%
Commercial	0.00%	5.00%	10.00%
<b>Neighborhood Reinvestment Factor (Annual) (c)</b>			
Residential	0.00%	0.30%	0.30%
Commercial	0.00%	0.00%	0.00%

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## Notes:

(a) Tax rate assumptions are as follows:

-MSD tax rates show various possible tax rates which could be applied to properties in the streetcar corridor. With a current combined City and County tax rate of approximately 1.3% in Charlotte and a maximum allowable property tax rate of 1.5% under state law, the maximum MSD tax rate could go as high as approximately 0.20%.

-TIF tax rate is based on the 2008 City of Charlotte property tax rate. (Note this is different from the combined City and County rate of 1.3%).

(b) Streetcar value premium based on case study research regarding increases in land value for properties near transit systems.

(c) Denotes the estimated increase in improved value attributable to renovations, additions, and small-scale infill development.

Sources: Warren &amp; Associates, 2008; BAE, 2008; and other sources as listed above.

**Table D-3: Residential and Non-Residential Assessed Value by Segment****2003 Assessed Values**

Segment	All Parcels			Opportunity Sites		
	Improved Value	Land Value	Total Value	Improved Value	Land Value	Total Value
<b>West</b>						
Residential	\$85,788,700	\$19,284,000	\$105,072,700	\$2,474,800	\$660,900	\$3,135,700
Non-Residential	\$18,129,000	\$16,003,600	\$34,132,600	\$11,184,600	\$10,988,000	\$22,172,600
Total	\$103,917,700	\$35,287,600	\$139,205,300	\$13,659,400	\$11,648,900	\$25,308,300
<b>Downtown</b>						
Residential	\$3,211,400	\$3,109,200	\$6,320,600	\$0	\$0	\$0
Non-Residential	\$1,699,801,240	\$529,862,500	\$2,229,663,740	\$12,609,200	\$50,039,200	\$62,648,400
Total	\$1,703,012,640	\$532,971,700	\$2,235,984,340	\$12,609,200	\$50,039,200	\$62,648,400
<b>Midtown</b>						
Residential	\$112,898,600	\$99,251,600	\$212,150,200	\$3,088,400	\$2,766,600	\$5,855,000
Non-Residential	\$152,179,700	\$99,265,600	\$251,445,300	\$30,937,900	\$25,646,800	\$56,584,700
Total	\$265,078,300	\$198,517,200	\$463,595,500	\$34,026,300	\$28,413,400	\$62,439,700
<b>East</b>						
Residential	\$107,153,400	\$36,144,300	\$143,297,700	\$600,100	\$2,466,500	\$3,066,600
Non-Residential	\$61,870,700	\$68,014,100	\$129,884,800	\$29,437,700	\$34,118,800	\$63,556,500
Total	\$169,024,100	\$104,158,400	\$273,182,500	\$30,037,800	\$36,585,300	\$66,623,100
<b>Total</b>						
Residential	\$309,052,100	\$157,789,100	\$466,841,200	\$6,163,300	\$5,894,000	\$12,057,300
Non-Residential	\$1,931,980,640	\$713,145,800	\$2,645,126,440	\$84,169,400	\$120,792,800	\$204,962,200
Total	\$2,241,032,740	\$870,934,900	\$3,111,967,640	\$90,332,700	\$126,686,800	\$217,019,500

**Table D-3: Residential and Non-Residential Assessed Value by Segment**

<b>2010 Assessed Values -- Estimated (a)</b>						
<i>(Figures in constant 2008 dollars)</i>						
<b>Segment</b>	<b>All parcels (b)</b>			<b>Opportunity Sites (b)</b>		
	<b>Improved Value</b>	<b>Land Value</b>	<b>Total Value</b>	<b>Improved Value</b>	<b>Land Value</b>	<b>Total Value</b>
<b>West</b>						
Residential	\$101,246,251	\$22,758,623	\$124,004,874	\$2,920,714	\$779,982	\$3,700,696
Non-Residential	\$21,511,989	\$18,989,976	\$40,501,965	\$13,271,719	\$13,038,432	\$26,310,151
Total	\$122,758,240	\$41,748,599	\$164,506,839	\$16,192,433	\$13,818,414	\$30,010,847
<b>Downtown</b>						
Residential	\$3,790,035	\$3,669,421	\$7,459,456	\$0	\$0	\$0
Non-Residential	\$2,016,995,202	\$628,738,287	\$2,645,733,489	\$14,962,159	\$59,376,840	\$74,338,999
Total	\$2,020,785,237	\$632,407,708	\$2,653,192,945	\$14,962,159	\$59,376,840	\$74,338,999
<b>Midtown</b>						
Residential	\$133,240,858	\$117,134,919	\$250,375,777	\$3,644,873	\$3,265,091	\$6,909,964
Non-Residential	\$180,577,421	\$117,789,206	\$298,366,628	\$36,711,113	\$30,432,660	\$67,143,773
Total	\$313,818,279	\$234,924,125	\$548,742,405	\$40,355,986	\$33,697,750	\$74,053,737
<b>East</b>						
Residential	\$126,460,478	\$42,656,840	\$169,117,319	\$708,227	\$2,910,918	\$3,619,145
Non-Residential	\$73,416,175	\$80,705,973	\$154,122,148	\$34,930,966	\$40,485,590	\$75,416,556
Total	\$199,876,653	\$123,362,814	\$323,239,467	\$35,639,193	\$43,396,508	\$79,035,701
<b>Total</b>						
Residential	\$364,737,623	\$186,219,803	\$550,957,426	\$7,710,158	\$7,373,269	\$15,083,427
Non-Residential	\$2,292,500,787	\$846,223,442	\$3,138,724,230	\$105,862,539	\$151,924,957	\$257,787,496
Total	\$2,657,238,410	\$1,032,443,246	\$3,689,681,656	\$113,572,696	\$159,298,226	\$272,870,923

<b>Opportunity Sites, Value Per Acre</b>			
<b>Segment</b>	<b>Total Value</b>	<b>Site Acreage</b>	<b>Value / Acre</b>
	<b>Opportunity Sites</b>		
West	\$30,010,847	122.8	\$244,366
Downtown	\$74,338,999	43.9	\$1,692,870
Midtown	\$74,053,737	147.0	\$503,918
East	\$79,035,701	161.8	\$488,405

(a) 2010 property tax values have been estimated by applying residential and commercial property appreciation assumptions for 2003 through 2010, based on the Case-Shiller Home Price Index and MIT TBI Commercial Property Index. The County commissioners voted on 12/2/08 to postpone revaluation until 2010, which would be the first such revaluation since 2003. Shown above is an estimate of values in 2010. Actual values which will be based on current market conditions in 2010 and could be substantially different from the estimate shown above.

(b) Excludes assessed values of exempt parcels that are not subject to property tax assessments.

Source: BAE, 2008.

