

THE ECONOMIC IMPACT OF THE MAY TOWN CENTER DEVELOPMENT ON DAVIDSON COUNTY, TENNESSEE

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I. INTRODUCTION

The purpose of this report is to analyze the economic effects of the May Town Center development in qualitative and quantitative terms. The study does not directly address the viability of the project, though it does examine the regional competition that May Town Center would face. The Center for Business and Economic Research at the University of Tennessee has prepared this report for Nashville/Davidson County's Metro Planning Department.

This report is organized as follows: Section II and Section III provide background on the May Town Center development and Davidson County. Section IV discusses the regional and local competitors to May Town Center, including their relative strengths and challenges relative to the development. Section V discusses the economic impact of May Town Center on Davidson County. We estimate employment, earnings, and tax revenue from the project. Finally, Section VI discusses the capital and operational costs of May Town Center.

II. MAY TOWN CENTER OVERVIEW

May Town Center (MTC) is a master-planned, mixed-use development to be located at Bells Bend in the northwestern region of Davidson county.¹ The proposed site is located across the Cumberland River and approximately five miles from Downtown, four miles from Green Hills, and less than five miles from Bordeaux and Vanderbilt. According to the developers, MTC accomplishes Nashville/Davidson County's goal of a sustainable and livable approach to growth. MTC seeks to accomplish these goals by utilizing planning principles that include preservation of open space, responsible utilization of green space, compact development, mixed-use transportation alternatives, and green urban design techniques.

The total MTC project encompasses about 1,500 acres, with approximately 550 acres planned for development and the remaining land set aside for green space, parks and a demonstration farm. Developers hope to attract corporate headquarters by providing a high concentration of large corporate campuses and professional office space surrounded by urban, high-density retail and residential units. At completion, MTC plans call for approximately 8,000 residential units, 8 million square feet of office space, 600,000 square feet of retail space, and a hotel with approximately 600 rooms. Development costs could total more than \$4 billion, with the total property value of the development estimated at over \$6.5 billion by 2031.

¹ This description is drawn from the developer's plans, and forms the basis of our analysis.

The pace of development will depend on market conditions, but construction is planned to begin in the next couple of years with the first office space coming on line in 2013. The plans consist of five phases of about four years each, with the fifth phase completed by 2031.

According to the developers, the large corporate office campuses are the hallmark of MTC. MTC's development plans call for a multi-phase development comprised of a number of distinct corporate campuses. The 350-acre corporate campus consists of four campuses of 50 acres, three of 25 acres, one of 15 acres, one of 10 acres, and ten of 5 acres. These office campuses will include state-of-the art, energy-efficient, Class A office space. MTC promotional materials describe the architectural design as a balance between the extremes of both modernism and the historic appearance of downtown, creating a new, stylistic corporate workplace in a new urban environment. The materials describe another attraction of the corporate campuses to be a mix of aesthetically pleasing, multi-level parking garages and parking lots, creating ample parking spaces and alleviating traffic congestion.

MTC will devote 90 acres to its Town Center and 60 Acres to its Residential Village. The Town Center will feature retail and dining venues and residential areas, including 15 story high rise condominiums and flats above the retail and dining. The retail selection is expected to be a diverse mix of upscale retail boutiques and specialty stores and a limited number of down-sized popular brand-name stores. Likewise, an assortment of fine and casual dining is targeted, and neighborhood grocery stores are expected for convenience.

If the concept works, high-quality residences together with the ambiance and vitality of retail shops, dining, entertainment venues such as cinemas and public gathering spaces, public conveniences of a post office or local school and parks are a few of the characteristics that the developer believes could make MTC a highly-desired place to live and work. People can live and play where they work, enjoying local amenities, socializing and developing a strong sense of place all within walking distance.

III. BACKGROUND ON DAVIDSON COUNTY

As Tennessee's state capital, Nashville is a vital transportation, business, and economic center. Nashville-Davidson County has a total population of approximately 625,000 and is home to one of the nation's best private universities, Vanderbilt, plus a number of other good higher education institutions. The Nashville-Davidson-Murfreesboro-Franklin Metropolitan Statistical Area (Nashville MSA) is consistently ranked as one of the hottest cities for corporate relocation and expansion, with more than 350 companies relocating their corporate headquarters to Nashville in recent years. However, some of this recognition is due in large part to the significant efforts of neighboring counties of the Nashville MSA (see Figure 1).