**Table D-4: Projected New Residential and Commercial Development by Time Period**

Time Period	BASELINE					ACCELERATED				
	West Segment					West Segment				
	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
2010-2015	100	122	2,826	20,736	5	100	122	2,826	20,736	5
2016-2020	152	186	4,297	34,029	9	196	240	4,796	34,029	9
2021-2025	152	186	4,297	38,283	10	196	240	4,796	48,625	13
2026-2030	123	126	3,166	44,282	12	213	218	4,095	63,323	17
2031-2035	119	122	3,070	41,432	11	212	217	4,032	53,727	14
	646	742	17,656	178,762	47	917	1,037	20,545	220,440	58
Time Period	Downtown Segment					Downtown Segment				
	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
	2010-2015	205	391	25,564	302,040	79	205	391	25,564	302,040
2016-2020	434	733	50,063	912,229	239	490	828	52,644	912,229	239
2021-2025	488	679	50,063	821,006	215	488	679	50,063	821,006	215
2026-2030	498	573	45,958	681,559	179	532	612	47,200	693,766	182
2031-2035	544	520	45,681	676,861	177	567	542	46,469	680,217	178
	2,169	2,896	217,329	3,393,695	889	2,282	3,052	221,940	3,409,258	893
Time Period	Midtown Segment					Midtown Segment				
	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
	2010-2015	84	143	12,770	70,642	19	84	143	12,770	70,642
2016-2020	93	130	12,531	81,149	21	184	257	18,059	91,647	24
2021-2025	93	130	12,531	81,149	21	184	257	18,059	103,573	27
2026-2030	260	302	31,654	102,622	27	270	314	32,218	122,512	32
2031-2035	256	297	31,193	98,597	26	310	360	34,159	99,818	26
	786	1,002	100,679	434,159	114	1,032	1,331	115,265	488,192	128
Time Period	East Segment					East Segment				
	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
	2010-2015	80	120	4,935	40,644	11	80	120	4,935	40,644
2016-2020	89	134	5,507	59,041	15	164	247	6,902	69,256	18
2021-2025	89	134	5,507	67,475	18	164	247	6,902	77,690	20
2026-2030	124	166	7,144	84,190	22	137	183	7,367	95,554	25
2031-2035	134	149	6,966	80,883	21	152	169	7,253	87,405	23
	516	703	30,059	332,233	87	697	966	33,359	370,549	97
Time Period	Total					Total				
	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms	For Sale Units	Apt Units	Retail Sq. Ft.	Office Sq. Ft.	Hotel Rooms
	2010-2015	469	776	46,095	434,062	114	469	776	46,095	434,062
2016-2020	768	1,183	72,398	1,086,448	285	1,034	1,572	82,401	1,107,161	290
2021-2025	822	1,129	72,398	1,007,913	264	1,032	1,423	79,820	1,050,894	275
2026-2030	1,005	1,167	87,922	912,653	239	1,152	1,327	90,880	975,155	256
2031-2035	1,053	1,088	86,910	897,773	235	1,241	1,288	91,913	921,167	241
	4,117	5,343	365,723	4,338,849	1,137	4,928	6,386	391,109	4,488,439	1,176

Sources: Warren & Associates, 2008; BAE, 2008.

**Table D-5: Projected Value of New Development by Time Period, Baseline Growth Scenario**

*(Figures in constant 2008 dollars)*

<b>Total</b>										
<b>Year</b>	<b>RESIDENTIAL DEVELOPMENT</b>				<b>COMMERCIAL DEVELOPMENT</b>					
	<b>Value of New Development</b>		<b>Value of Existing</b>	<b>Total Net Increase in Value</b>	<b>Value of New Development</b>			<b>Value of Existing</b>	<b>Total Net Increase in Value</b>	
	<b>For Sale</b>	<b>Apartment</b>	<b>Development</b>		<b>Retail</b>	<b>Office</b>	<b>Hotel</b>	<b>Development</b>		
2010	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2011	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2012	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2013	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2014	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2015	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2016	\$44,429,300	\$34,420,212	\$3,106,458	\$75,743,054	\$3,805,405	\$61,186,383	\$11,224,325	\$3,319,045	\$72,897,068	
2017	\$44,429,300	\$34,420,212	\$3,106,458	\$75,743,054	\$3,805,405	\$61,186,383	\$11,224,325	\$3,319,045	\$72,897,068	
2018	\$44,429,300	\$34,420,212	\$3,106,458	\$75,743,054	\$3,805,405	\$61,186,383	\$11,224,325	\$3,319,045	\$72,897,068	
2019	\$44,429,300	\$34,420,212	\$3,106,458	\$75,743,054	\$3,805,405	\$61,186,383	\$11,224,325	\$3,319,045	\$72,897,068	
2020	\$44,429,300	\$34,420,212	\$3,106,458	\$75,743,054	\$3,805,405	\$61,186,383	\$11,224,325	\$3,319,045	\$72,897,068	
2021	\$48,209,300	\$32,693,940	\$3,106,458	\$77,796,782	\$3,805,405	\$56,181,457	\$10,412,963	\$3,169,074	\$67,230,752	
2022	\$48,209,300	\$32,693,940	\$3,106,458	\$77,796,782	\$3,805,405	\$56,181,457	\$10,412,963	\$3,169,074	\$67,230,752	
2023	\$48,209,300	\$32,693,940	\$3,106,458	\$77,796,782	\$3,805,405	\$56,181,457	\$10,412,963	\$3,169,074	\$67,230,752	
2024	\$48,209,300	\$32,693,940	\$3,106,458	\$77,796,782	\$3,805,405	\$56,181,457	\$10,412,963	\$3,169,074	\$67,230,752	
2025	\$48,209,300	\$32,693,940	\$3,106,458	\$77,796,782	\$3,805,405	\$56,181,457	\$10,412,963	\$3,169,074	\$67,230,752	
2026	\$57,088,000	\$33,890,076	\$3,568,520	\$87,409,556	\$4,582,079	\$49,756,927	\$9,428,812	\$3,070,876	\$60,696,942	
2027	\$57,088,000	\$33,890,076	\$3,568,520	\$87,409,556	\$4,582,079	\$49,756,927	\$9,428,812	\$3,070,876	\$60,696,942	
2028	\$57,088,000	\$33,890,076	\$3,568,520	\$87,409,556	\$4,582,079	\$49,756,927	\$9,428,812	\$3,070,876	\$60,696,942	
2029	\$57,088,000	\$33,890,076	\$3,568,520	\$87,409,556	\$4,582,079	\$49,756,927	\$9,428,812	\$3,070,876	\$60,696,942	
2030	\$57,088,000	\$33,890,076	\$3,568,520	\$87,409,556	\$4,582,079	\$49,756,927	\$9,428,812	\$3,070,876	\$60,696,942	
2031	\$60,368,400	\$31,579,500	\$3,513,121	\$88,434,779	\$4,532,835	\$49,075,294	\$9,275,084	\$3,002,515	\$59,880,697	
2032	\$60,368,400	\$31,579,500	\$3,513,121	\$88,434,779	\$4,532,835	\$49,075,294	\$9,275,084	\$3,002,515	\$59,880,697	
2033	\$60,368,400	\$31,579,500	\$3,513,121	\$88,434,779	\$4,532,835	\$49,075,294	\$9,275,084	\$3,002,515	\$59,880,697	
2034	\$60,368,400	\$31,579,500	\$3,513,121	\$88,434,779	\$4,532,835	\$49,075,294	\$9,275,084	\$3,002,515	\$59,880,697	
2035	\$60,368,400	\$31,579,500	\$3,513,121	\$88,434,779	\$4,532,835	\$49,075,294	\$9,275,084	\$3,002,515	\$59,880,697	

Source: BAE, 2008.