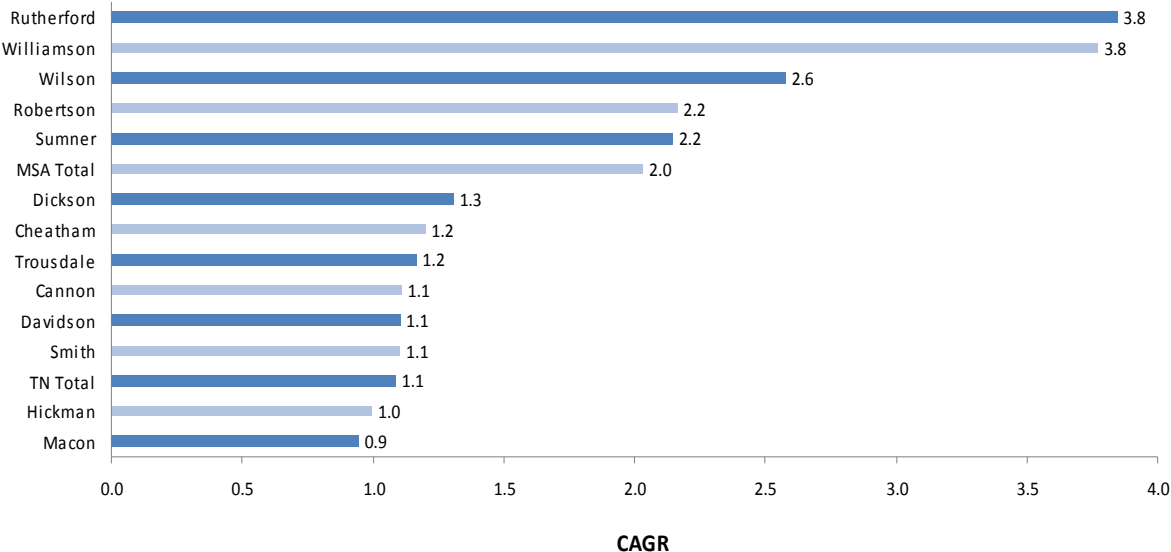
Aggressive economic expansion and business development in the surrounding counties has adversely impacted, and continues to challenge, the long-term leadership position of Nashville and Davidson County as the epicenter for economic vitality in middle Tennessee.

FIGURE 1
Nashville-Davidson-Murfreesboro, TN MSA



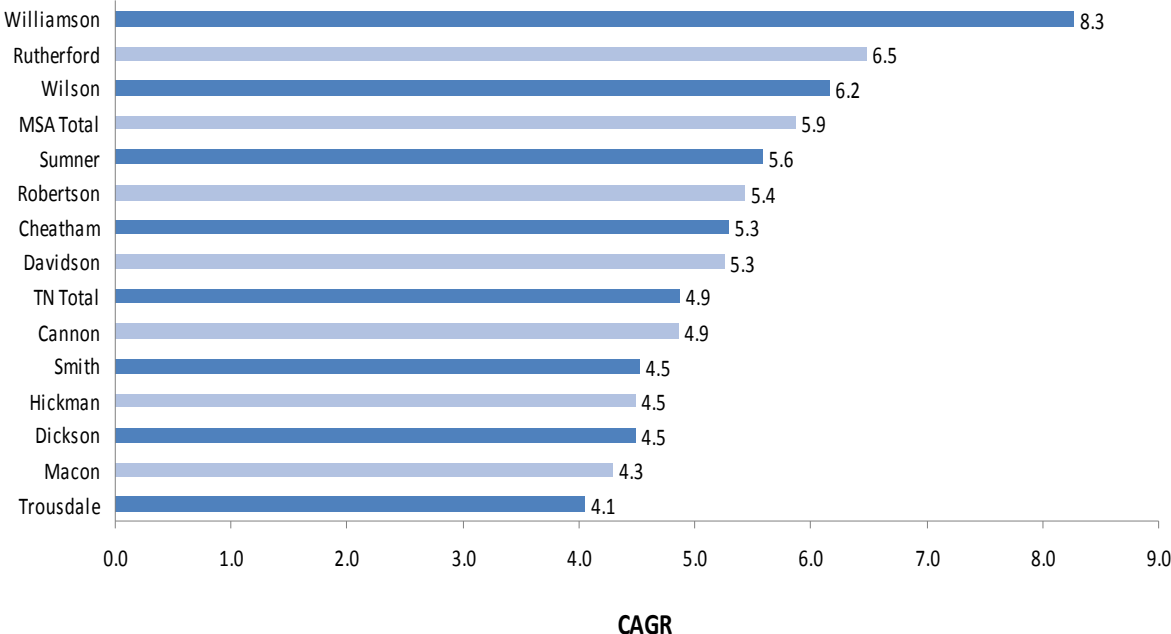
Davidson County's population and personal income growth approximates the statewide average, but significantly lags growth rates in counties such as Rutherford, Williamson, and Wilson (see Figures 2 and 3).

FIGURE 2
Population Growth, 1999-2008



Source: U.S. Census Bureau.