**Table D-6: Projected Value of New Development by Time Period, Accelerated Growth Scenario**

*(Figures in constant 2008 dollars)*

<b>Total</b>										
<b>Year</b>	<b>RESIDENTIAL DEVELOPMENT</b>				<b>COMMERCIAL DEVELOPMENT</b>					
	<b>Value of New Development</b>		<b>Value of Existing</b>	<b>Total Net</b>	<b>Value of New Development</b>			<b>Value of Existing</b>	<b>Total Net</b>	
	<b>For Sale</b>	<b>Apartment</b>	<b>Development</b>	<b>Increase in Value</b>	<b>Retail</b>	<b>Office</b>	<b>Hotel</b>	<b>Development</b>	<b>Increase in Value</b>	
2010	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2011	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2012	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2013	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2014	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2015	\$21,289,333	\$18,468,550	\$1,741,727	\$38,016,156	\$1,976,416	\$19,587,281	\$3,736,989	\$1,259,833	\$24,040,853	
2016	\$57,456,000	\$44,986,968	\$4,365,221	\$98,077,747	\$4,304,070	\$62,055,278	\$11,438,315	\$3,450,518	\$74,347,145	
2017	\$57,456,000	\$44,986,968	\$4,365,221	\$98,077,747	\$4,304,070	\$62,055,278	\$11,438,315	\$3,450,518	\$74,347,145	
2018	\$57,456,000	\$44,986,968	\$4,365,221	\$98,077,747	\$4,304,070	\$62,055,278	\$11,438,315	\$3,450,518	\$74,347,145	
2019	\$57,456,000	\$44,986,968	\$4,365,221	\$98,077,747	\$4,304,070	\$62,055,278	\$11,438,315	\$3,450,518	\$74,347,145	
2020	\$57,456,000	\$44,986,968	\$4,365,221	\$98,077,747	\$4,304,070	\$62,055,278	\$11,438,315	\$3,450,518	\$74,347,145	
2021	\$57,316,000	\$40,223,736	\$4,152,201	\$93,387,535	\$4,159,628	\$57,997,853	\$10,857,009	\$3,396,659	\$69,617,832	
2022	\$57,316,000	\$40,223,736	\$4,152,201	\$93,387,535	\$4,159,628	\$57,997,853	\$10,857,009	\$3,396,659	\$69,617,832	
2023	\$57,316,000	\$40,223,736	\$4,152,201	\$93,387,535	\$4,159,628	\$57,997,853	\$10,857,009	\$3,396,659	\$69,617,832	
2024	\$57,316,000	\$40,223,736	\$4,152,201	\$93,387,535	\$4,159,628	\$57,997,853	\$10,857,009	\$3,396,659	\$69,617,832	
2025	\$57,316,000	\$40,223,736	\$4,152,201	\$93,387,535	\$4,159,628	\$57,997,853	\$10,857,009	\$3,396,659	\$69,617,832	
2026	\$64,035,400	\$37,898,508	\$4,023,232	\$97,910,676	\$4,723,329	\$52,472,654	\$10,074,533	\$3,359,675	\$63,910,841	
2027	\$64,035,400	\$37,898,508	\$4,023,232	\$97,910,676	\$4,723,329	\$52,472,654	\$10,074,533	\$3,359,675	\$63,910,841	
2028	\$64,035,400	\$37,898,508	\$4,023,232	\$97,910,676	\$4,723,329	\$52,472,654	\$10,074,533	\$3,359,675	\$63,910,841	
2029	\$64,035,400	\$37,898,508	\$4,023,232	\$97,910,676	\$4,723,329	\$52,472,654	\$10,074,533	\$3,359,675	\$63,910,841	
2030	\$64,035,400	\$37,898,508	\$4,023,232	\$97,910,676	\$4,723,329	\$52,472,654	\$10,074,533	\$3,359,675	\$63,910,841	
2031	\$68,949,800	\$36,716,802	\$4,098,489	\$101,568,113	\$4,776,631	\$49,927,867	\$9,516,772	\$3,115,437	\$61,105,833	
2032	\$68,949,800	\$36,716,802	\$4,098,489	\$101,568,113	\$4,776,631	\$49,927,867	\$9,516,772	\$3,115,437	\$61,105,833	
2033	\$68,949,800	\$36,716,802	\$4,098,489	\$101,568,113	\$4,776,631	\$49,927,867	\$9,516,772	\$3,115,437	\$61,105,833	
2034	\$68,949,800	\$36,716,802	\$4,098,489	\$101,568,113	\$4,776,631	\$49,927,867	\$9,516,772	\$3,115,437	\$61,105,833	
2035	\$68,949,800	\$36,716,802	\$4,098,489	\$101,568,113	\$4,776,631	\$49,927,867	\$9,516,772	\$3,115,437	\$61,105,833	

Source: BAE, 2008.

**Table D-7: Calculation of Incremental Value, No Streetcar / Low Appreciation / Baseline Growth Scenario**

(Figures in constant 2008 dollars)

Total										
Year	RESIDENTIAL PROPERTIES					COMMERCIAL PROPERTIES				
	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)
2010	\$550,957,426	0.0%	\$25,771,251	\$576,728,677	\$25,771,251	\$3,138,724,230	0.0%	\$21,636,230	\$3,160,360,459	\$21,636,230
2011	\$576,728,677	0.0%	\$25,771,251	\$602,499,928	\$51,542,502	\$3,160,360,459	0.0%	\$21,636,230	\$3,181,996,689	\$43,272,460
2012	\$602,499,928	0.0%	\$25,771,251	\$628,271,179	\$77,313,753	\$3,181,996,689	0.0%	\$21,636,230	\$3,203,632,919	\$64,908,689
2013	\$628,271,179	0.0%	\$25,771,251	\$654,042,430	\$103,085,004	\$3,203,632,919	0.0%	\$21,636,230	\$3,225,269,149	\$86,544,919
2014	\$654,042,430	0.0%	\$25,771,251	\$679,813,681	\$128,856,254	\$3,225,269,149	0.0%	\$21,636,230	\$3,246,905,378	\$108,181,149
2015	\$679,813,681	0.0%	\$25,771,251	\$705,584,932	\$154,627,505	\$3,246,905,378	0.0%	\$21,636,230	\$3,268,541,608	\$129,817,379
2016	\$705,584,932	0.0%	\$51,371,810	\$756,956,742	\$205,999,316	\$3,268,541,608	0.0%	\$68,446,615	\$3,336,988,223	\$198,263,993
2017	\$756,956,742	0.0%	\$51,371,810	\$808,328,552	\$257,371,126	\$3,336,988,223	0.0%	\$68,446,615	\$3,405,434,838	\$266,710,608
2018	\$808,328,552	0.0%	\$51,371,810	\$859,700,363	\$308,742,936	\$3,405,434,838	0.0%	\$68,446,615	\$3,473,881,452	\$335,157,223
2019	\$859,700,363	0.0%	\$51,371,810	\$911,072,173	\$360,114,747	\$3,473,881,452	0.0%	\$68,446,615	\$3,542,328,067	\$403,603,838
2020	\$911,072,173	0.0%	\$51,371,810	\$962,443,983	\$411,486,557	\$3,542,328,067	0.0%	\$68,446,615	\$3,610,774,682	\$472,050,452
2021	\$962,443,983	0.0%	\$52,211,936	\$1,014,655,919	\$463,698,493	\$3,610,774,682	0.0%	\$62,334,667	\$3,673,109,349	\$534,385,119
2022	\$1,014,655,919	0.0%	\$52,211,936	\$1,066,867,855	\$515,910,428	\$3,673,109,349	0.0%	\$62,334,667	\$3,735,444,015	\$596,719,786
2023	\$1,066,867,855	0.0%	\$52,211,936	\$1,119,079,791	\$568,122,364	\$3,735,444,015	0.0%	\$62,334,667	\$3,797,778,682	\$659,054,453
2024	\$1,119,079,791	0.0%	\$52,211,936	\$1,171,291,726	\$620,334,300	\$3,797,778,682	0.0%	\$62,334,667	\$3,860,113,349	\$721,389,119
2025	\$1,171,291,726	0.0%	\$52,211,936	\$1,223,503,662	\$672,546,235	\$3,860,113,349	0.0%	\$62,334,667	\$3,922,448,016	\$783,723,786
2026	\$1,223,503,662	0.0%	\$58,142,618	\$1,281,646,280	\$730,688,853	\$3,922,448,016	0.0%	\$54,771,082	\$3,977,219,097	\$838,494,868
2027	\$1,281,646,280	0.0%	\$58,142,618	\$1,339,788,897	\$788,831,471	\$3,977,219,097	0.0%	\$54,771,082	\$4,031,990,179	\$893,265,949
2028	\$1,339,788,897	0.0%	\$58,142,618	\$1,397,931,515	\$846,974,088	\$4,031,990,179	0.0%	\$54,771,082	\$4,086,761,261	\$948,037,031
2029	\$1,397,931,515	0.0%	\$58,142,618	\$1,456,074,133	\$905,116,706	\$4,086,761,261	0.0%	\$54,771,082	\$4,141,532,342	\$1,002,808,113
2030	\$1,456,074,133	0.0%	\$58,142,618	\$1,514,216,750	\$963,259,324	\$4,141,532,342	0.0%	\$54,771,082	\$4,196,303,424	\$1,057,579,194
2031	\$1,514,216,750	0.0%	\$58,315,047	\$1,572,531,797	\$1,021,574,371	\$4,196,303,424	0.0%	\$54,189,505	\$4,250,492,929	\$1,111,768,699
2032	\$1,572,531,797	0.0%	\$58,315,047	\$1,630,846,844	\$1,079,889,418	\$4,250,492,929	0.0%	\$54,189,505	\$4,304,682,433	\$1,165,958,204
2033	\$1,630,846,844	0.0%	\$58,315,047	\$1,689,161,891	\$1,138,204,464	\$4,304,682,433	0.0%	\$54,189,505	\$4,358,871,938	\$1,220,147,708
2034	\$1,689,161,891	0.0%	\$58,315,047	\$1,747,476,938	\$1,196,519,511	\$4,358,871,938	0.0%	\$54,189,505	\$4,413,061,442	\$1,274,337,213
2035	\$1,747,476,938	0.0%	\$58,315,047	\$1,805,791,985	\$1,254,834,558	\$4,413,061,442	0.0%	\$54,189,505	\$4,467,250,947	\$1,328,526,717

Notes:

- (A) Based on assessed value of parcels located within 1/4 mile of proposed streetcar route, adjusted to account for anticipated revaluation in 2010. The starting value for 2010 is the "baseline valuation" used for calculating incremental valuation.
- (B) Annual appreciation includes the following factors, shown in the Key Assumptions table:
  - The TOD Premium, which is assumed to apply to the land value of each segment in the starting year. Because the TOD premium applies to land only, the percent increase shown above (which applies to total valuation) is less than the percent increase in land value shown in the Key Assumptions table.
  - The Neighborhood Reinvestment Factor, which is attributable to renovation and upgrades of existing improvements and is realized each year.
- (C) Based on market value of projected new development net of average existing value of development assumed to be replaced.
- (D) Equals Column (A) times Column (B) plus Column (C).
- (E) Equals Column (E) minus Column (A).

**Table D-7: Calculation of Incremental Value, No Streetcar / Low Appreciation / Baseline Growth Scenario (continued)**

(Figures in constant 2008 dollars)

Total							
Year	Total Ending Assessed Value (F)	Total Incremental Valuation (G)	MSD Tax Rate (H)	TIF Tax Rate (I)	Tax Revenues		
					Annual MSD Revenues (J)	Annual TIF Revenues (K)	Total MSD and TIF Revenues (L)
2010	\$3,737,089,137	\$47,407,481	0.02%	0.46%	\$747,418	\$217,411	\$964,829
2011	\$3,784,496,617	\$94,814,961	0.02%	0.46%	\$756,899	\$434,821	\$1,191,721
2012	\$3,831,904,098	\$142,222,442	0.02%	0.46%	\$766,381	\$652,232	\$1,418,613
2013	\$3,879,311,579	\$189,629,923	0.02%	0.46%	\$775,862	\$869,643	\$1,645,505
2014	\$3,926,719,059	\$237,037,403	0.02%	0.46%	\$785,344	\$1,087,054	\$1,872,397
2015	\$3,974,126,540	\$284,444,884	0.02%	0.46%	\$794,825	\$1,304,464	\$2,099,290
2016	\$4,093,944,965	\$404,263,309	0.02%	0.46%	\$818,789	\$1,853,952	\$2,672,741
2017	\$4,213,763,390	\$524,081,734	0.02%	0.46%	\$842,753	\$2,403,439	\$3,246,192
2018	\$4,333,581,815	\$643,900,159	0.02%	0.46%	\$866,716	\$2,952,926	\$3,819,642
2019	\$4,453,400,240	\$763,718,584	0.02%	0.46%	\$890,680	\$3,502,413	\$4,393,093
2020	\$4,573,218,665	\$883,537,009	0.02%	0.46%	\$914,644	\$4,051,901	\$4,966,544
2021	\$4,687,765,268	\$998,083,612	0.02%	0.46%	\$937,553	\$4,577,211	\$5,514,764
2022	\$4,802,311,870	\$1,112,630,214	0.02%	0.46%	\$960,462	\$5,102,522	\$6,062,985
2023	\$4,916,858,473	\$1,227,176,817	0.02%	0.46%	\$983,372	\$5,627,833	\$6,611,205
2024	\$5,031,405,075	\$1,341,723,419	0.02%	0.46%	\$1,006,281	\$6,153,144	\$7,159,425
2025	\$5,145,951,677	\$1,456,270,021	0.02%	0.46%	\$1,029,190	\$6,678,454	\$7,707,645
2026	\$5,258,865,377	\$1,569,183,721	0.02%	0.46%	\$1,051,773	\$7,196,277	\$8,248,050
2027	\$5,371,779,076	\$1,682,097,420	0.02%	0.46%	\$1,074,356	\$7,714,099	\$8,788,455
2028	\$5,484,692,776	\$1,795,011,119	0.02%	0.46%	\$1,096,939	\$8,231,921	\$9,328,860
2029	\$5,597,606,475	\$1,907,924,819	0.02%	0.46%	\$1,119,521	\$8,749,743	\$9,869,265
2030	\$5,710,520,174	\$2,020,838,518	0.02%	0.46%	\$1,142,104	\$9,267,565	\$10,409,669
2031	\$5,823,024,726	\$2,133,343,070	0.02%	0.46%	\$1,164,605	\$9,783,511	\$10,948,116
2032	\$5,935,529,277	\$2,245,847,621	0.02%	0.46%	\$1,187,106	\$10,299,457	\$11,486,563
2033	\$6,048,033,829	\$2,358,352,172	0.02%	0.46%	\$1,209,607	\$10,815,403	\$12,025,010
2034	\$6,160,538,380	\$2,470,856,724	0.02%	0.46%	\$1,232,108	\$11,331,349	\$12,563,457
2035	\$6,273,042,931	\$2,583,361,275	0.02%	0.46%	\$1,254,609	\$11,847,295	\$13,101,903

Notes:

- (F) Equals Residential Column (D) plus Commercial Column (D).
- (G) Equals Residential Column (E) plus Commercial Column (E).
- (H) Shows a possible MSD tax rate. Actual rate could go as high as approximately 0.2% per State law.
- (I) City of Charlotte Tax Rate, as shown on Key Assumptions table.
- (J) Equals Column (F) times Column (H)
- (K) Equals Column (G) times Column (I)
- (L) Equals Column (J) plus Column (K).

Sources: Mecklenburg County Office of the Tax Collector, 2008, BAE, 2008.

**Table D-8: Calculation of Incremental Value, Streetcar / Low Appreciation / Baseline Growth Scenario**

(Figures in constant 2008 dollars)