FIGURE 3
Personal Income Growth, 1999-2007

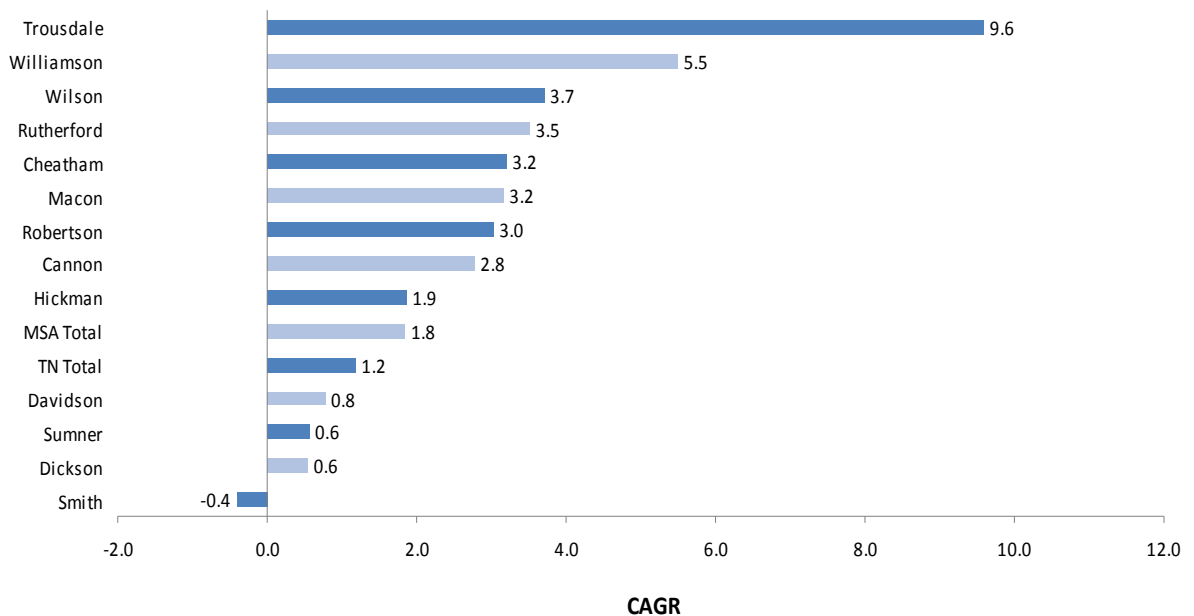


Source: Bureau of Economic Analysis.

Davidson County faces fiscal challenges as tax revenue growth slows with the increased migration of new jobs to surrounding counties. In a recent study completed by the Brookings Institute, between 1998 and 2006, the Nashville MSA saw a 4.6 percent decline in the number of jobs located within 3 miles of downtown, and a 6.2 percent increase in the share of jobs located beyond 10 miles from downtown. Of the total 700,000 jobs in the Nashville MSA, 24.8 percent of the jobs are within 3 miles of downtown and 43.3 percent share of jobs are beyond 10 miles. The movement of jobs from downtown to surrounding areas appears to have continued since 2006. The pattern of job movement to the suburbs is common among U.S. cities.

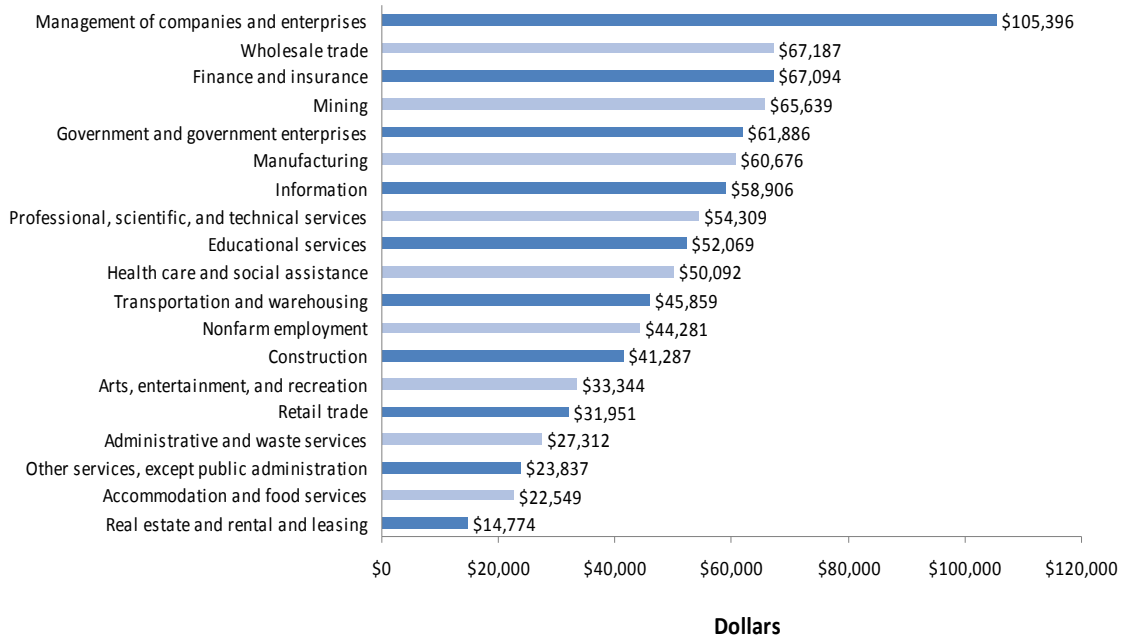
Employment grew 0.8 percent per year in Davidson County between 1999-2007, just below the statewide average of 1.2 percent (see Figure 4). Total nonfarm average wages in Davidson County were \$44,281 for 2007, with the highest salaries paid in the management of companies and enterprises industry (\$105,396), followed by wholesale trade (\$67,187), and finance and insurance (\$67,094). The industry with the highest number of employees is healthcare and social assistance, followed by retail trade. Figure 5 shows 2007 average salaries in Davidson County for selected industries and Figure 6 shows the number of jobs for industries in Davidson County.