<b>Total</b>										
Year	RESIDENTIAL PROPERTIES					COMMERCIAL PROPERTIES				
	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)
2010	\$550,957,426	0.0%	\$38,016,156	\$588,973,583	\$38,016,156	\$3,138,724,230	0.0%	\$24,040,853	\$3,162,765,083	\$24,040,853
2011	\$588,973,583	0.0%	\$38,016,156	\$626,989,739	\$76,032,313	\$3,162,765,083	0.0%	\$24,040,853	\$3,186,805,936	\$48,081,706
2012	\$626,989,739	0.0%	\$38,016,156	\$665,005,896	\$114,048,469	\$3,186,805,936	0.0%	\$24,040,853	\$3,210,846,789	\$72,122,559
2013	\$665,005,896	0.0%	\$38,016,156	\$703,022,052	\$152,064,626	\$3,210,846,789	0.0%	\$24,040,853	\$3,234,887,642	\$96,163,412
2014	\$703,022,052	0.0%	\$38,016,156	\$741,038,209	\$190,080,782	\$3,234,887,642	0.0%	\$24,040,853	\$3,258,928,495	\$120,204,265
2015	\$741,038,209	0.0%	\$38,016,156	\$779,054,365	\$228,096,939	\$3,258,928,495	0.0%	\$24,040,853	\$3,282,969,348	\$144,245,118
2016	\$779,054,365	0.0%	\$75,743,054	\$854,797,419	\$303,839,993	\$3,282,969,348	0.0%	\$72,897,068	\$3,355,866,416	\$217,142,186
2017	\$854,797,419	0.0%	\$75,743,054	\$930,540,473	\$379,583,046	\$3,355,866,416	0.0%	\$72,897,068	\$3,428,763,484	\$290,039,255
2018	\$930,540,473	0.0%	\$75,743,054	\$1,006,283,527	\$455,326,100	\$3,428,763,484	0.0%	\$72,897,068	\$3,501,660,552	\$362,936,323
2019	\$1,006,283,527	0.0%	\$75,743,054	\$1,082,026,580	\$531,069,154	\$3,501,660,552	0.0%	\$72,897,068	\$3,574,557,620	\$435,833,391
2020	\$1,082,026,580	0.0%	\$75,743,054	\$1,157,769,634	\$606,812,208	\$3,574,557,620	0.0%	\$72,897,068	\$3,647,454,689	\$508,730,459
2021	\$1,157,769,634	0.0%	\$77,796,782	\$1,235,566,416	\$684,608,989	\$3,647,454,689	0.0%	\$67,230,752	\$3,714,685,440	\$575,961,211
2022	\$1,235,566,416	0.0%	\$77,796,782	\$1,313,363,198	\$762,405,771	\$3,714,685,440	0.0%	\$67,230,752	\$3,781,916,192	\$643,191,962
2023	\$1,313,363,198	0.0%	\$77,796,782	\$1,391,159,979	\$840,202,553	\$3,781,916,192	0.0%	\$67,230,752	\$3,849,146,943	\$710,422,714
2024	\$1,391,159,979	0.0%	\$77,796,782	\$1,468,956,761	\$917,999,335	\$3,849,146,943	0.0%	\$67,230,752	\$3,916,377,695	\$777,653,465
2025	\$1,468,956,761	0.0%	\$77,796,782	\$1,546,753,543	\$995,796,116	\$3,916,377,695	0.0%	\$67,230,752	\$3,983,608,446	\$844,884,217
2026	\$1,546,753,543	0.0%	\$87,409,556	\$1,634,163,098	\$1,083,205,672	\$3,983,608,446	0.0%	\$60,696,942	\$4,044,305,388	\$905,581,158
2027	\$1,634,163,098	0.0%	\$87,409,556	\$1,721,572,654	\$1,170,615,227	\$4,044,305,388	0.0%	\$60,696,942	\$4,105,002,330	\$966,278,100
2028	\$1,721,572,654	0.0%	\$87,409,556	\$1,808,982,209	\$1,258,024,783	\$4,105,002,330	0.0%	\$60,696,942	\$4,165,699,271	\$1,026,975,042
2029	\$1,808,982,209	0.0%	\$87,409,556	\$1,896,391,765	\$1,345,434,339	\$4,165,699,271	0.0%	\$60,696,942	\$4,226,396,213	\$1,087,671,983
2030	\$1,896,391,765	0.0%	\$87,409,556	\$1,983,801,321	\$1,432,843,894	\$4,226,396,213	0.0%	\$60,696,942	\$4,287,093,154	\$1,148,368,925
2031	\$1,983,801,321	0.0%	\$88,434,779	\$2,072,236,100	\$1,521,278,673	\$4,287,093,154	0.0%	\$59,880,697	\$4,346,973,851	\$1,208,249,622
2032	\$2,072,236,100	0.0%	\$88,434,779	\$2,160,670,879	\$1,609,713,453	\$4,346,973,851	0.0%	\$59,880,697	\$4,406,854,549	\$1,268,130,319
2033	\$2,160,670,879	0.0%	\$88,434,779	\$2,249,105,659	\$1,698,148,232	\$4,406,854,549	0.0%	\$59,880,697	\$4,466,735,246	\$1,328,011,016
2034	\$2,249,105,659	0.0%	\$88,434,779	\$2,337,540,438	\$1,786,583,012	\$4,466,735,246	0.0%	\$59,880,697	\$4,526,615,943	\$1,387,891,713
2035	\$2,337,540,438	0.0%	\$88,434,779	\$2,425,975,218	\$1,875,017,791	\$4,526,615,943	0.0%	\$59,880,697	\$4,586,496,640	\$1,447,772,410

Notes:

(A) Based on assessed value of parcels located within 1/4 mile of proposed streetcar route, adjusted to account for anticipated revaluation in 2010.

The starting value for 2010 is the "baseline valuation" used for calculating incremental valuation.

(B) Annual appreciation includes the following factors, shown in the Key Assumptions table:

-The TOD Premium, which is assumed to apply to the land value of each segment in the starting year. Because the TOD premium applies to land only, the percent increase shown above (which applies to total valuation) is less than the percent increase in land value shown in the Key Assumptions table.

-The Neighborhood Reinvestment Factor, which is attributable to renovation and upgrades of existing improvements and is realized each year.

(C) Based on market value of projected new development net of average existing value of development assumed to be replaced.

(D) Equals Column (A) times Column (B) plus Column (C).

(E) Equals Column (D) minus Column (A).

**Table D-8: Calculation of Incremental Value, Streetcar / Low Appreciation / Baseline Growth Scenario (continued)**  
*(Figures in constant 2008 dollars)*

<b>Total</b>								
<b>Year</b>	<b>Total Ending Assessed Value (F)</b>	<b>Total Incremental Valuation (G)</b>	<b>MSD Tax Rate (H)</b>	<b>TIF Tax Rate (I)</b>	<b>Tax Revenues</b>			
					<b>Annual MSD Revenues (J)</b>	<b>Annual TIF Revenues (K)</b>	<b>Total MSD and TIF Revenues (L)</b>	
2010	\$3,751,738,666	\$62,057,010	0.02%	0.46%	\$750,348	\$284,593	\$1,034,941	
2011	\$3,813,795,675	\$124,114,019	0.02%	0.46%	\$762,759	\$569,187	\$1,331,946	
2012	\$3,875,852,685	\$186,171,029	0.02%	0.46%	\$775,171	\$853,780	\$1,628,951	
2013	\$3,937,909,694	\$248,228,038	0.02%	0.46%	\$787,582	\$1,138,374	\$1,925,956	
2014	\$3,999,966,704	\$310,285,048	0.02%	0.46%	\$799,993	\$1,422,967	\$2,222,961	
2015	\$4,062,023,713	\$372,342,057	0.02%	0.46%	\$812,405	\$1,707,561	\$2,519,965	
2016	\$4,210,663,835	\$520,982,179	0.02%	0.46%	\$842,133	\$2,389,224	\$3,231,357	
2017	\$4,359,303,957	\$669,622,301	0.02%	0.46%	\$871,861	\$3,070,888	\$3,942,749	
2018	\$4,507,944,079	\$818,262,423	0.02%	0.46%	\$901,589	\$3,752,551	\$4,654,140	
2019	\$4,656,584,201	\$966,902,545	0.02%	0.46%	\$931,317	\$4,434,215	\$5,365,532	
2020	\$4,805,224,323	\$1,115,542,667	0.02%	0.46%	\$961,045	\$5,115,879	\$6,076,924	
2021	\$4,950,251,856	\$1,260,570,200	0.02%	0.46%	\$990,050	\$5,780,975	\$6,771,025	
2022	\$5,095,279,389	\$1,405,597,733	0.02%	0.46%	\$1,019,056	\$6,446,071	\$7,465,127	
2023	\$5,240,306,923	\$1,550,625,267	0.02%	0.46%	\$1,048,061	\$7,111,167	\$8,159,229	
2024	\$5,385,334,456	\$1,695,652,800	0.02%	0.46%	\$1,077,067	\$7,776,264	\$8,853,331	
2025	\$5,530,361,989	\$1,840,680,333	0.02%	0.46%	\$1,106,072	\$8,441,360	\$9,547,432	
2026	\$5,678,468,486	\$1,988,786,830	0.02%	0.46%	\$1,135,694	\$9,120,576	\$10,256,270	
2027	\$5,826,574,983	\$2,136,893,327	0.02%	0.46%	\$1,165,315	\$9,799,793	\$10,965,108	
2028	\$5,974,681,481	\$2,284,999,825	0.02%	0.46%	\$1,194,936	\$10,479,009	\$11,673,945	
2029	\$6,122,787,978	\$2,433,106,322	0.02%	0.46%	\$1,224,558	\$11,158,226	\$12,382,783	
2030	\$6,270,894,475	\$2,581,212,819	0.02%	0.46%	\$1,254,179	\$11,837,442	\$13,091,621	
2031	\$6,419,209,951	\$2,729,528,295	0.02%	0.46%	\$1,283,842	\$12,517,617	\$13,801,459	
2032	\$6,567,525,428	\$2,877,843,772	0.02%	0.46%	\$1,313,505	\$13,197,792	\$14,511,297	
2033	\$6,715,840,904	\$3,026,159,248	0.02%	0.46%	\$1,343,168	\$13,877,966	\$15,221,134	
2034	\$6,864,156,381	\$3,174,474,725	0.02%	0.46%	\$1,372,831	\$14,558,141	\$15,930,972	
2035	\$7,012,471,858	\$3,322,790,201	0.02%	0.46%	\$1,402,494	\$15,238,316	\$16,640,810	

Notes:

- (F) Equals Residential Column (D) plus Commercial Column (D).
- (G) Equals Residential Column (E) plus Commercial Column (E).
- (H) Shows a possible MSD tax rate. Actual rate could go as high as approximately 0.2% per State law.
- (I) City of Charlotte Tax Rate, as shown on Key Assumptions table.
- (J) Equals Column (F) times Column (H)
- (K) Equals Column (G) times Column (I)
- (L) Equals Column (J) plus Column (K).

Sources: Mecklenburg County Office of the Tax Collector, 2008, BAE, 2008.

**Table D-9: Calculation of Incremental Value, Streetcar / Moderate Appreciation / Baseline Growth Scenario**

(Figures in constant 2008 dollars)

<b>Total</b>										
Year	RESIDENTIAL PROPERTIES					COMMERCIAL PROPERTIES				
	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)
2010	\$550,957,426	1.2%	\$38,016,156	\$599,937,445	\$48,980,019	\$3,138,724,230	1.3%	\$24,040,853	\$3,205,076,255	\$66,352,025
2011	\$599,937,445	0.3%	\$38,016,156	\$639,753,414	\$88,795,988	\$3,205,076,255	0.0%	\$24,040,853	\$3,229,117,108	\$90,392,878
2012	\$639,753,414	0.3%	\$38,016,156	\$679,688,831	\$128,731,405	\$3,229,117,108	0.0%	\$24,040,853	\$3,253,157,961	\$114,433,731
2013	\$679,688,831	0.3%	\$38,016,156	\$719,744,054	\$168,786,628	\$3,253,157,961	0.0%	\$24,040,853	\$3,277,198,814	\$138,474,584
2014	\$719,744,054	0.3%	\$38,016,156	\$759,919,443	\$208,962,016	\$3,277,198,814	0.0%	\$24,040,853	\$3,301,239,667	\$162,515,437
2015	\$759,919,443	0.3%	\$38,016,156	\$800,215,357	\$249,257,931	\$3,301,239,667	0.0%	\$24,040,853	\$3,325,280,520	\$186,556,290
2016	\$800,215,357	0.3%	\$75,743,054	\$878,359,057	\$327,401,631	\$3,325,280,520	0.0%	\$72,897,068	\$3,398,177,588	\$259,453,359
2017	\$878,359,057	0.3%	\$75,743,054	\$956,737,188	\$405,779,762	\$3,398,177,588	0.0%	\$72,897,068	\$3,471,074,656	\$332,350,427
2018	\$956,737,188	0.3%	\$75,743,054	\$1,035,350,453	\$484,393,027	\$3,471,074,656	0.0%	\$72,897,068	\$3,543,971,724	\$405,247,495
2019	\$1,035,350,453	0.3%	\$75,743,054	\$1,114,199,559	\$563,242,132	\$3,543,971,724	0.0%	\$72,897,068	\$3,616,868,793	\$478,144,563
2020	\$1,114,199,559	0.3%	\$75,743,054	\$1,193,285,211	\$642,327,785	\$3,616,868,793	0.0%	\$72,897,068	\$3,689,765,861	\$551,041,631
2021	\$1,193,285,211	0.3%	\$77,796,782	\$1,274,661,848	\$723,704,422	\$3,689,765,861	0.0%	\$67,230,752	\$3,756,996,612	\$618,272,383
2022	\$1,274,661,848	0.3%	\$77,796,782	\$1,356,282,616	\$805,325,189	\$3,756,996,612	0.0%	\$67,230,752	\$3,824,227,364	\$685,503,134
2023	\$1,356,282,616	0.3%	\$77,796,782	\$1,438,148,245	\$887,190,819	\$3,824,227,364	0.0%	\$67,230,752	\$3,891,458,115	\$752,733,886
2024	\$1,438,148,245	0.3%	\$77,796,782	\$1,520,259,472	\$969,302,045	\$3,891,458,115	0.0%	\$67,230,752	\$3,958,688,867	\$819,964,637
2025	\$1,520,259,472	0.3%	\$77,796,782	\$1,602,617,032	\$1,051,659,605	\$3,958,688,867	0.0%	\$67,230,752	\$4,025,919,619	\$887,195,389
2026	\$1,602,617,032	0.3%	\$87,409,556	\$1,694,834,438	\$1,143,877,012	\$4,025,919,619	0.0%	\$60,696,942	\$4,086,616,560	\$947,892,331
2027	\$1,694,834,438	0.3%	\$87,409,556	\$1,787,328,497	\$1,236,371,071	\$4,086,616,560	0.0%	\$60,696,942	\$4,147,313,502	\$1,008,589,272
2028	\$1,787,328,497	0.3%	\$87,409,556	\$1,880,100,038	\$1,329,142,612	\$4,147,313,502	0.0%	\$60,696,942	\$4,208,010,443	\$1,069,286,214
2029	\$1,880,100,038	0.3%	\$87,409,556	\$1,973,149,894	\$1,422,192,468	\$4,208,010,443	0.0%	\$60,696,942	\$4,268,707,385	\$1,129,983,155
2030	\$1,973,149,894	0.3%	\$87,409,556	\$2,066,478,899	\$1,515,521,473	\$4,268,707,385	0.0%	\$60,696,942	\$4,329,404,326	\$1,190,680,097
2031	\$2,066,478,899	0.3%	\$88,434,779	\$2,161,113,115	\$1,610,155,689	\$4,329,404,326	0.0%	\$59,880,697	\$4,389,285,024	\$1,250,560,794
2032	\$2,161,113,115	0.3%	\$88,434,779	\$2,256,031,234	\$1,705,073,808	\$4,389,285,024	0.0%	\$59,880,697	\$4,449,165,721	\$1,310,441,491
2033	\$2,256,031,234	0.3%	\$88,434,779	\$2,351,234,107	\$1,800,276,681	\$4,449,165,721	0.0%	\$59,880,697	\$4,509,046,418	\$1,370,322,188
2034	\$2,351,234,107	0.3%	\$88,434,779	\$2,446,722,589	\$1,895,765,162	\$4,509,046,418	0.0%	\$59,880,697	\$4,568,927,115	\$1,430,202,885
2035	\$2,446,722,589	0.3%	\$88,434,779	\$2,542,497,536	\$1,991,540,110	\$4,568,927,115	0.0%	\$59,880,697	\$4,628,807,812	\$1,490,083,583

Notes:

(A) Based on assessed value of parcels located within 1/4 mile of proposed streetcar route, adjusted to account for anticipated revaluation in 2010.

The starting value for 2010 is the "baseline valuation" used for calculating incremental valuation.

(B) Annual appreciation includes the following factors, shown in the Key Assumptions table:

-The TOD Premium, which is assumed to apply to the land value of each segment in the starting year. Because the TOD premium applies to land only, the percent increase shown above (which applies to total valuation) is less than the percent increase in land value shown in the Key Assumptions table.

-The Neighborhood Reinvestment Factor, which is attributable to renovation and upgrades of existing improvements and is realized each year.

(C) Based on market value of projected new development net of average existing value of development assumed to be replaced.

(D) Equals Column (A) times Column (B) plus Column (C).

(E) Equals Column (D) minus Column (A).