FIGURE 4
Nonfarm Employment Growth, 1999-2007



Source: Bureau of Economic Analysis.

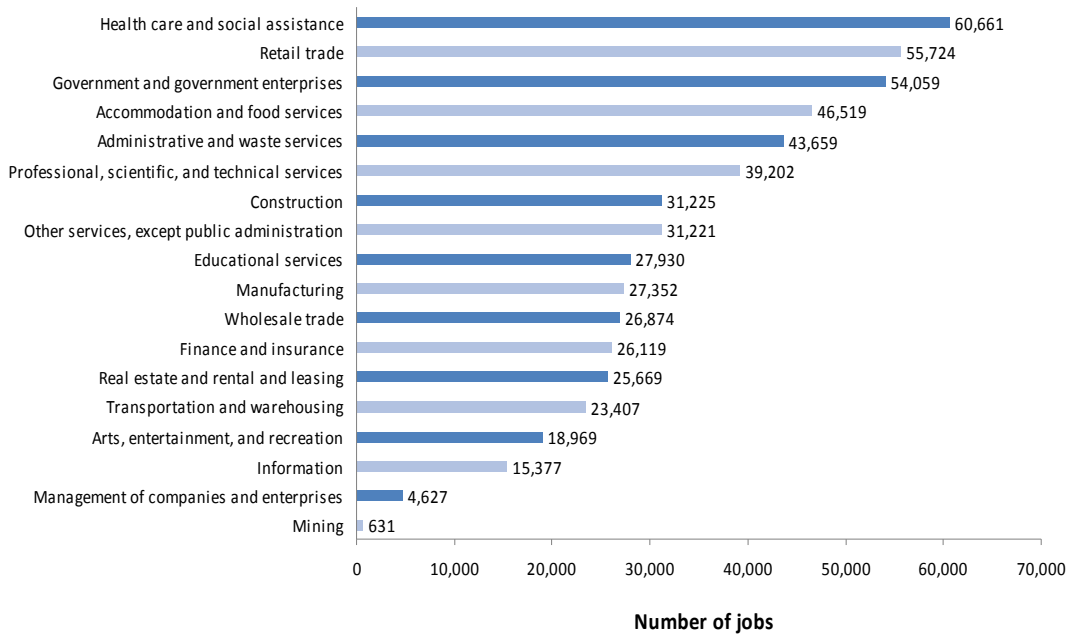
FIGURE 5
Davidson County Average Wages per Job, 2007



Note: Forestry, fishing, related activities, and other utilities are not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis.

FIGURE 6
Davidson County Employment by Industry, 2007



Note: Forestry, fishing, related activities, and other utilities are not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis.

Property and sales taxes account for nearly two-thirds of Metro Nashville’s revenues. Property tax revenues grew five percent annually since 1999 and raised over \$750 million in 2008. Property values have increased steadily during the last decade. (See Figures 7 and 8). Despite the increase in sales and property tax revenues, Davidson County’s budget has grown at a slower rate than some of its neighboring counties. Sales tax revenues grew 4 percent annually since 1999 and raised approximately \$940 million in 2008 (See Figure 9). In addition, Davidson County collected \$258 million in local sales tax revenue in 2008, more than three times the amount collected by any other county in the MSA. (See Figure 10).

FIGURE 7
Davidson County-Nashville Property Tax Revenues



Note: Excludes property tax revenues for cities other than Nashville.