**Table D-9: Calculation of Incremental Value, Streetcar / Moderate Appreciation / Baseline Growth Scenario (continued)**  
*(Figures in constant 2008 dollars)*

Total							
Year	Total Ending Assessed Value (F)	Total Incremental Valuation (G)	MSD Tax Rate (H)	TIF Tax Rate (I)	Tax Revenues		
					Annual MSD Revenues (J)	Annual TIF Revenues (K)	Total MSD and TIF Revenues (L)
2010	\$3,805,013,700	\$115,332,044	0.04%	0.46%	\$1,522,005	\$528,913	\$2,050,918
2011	\$3,868,870,522	\$179,188,866	0.04%	0.46%	\$1,547,548	\$821,760	\$2,369,308
2012	\$3,932,846,792	\$243,165,136	0.04%	0.46%	\$1,573,139	\$1,115,155	\$2,688,294
2013	\$3,996,942,868	\$307,261,212	0.04%	0.46%	\$1,598,777	\$1,409,100	\$3,007,877
2014	\$4,061,159,110	\$371,477,453	0.04%	0.46%	\$1,624,464	\$1,703,596	\$3,328,059
2015	\$4,125,495,877	\$435,814,221	0.04%	0.46%	\$1,650,198	\$1,998,644	\$3,648,842
2016	\$4,276,536,645	\$586,854,989	0.04%	0.46%	\$1,710,615	\$2,691,317	\$4,401,932
2017	\$4,427,811,844	\$738,130,188	0.04%	0.46%	\$1,771,125	\$3,385,065	\$5,156,190
2018	\$4,579,322,178	\$889,640,522	0.04%	0.46%	\$1,831,729	\$4,079,891	\$5,911,620
2019	\$4,731,068,351	\$1,041,386,695	0.04%	0.46%	\$1,892,427	\$4,775,799	\$6,668,227
2020	\$4,883,051,072	\$1,193,369,416	0.04%	0.46%	\$1,953,220	\$5,472,792	\$7,426,013
2021	\$5,031,658,461	\$1,341,976,805	0.04%	0.46%	\$2,012,663	\$6,154,306	\$8,166,969
2022	\$5,180,509,979	\$1,490,828,323	0.04%	0.46%	\$2,072,204	\$6,836,939	\$8,909,143
2023	\$5,329,606,361	\$1,639,924,705	0.04%	0.46%	\$2,131,843	\$7,520,695	\$9,652,537
2024	\$5,478,948,339	\$1,789,266,683	0.04%	0.46%	\$2,191,579	\$8,205,577	\$10,397,156
2025	\$5,628,536,650	\$1,938,854,994	0.04%	0.46%	\$2,251,415	\$8,891,589	\$11,143,004
2026	\$5,781,450,999	\$2,091,769,343	0.04%	0.46%	\$2,312,580	\$9,592,854	\$11,905,435
2027	\$5,934,641,999	\$2,244,960,343	0.04%	0.46%	\$2,373,857	\$10,295,388	\$12,669,245
2028	\$6,088,110,482	\$2,398,428,826	0.04%	0.46%	\$2,435,244	\$10,999,195	\$13,434,439
2029	\$6,241,857,279	\$2,552,175,623	0.04%	0.46%	\$2,496,743	\$11,704,277	\$14,201,020
2030	\$6,395,883,226	\$2,706,201,570	0.04%	0.46%	\$2,558,353	\$12,410,640	\$14,968,994
2031	\$6,550,398,139	\$2,860,716,483	0.04%	0.46%	\$2,620,159	\$13,119,246	\$15,739,405
2032	\$6,705,196,955	\$3,015,515,299	0.04%	0.46%	\$2,682,079	\$13,829,153	\$16,511,232
2033	\$6,860,280,525	\$3,170,598,869	0.04%	0.46%	\$2,744,112	\$14,540,366	\$17,284,479
2034	\$7,015,649,704	\$3,325,968,048	0.04%	0.46%	\$2,806,260	\$15,252,889	\$18,059,149
2035	\$7,171,305,348	\$3,481,623,692	0.04%	0.46%	\$2,868,522	\$15,966,726	\$18,835,248

(F) Equals Residential Column (D) plus Commercial Column (D).

(G) Equals Residential Column (E) plus Commercial Column (E).

(H) Shows a possible MSD tax rate. Actual rate could go as high as approximately 0.2% per State law.

(I) City of Charlotte Tax Rate, as shown on Key Assumptions table.

(J) Equals Column (F) times Column (H)

(K) Equals Column (G) times Column (I)

(L) Equals Column (J) plus Column (K).

Sources: Mecklenburg County Office of the Tax Collector, 2008, BAE, 2008.

**Table D-10: Calculation of Incremental Value, Streetcar / High Appreciation / Accelerated Growth Scenario**

(Figures in constant 2008 dollars)

<b>Total</b>										
Year	RESIDENTIAL PROPERTIES					COMMERCIAL PROPERTIES				
	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)	Starting Assessed Value (A)	Annual Appreciation Factor (B)	Net Value of New Development (C)	Ending Assessed Value (D)	Incremental Valuation (E)
2010	\$550,957,426	2.1%	\$38,016,156	\$609,248,436	\$58,291,009	\$3,138,724,230	2.7%	\$24,040,853	\$3,247,387,427	\$108,663,197
2011	\$609,248,436	0.3%	\$38,016,156	\$649,092,337	\$98,134,911	\$3,247,387,427	0.0%	\$24,040,853	\$3,271,428,280	\$132,704,050
2012	\$649,092,337	0.3%	\$38,016,156	\$689,055,771	\$138,098,344	\$3,271,428,280	0.0%	\$24,040,853	\$3,295,469,133	\$156,744,903
2013	\$689,055,771	0.3%	\$38,016,156	\$729,139,095	\$178,181,668	\$3,295,469,133	0.0%	\$24,040,853	\$3,319,509,986	\$180,785,756
2014	\$729,139,095	0.3%	\$38,016,156	\$769,342,668	\$218,385,242	\$3,319,509,986	0.0%	\$24,040,853	\$3,343,550,839	\$204,826,609
2015	\$769,342,668	0.3%	\$38,016,156	\$809,666,853	\$258,709,427	\$3,343,550,839	0.0%	\$24,040,853	\$3,367,591,692	\$228,867,462
2016	\$809,666,853	0.3%	\$98,077,747	\$910,173,601	\$359,216,175	\$3,367,591,692	0.0%	\$74,347,145	\$3,441,938,837	\$303,214,607
2017	\$910,173,601	0.3%	\$98,077,747	\$1,010,981,869	\$460,024,443	\$3,441,938,837	0.0%	\$74,347,145	\$3,516,285,982	\$377,561,752
2018	\$1,010,981,869	0.3%	\$98,077,747	\$1,112,092,562	\$561,135,136	\$3,516,285,982	0.0%	\$74,347,145	\$3,590,633,127	\$451,908,897
2019	\$1,112,092,562	0.3%	\$98,077,747	\$1,213,506,587	\$662,549,161	\$3,590,633,127	0.0%	\$74,347,145	\$3,664,980,272	\$526,256,042
2020	\$1,213,506,587	0.3%	\$98,077,747	\$1,315,224,855	\$764,267,428	\$3,664,980,272	0.0%	\$74,347,145	\$3,739,327,417	\$600,603,187
2021	\$1,315,224,855	0.3%	\$93,387,535	\$1,412,558,064	\$861,600,638	\$3,739,327,417	0.0%	\$69,617,832	\$3,808,945,248	\$670,221,019
2022	\$1,412,558,064	0.3%	\$93,387,535	\$1,510,183,273	\$959,225,847	\$3,808,945,248	0.0%	\$69,617,832	\$3,878,563,080	\$739,838,851
2023	\$1,510,183,273	0.3%	\$93,387,535	\$1,608,101,358	\$1,057,143,931	\$3,878,563,080	0.0%	\$69,617,832	\$3,948,180,912	\$809,456,682
2024	\$1,608,101,358	0.3%	\$93,387,535	\$1,706,313,197	\$1,155,355,770	\$3,948,180,912	0.0%	\$69,617,832	\$4,017,798,744	\$879,074,514
2025	\$1,706,313,197	0.3%	\$93,387,535	\$1,804,819,671	\$1,253,862,245	\$4,017,798,744	0.0%	\$69,617,832	\$4,087,416,575	\$948,692,346
2026	\$1,804,819,671	0.3%	\$97,910,676	\$1,908,144,806	\$1,357,187,380	\$4,087,416,575	0.0%	\$63,910,841	\$4,151,327,416	\$1,012,603,186
2027	\$1,908,144,806	0.3%	\$97,910,676	\$2,011,779,916	\$1,460,822,490	\$4,151,327,416	0.0%	\$63,910,841	\$4,215,238,256	\$1,076,514,027
2028	\$2,011,779,916	0.3%	\$97,910,676	\$2,115,725,931	\$1,564,768,505	\$4,215,238,256	0.0%	\$63,910,841	\$4,279,149,097	\$1,140,424,867
2029	\$2,115,725,931	0.3%	\$97,910,676	\$2,219,983,785	\$1,669,026,358	\$4,279,149,097	0.0%	\$63,910,841	\$4,343,059,937	\$1,204,335,708
2030	\$2,219,983,785	0.3%	\$97,910,676	\$2,324,554,412	\$1,773,596,985	\$4,343,059,937	0.0%	\$63,910,841	\$4,406,970,778	\$1,268,246,548
2031	\$2,324,554,412	0.3%	\$101,568,113	\$2,433,096,188	\$1,882,138,761	\$4,406,970,778	0.0%	\$61,105,833	\$4,468,076,611	\$1,329,352,382
2032	\$2,433,096,188	0.3%	\$101,568,113	\$2,541,963,589	\$1,991,006,162	\$4,468,076,611	0.0%	\$61,105,833	\$4,529,182,445	\$1,390,458,215
2033	\$2,541,963,589	0.3%	\$101,568,113	\$2,651,157,593	\$2,100,200,166	\$4,529,182,445	0.0%	\$61,105,833	\$4,590,288,278	\$1,451,564,048
2034	\$2,651,157,593	0.3%	\$101,568,113	\$2,760,679,178	\$2,209,721,752	\$4,590,288,278	0.0%	\$61,105,833	\$4,651,394,111	\$1,512,669,882
2035	\$2,760,679,178	0.3%	\$101,568,113	\$2,870,529,328	\$2,319,571,902	\$4,651,394,111	0.0%	\$61,105,833	\$4,712,499,945	\$1,573,775,715