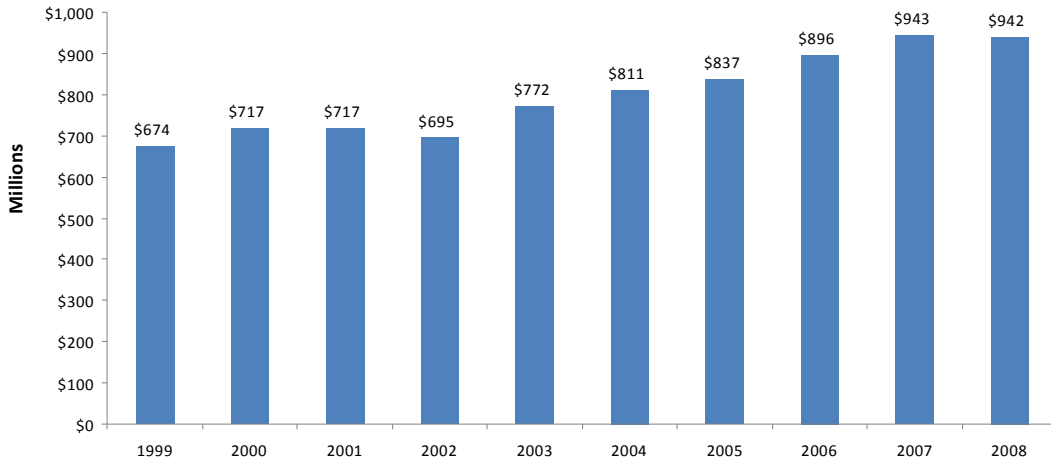
Source: Metropolitan Government of Nashville and Davidson County, Tennessee.

FIGURE 8
Davidson County Estimated Current Property Value



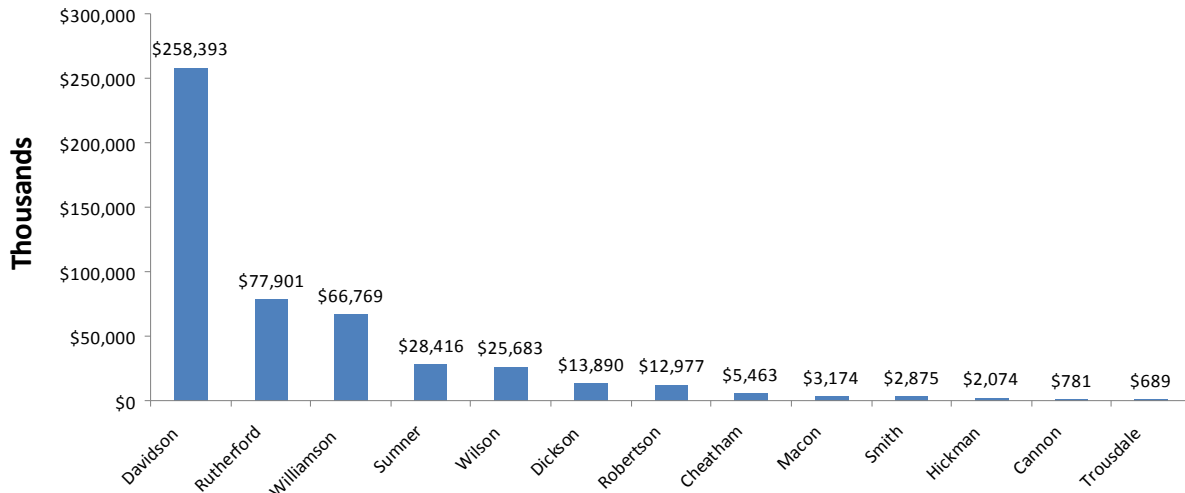
Source: State Aggregate Report of Tennessee.

FIGURE 9
Davidson County State Sales Tax Revenue Collections by Fiscal Year



Source: Tennessee Department of Revenue.

FIGURE 10
Local Sales Tax Revenue Collections by Nashville MSA Counties, FY 2008



Source: Tennessee Department of Revenue

IV. MAY TOWN CENTER COMPETITION

Overview

May Town Center will compete against markets within Davidson County, the surrounding Nashville MSA, and nationally. As part of this economic impact study, we assessed the regional and local competitive landscape based on the development components of MTC and the market in which Davidson County competes. We do not believe that MTC will directly compete with other metropolitan cities such as Atlanta or Charlotte. Instead, firms will decide whether they want to locate in the Nashville metro area and then choose between the possible sites in the area. Therefore, we focus our competitive analysis on selected adjacent counties.

We identified regional and local competitive sites and assessed their strengths and challenges relative to MTC. We focus mostly on large office complexes and mixed-use developments with a combination of office, retail, and/or residential components. Regional competitors are defined here as those in counties surrounding Davidson County whereas local competitors are in Davidson County.

Our broader market evaluation focuses on the five most populated counties within the Nashville MSA including Davidson, Williamson, Rutherford, Sumner and Wilson counties. These five counties were selected because they are deemed to be regionally the most competitive for economic growth and vitality in middle Tennessee. Surrounding counties that have a population of less than 60,000 and lack the amenities to be competitive with MTC were not evaluated.

We collected and analyzed demographic data for each county relevant to the MTC target market. MTC is competing for corporations with a high number of service-based, professional office jobs including finance, technology, science and engineering, research, professional services, real-estate, arts and entertainment, etc. The target market for those who would work at MTC is knowledgeable office professionals and corporate executives. These people are typically college educated, prosperous, and pressed for time. They value a high quality of life, desire local amenities, and prioritize how they spend their personal time away from work. Young singles, couples, and empty nesters are the target market for those who would live at MTC due to its urban appeal, local amenities and social conveniences.

In addition to key strategic business considerations, corporations looking to relocate consider a number of factors including adequate business infrastructure, a thriving business community, and the local quality of life for their employees. Corporations want to attract and retain quality workers and want to locate where their employees will want to live and work. Key county demographic data considered relates to the quantity and quality of the workforce, educational attainment, earned income, affordable housing and the quality of the local public school system. Table 1 shows test scores for the Nashville MSA.

TABLE 1
Percent Proficient and Advanced Test Scores per Nashville MSA School District, 2008

	TCAP		GATEWAY	
	5th Grade Math	5th Grade Reading	9th Grade Algebra I	9th Grade English I
Cannon	91.7	95.2	95.3	93.8
Cheatham	96.7	96.3	97	97
Davidson	87	89	72	91.8
Dickson	96.7	97.5	92.9	97.7
Franklin SSD	98.4	97.9		
Hickman	96.6	97.8	98.6	93.7
Lebanon SSD	94.8	95.9		
Macon	93.9	94.6	95.2	96.7
Murfreesboro	94.3	96.7		
Robertson	92.5	94.6	96.1	96.2
Rutherford	97.1	97.4	94.3	98.1
Smith	97.2	98.6	97.3	96
Sumner	94.4	97.3	95.3	96.9
Trousdale	91.9	96.5	100	98.1
Williamson	97.7	99	95	98.7
Wilson	96.9	97.3	96.3	96.8
<i>State Average</i>	<i>93.8</i>	<i>95.3</i>	<i>87.5</i>	<i>95.6</i>

* The missing data is due to the lack of high schools in the school district

Source: Tennessee Department of Education, 2008 Report Card

The primary sources used in our competitive assessment for research on the office and retail markets, including the square footage and office space vacancy rates, were the Grubb & Ellis and Colliers Turley Martin Tucker 2008 market reports. The Nashville Chamber of Commerce and Metro Planning Department also provided key information. Other sources are referenced in the study.

Additionally, in order to gain a first-hand understanding of the competition and local markets, we visited each of the competitive sites in the Nashville metro area as well as the Reston Town Center, located in Reston, Virginia. Reston Town Center is commonly referred to by the MTC developer as a model product for comparison to MTC.

Davidson County - Downtown - Central Business District and Metro Center

Nashville-Davidson County has a city-county government that focuses on development within Davidson County. Davidson County is the central, most populous county of the Nashville MSA. Downtown Nashville, Green Hills/Music Row, West End/Belle Meade are prominent areas within Davidson County.

County Demographics

- As of July 2008 the estimated population of Davidson County was 626,144, a 1.1 percent annual growth from July 1999 (see Figure 2).
- The 2008 civilian labor force was 324,197 out of 491,971 in the population 16 years and over, the largest in the Nashville MSA.
- In 2007, 27.6 percent of the county's nonfarm employees worked in the industries of information, finance and insurance, real estate and rental and leasing, professional, scientific, and technical services, management of companies and enterprises, and administrative and waste services.
- 33 percent of the population 25 years and over possesses a bachelor's degree or higher and 11 percent of the population in this age range earned a graduate or professional degree (see Table 2).
- The 2007 per capita income was \$43,394.
- Median home value is \$160,500; 55 percent are 1-unit detached, 44 percent are 1-unit attached or multi-family unit (see Table 3).

Key Competitive Sites

Office Market

In this competitive analysis, the Central Business District and Metro Center are included in Downtown based on their location relative to MTC.

- The Central Business District (CBD) is the largest, most established office market in the Nashville MSA. In 1990, Nashville CBD possessed approximately 5 million square feet of office space. Office space has increased modestly by about 2 million square feet over two decades.
- At the end of 2008, the CBD office inventory was 7.1 million square feet, accounting for roughly 23 percent of the total 30.5 million square feet of office space in the metro area. CBD Class A office space is nearly 4 million square feet dispersed among 10 buildings. Due to the current economic slowdown, new construction and recent corporate departures, the vacancy rate climbed from the mid-teens to almost 20 percent.
- The Pinnacle at Symphony Place is under construction and planned to add 500,000 square feet of Class A office space in 29 stories. It is expected to be completed in 2010.