Notes:

(A) Based on assessed value of parcels located within 1/4 mile of proposed streetcar route, adjusted to account for anticipated revaluation in 2010.

The starting value for 2010 is the "baseline valuation" used for calculating incremental valuation.

(B) Annual appreciation includes the following factors, shown in the Key Assumptions table:

-The TOD Premium, which is assumed to apply to the land value of each segment in the starting year. Because the TOD premium applies to land only, the percent increase shown above (which applies to total valuation) is less than the percent increase in land value shown in the Key Assumptions table.

-The Neighborhood Reinvestment Factor, which is attributable to renovation and upgrades of existing improvements and is realized each year.

(C) Based on market value of projected new development net of average existing value of development assumed to be replaced.

(D) Equals Column (A) times Column (B) plus Column (C).

(E) Equals Column (D) minus Column (A).

**Table D-10: Calculation of Incremental Value, Streetcar / High Appreciation / Accelerated Growth Scenario (continued)**  
*(Figures in constant 2008 dollars)*

Total							
Year	Total Ending Assessed Value (F)	Total Incremental Valuation (G)	MSD Tax Rate (H)	TIF Tax Rate (I)	Tax Revenues		
					Annual MSD Revenues (J)	Annual TIF Revenues (K)	Total MSD and TIF Revenues (L)
2010	\$3,856,635,862	\$166,954,206	0.06%	0.46%	\$2,313,982	\$765,652	\$3,079,634
2011	\$3,920,520,617	\$230,838,961	0.06%	0.46%	\$2,352,312	\$1,058,627	\$3,410,940
2012	\$3,984,524,904	\$294,843,248	0.06%	0.46%	\$2,390,715	\$1,352,151	\$3,742,866
2013	\$4,048,649,081	\$358,967,425	0.06%	0.46%	\$2,429,189	\$1,646,225	\$4,075,414
2014	\$4,112,893,508	\$423,211,851	0.06%	0.46%	\$2,467,736	\$1,940,850	\$4,408,586
2015	\$4,177,258,545	\$487,576,889	0.06%	0.46%	\$2,506,355	\$2,236,028	\$4,742,383
2016	\$4,352,112,438	\$662,430,782	0.06%	0.46%	\$2,611,267	\$3,037,908	\$5,649,175
2017	\$4,527,267,851	\$837,586,195	0.06%	0.46%	\$2,716,361	\$3,841,170	\$6,557,531
2018	\$4,702,725,689	\$1,013,044,033	0.06%	0.46%	\$2,821,635	\$4,645,820	\$7,467,455
2019	\$4,878,486,859	\$1,188,805,203	0.06%	0.46%	\$2,927,092	\$5,451,861	\$8,378,953
2020	\$5,054,552,271	\$1,364,870,615	0.06%	0.46%	\$3,032,731	\$6,259,297	\$9,292,028
2021	\$5,221,503,312	\$1,531,821,656	0.06%	0.46%	\$3,132,902	\$7,024,934	\$10,157,836
2022	\$5,388,746,353	\$1,699,064,697	0.06%	0.46%	\$3,233,248	\$7,791,911	\$11,025,159
2023	\$5,556,282,270	\$1,866,600,614	0.06%	0.46%	\$3,333,769	\$8,560,230	\$11,894,000
2024	\$5,724,111,941	\$2,034,430,284	0.06%	0.46%	\$3,434,467	\$9,329,897	\$12,764,364
2025	\$5,892,236,247	\$2,202,554,591	0.06%	0.46%	\$3,535,342	\$10,100,915	\$13,636,257
2026	\$6,059,472,222	\$2,369,790,566	0.06%	0.46%	\$3,635,683	\$10,867,860	\$14,503,543
2027	\$6,227,018,172	\$2,537,336,516	0.06%	0.46%	\$3,736,211	\$11,636,225	\$15,372,436
2028	\$6,394,875,028	\$2,705,193,372	0.06%	0.46%	\$3,836,925	\$12,406,017	\$16,242,942
2029	\$6,563,043,722	\$2,873,362,066	0.06%	0.46%	\$3,937,826	\$13,177,238	\$17,115,065
2030	\$6,731,525,190	\$3,041,843,533	0.06%	0.46%	\$4,038,915	\$13,949,894	\$17,988,810
2031	\$6,901,172,799	\$3,211,491,143	0.06%	0.46%	\$4,140,704	\$14,727,898	\$18,868,602
2032	\$7,071,146,034	\$3,381,464,378	0.06%	0.46%	\$4,242,688	\$15,507,396	\$19,750,083
2033	\$7,241,445,870	\$3,551,764,214	0.06%	0.46%	\$4,344,868	\$16,288,391	\$20,633,258
2034	\$7,412,073,289	\$3,722,391,633	0.06%	0.46%	\$4,447,244	\$17,070,888	\$21,518,132
2035	\$7,583,029,273	\$3,893,347,617	0.06%	0.46%	\$4,549,818	\$17,854,892	\$22,404,710

(F) Equals Residential Column (D) plus Commercial Column (D).

(G) Equals Residential Column (E) plus Commercial Column (E).

(H) Shows a possible MSD tax rate. Actual rate could go as high as approximately 0.2% per State law.

(I) City of Charlotte Tax Rate, as shown on Key Assumptions table.

(J) Equals Column (F) times Column (H)

(K) Equals Column (G) times Column (I)

(L) Equals Column (J) plus Column (K).

Sources: Mecklenburg County Office of the Tax Collector, 2008, BAE, 2008.

## Appendix E: Interviewees

Tom Barnhardt	Barnhardt Manufacturing Company
Steven Burke	Novant Health (Presbyterian Hospital)
Bobby Drakeford	Developer/Investor
Dr. Kathy Drumm	Central Piedmont Community College
Malcolm Graham	Johnson C. Smith University
Clay Grubb	Grubb Properties
Jeffrey Harris	Post Properties
John Cole Hatcher	Developer/Investor
Terrence Llewellyn	Developer/Investor
Mattie Marshall	Washington Heights Community Association
Cheryl Meyers and Michael Smith	Charlotte Center City Partners
John L. Nichols III	The Nichols Company
Jim Palermo	Johnson & Wales
Rob Pressley	Firmitas Development
Monte Ritchey	Developer/Investor
John Rudolph	Rudolph Moore Properties
Guerdon Stuckey	Northwest Community Development Corporation
Stanley Wade	Wade Financial Services