- Traditionally viewed as a small separate office submarket, Metro Center has 1.2 million square feet of office space and a low 3 percent vacancy rate. Together, the CBD and Metro Center account for roughly 27 percent of the total Nashville MSA office market.

Retail and Residential Market

- Downtown has approximately 4,400 residential units, including condominiums, lofts and apartments, that are either in existence today, under construction, or planned for future development.
- Located at The Gulch, a new urban, mixed-use residential and retail development, is Icon and Velocity, two mid-rise condominiums, and Terrazzo, a high-rise condominium. Together, these residential buildings showcase almost 800 hundred units. A bank branch, retail stores, and restaurants are located on the ground floor including BB&T, Urban Outfitters, Sambucca, Watermark, Ru San's and Station Inn.
- Viridian is a 31-story condominium with 305 units and a full-service grocery store on the ground floor lobby.
- Other high-rise condominiums, including Encore and The Signature Tower, have been erected or are planned for construction with hundreds of residential units and tens-of-thousands of square feet of retail space located on the ground floor allowing for street level access.

Strengths and Challenges

Downtown's competitive strengths reside in its central location and multi-functional appeal. At the confluence of three major interstate highways, Downtown is centrally located in the Nashville MSA and is easily accessible to all suburban markets, the Nashville International Airport and John C. Tune Airport. The majority of the Nashville MSA population and employment base live within a 30-minute commute from Downtown and more than one-third of Davidson County workers commute from another county. Despite a growing percentage of jobs moving away from Downtown, Nashville has the 10th most centralized employment base out of 98 U.S. metro areas, according to a research study by the Brookings Institute.

The CBD has a strong employment base with commercial companies and government entities. The largest private employers in the CBD are in banking, finance, telecommunications, legal/professional services, and entertainment industries. Major banking and finance tenants include SunTrust Bank, First Tennessee Bank, US Bancorp, Bank of America, Fifth Third Bank, Regions Bank and Pinnacle Financial Partners. Prominent legal firms include Waller Lansden Dortch & Davis, Stites and Harbinson, Gresham, Smith and Partners, Barge Waggoner Sumner & Cannon Inc. and Bass, Berry & Sims. AT&T and Country Music Television are among other notable corporations in the CBD.

Historically, the CBD has been the preferred location for finance, banking and legal/professional services. Employers in these key industries identify Downtown with their line of work and brand image. The new construction on the Pinnacle at Symphony Place, for example, is where Bass, Berry & Sims and Pinnacle Financial Partners will relocate. Additionally, local, state and federal government activities gravitate Downtown with Nashville being the state capital.

Downtown is also the central hub for civic activity, sports and entertainment, cultural amenities and tourism. Professionals, local residents and visitors alike are drawn to LP Field, Sommet Center, Country Music Hall of Fame, Schermerhorn Symphony Hall, Ryman Auditorium, Frist Center for Visual Arts and Historic 2nd Avenue. And upon its completion in 2012, the Nashville Convention Center will provide a 1.2 million square-foot multi-faceted venue for new business and entertainment activities.

Another strength of Downtown is the ongoing development of new high-rise, high-density residential developments featuring retail and dining options close by. Unlike many large cities that underwent downtown revitalization in the 1990s, Nashville only began to transform Downtown with retail, dining and residential accommodations after the turn of the century. Consider, for instance, that in 2006, the first full-service grocery store Downtown was built in the lobby of the Viridian. Today, common retail developments and amenities are sparse but increasing with the addition of new residential construction.

While Downtown has many strengths compared to those of MTC, it is not without challenges. In recent years, the breadth of companies located in the CBD has shifted, with many companies departing for neighboring Williamson County. Making matters worse, the CBD has had a difficult time attracting new corporations relocating to the Nashville MSA to offset departures. Since 1994, less than ten major companies, most notably Louisiana Pacific, relocated to the CBD. Combined, these companies occupy a total of 250,000 square feet and employ less than 1,000 employees today.

Space constraints preventing potential new developments also present a challenge for the CBD office market. Despite the total reported office space, large, contiguous, unoccupied office space is limited, and existing buildings and infrastructure restrict space to build new, large corporate campuses. The CBD is a comparatively compact area of Downtown with a number of high-rise office and residential buildings. In a few of the remaining blocks where there are no large buildings is where the Nashville Convention Center is slated for construction.

Moreover, limited parking availability and parking cost continues to be challenge for businesses. An estimated 40,000 people work Downtown, yet in the total Downtown vicinity, excluding LP Field, there are roughly 22,000 parking spaces allotted for office, entertainment

and public uses spread across public and private lots, and parking garages and surface lots. Daily parking fees range from \$4 to \$15 per day, and space constraints prevent the addition of one to two thousand new parking spaces should a large corporation relocate Downtown.

Metro Center is not deemed to be a core competitor to MTC even though it is centrally located in Nashville. The office park has a variety of mostly mid-sized office buildings with a few office/warehouses interspersed and lacks many of the contemporary amenities and features found in newer developments. Despite these challenges, Metro Center is still a desirable location for some businesses. In 2008, two buildings were constructed for the Tennessee Bankers Association and Accredo, which added a combined 86,000 square feet of office space.

The development of new office parks and lifestyle amenities in suburban markets, including the potential development of MTC, will continue to present compelling alternatives for companies relocating to or expanding within Nashville. As new “built-to-suit” Class A office space comes on line in surrounding areas, Downtown will likely experience more company departures that are not in the finance and banking industry or government.

MTC also presents an alternative for urban living compared to Downtown. Downtown is undergoing residential re-development, yet parts are old, gritty and completely urban in ambience lacking open green space. A small number of retail outlets and restaurants continue to open. The Gulch is the best example of a new urban retail and residential mixed-use development in Downtown that would compete against MTC for urban residents. On the other hand, MTC will have a new urban feel with a centralized “main street,” planned walkways, parks and offices with easy access to co-located retail and restaurants.

Notwithstanding some overlap in their features, Downtown and MTC will appeal to different markets, and provide more options for urban living in central Nashville. Employees working either Downtown or at MTC will have multiple choices to live and shop near where they work. The synergies gained from Downtown and MTC will not only potentially expand business, employment, and shopping opportunities but could also increase and strengthen the social activity and quality of life in both communities.

Davidson County - Green Hills/Music Row and West End/Belle Meade

Key Competitive Sites

Office Market

Green Hills/Music Row and West End/Belle Meade are areas located in southwest Davidson County within a short drive away from Downtown. In this competitive analysis,

particular interest is given to the Music Row and the West End area, commonly referred to as Midtown.

- The Green Hills/Music Row office space submarket has a total of 1.9 million square feet with a vacancy rate approaching 6 percent.
- Music Row is considered the heart of the Nashville entertainment industry and its offices are home to businesses focused on the music industry, including country music, gospel music and Contemporary Christian music. Music Row is a collection of smaller, multi-use spaces that are used by hundreds of businesses associated with the music industry or radio networks. These offices are regularly in a state of flux based on activities in the music industry and entrepreneurs, and are commonly renovated to or from residential units. The vacancy rate is 6 percent and commonly remains below 10 percent.
- In addition, a variety of professional services, entertainment and legal firms are also prevalent in this area, such as Broadcast Music, Inc. in the BMI building and Boulton, Cummings, Conners & Berry, located in Roundabout Plaza, a 205,000 square foot office building.
- The West End/Belle Meade office space is comprised of 3.3 million square feet and has a vacancy rate less than 4 percent, one of the lowest rates in the metro area. Of this submarket, there is 2.7 million square feet of Class A office space.
- Plans have been approved for the West End Summit, a 1.6 million square foot mixed-use development in the West End, but construction has been delayed. The dual tower design is supposed to contain 500,000 square feet of Class A office space, a hotel, luxury residences, and signature restaurants.

Retail and Residential Market

- The Mall at Green Hills and Hill Center, an open-air lifestyle shopping center, make Green Hills a popular shopping destination. The Mall at Green Hills offers a vast selection of retail stores and restaurants commonly found in large suburban areas.
- One block away, Hill Center offers a complimentary selection of unique, locally owned stores mixed with franchised-restaurants. The 200,000 square feet at Hill Center are anchored by a Whole Foods Market grocery store and West Elm, a brand of Williams-Sonoma.
- At Music Row, Adelia, an 18-story condominium, and Rhythm, a 14-story condominium, are among the new residential developments offering upscale, urban living set atop small retail shops and close to restaurants and an upbeat nightlife.
- The West End has a wide variety of upscale yet casual restaurants and lifestyle shops, such as art galleries, coffee shops and bookstores, in the vicinity of Vanderbilt University. With professionals and students part of the customer base, many restaurants and shops are near West End Avenue or 21st Avenue, within walking distance of campus. This part of town is an active, pedestrian-oriented, business community during the day and an energetic, high-spirited social scene at night.

- Located off I-40 West and Charlotte Pike near Bells Bend, Nashville West is an open-air lifestyle shopping center that has brought a number of desirable retail chains to West Meade in addition to Wal-Mart. Nashville West includes retail stores such as Costco, Target, Best Buy, Marshalls, PetSmart and Staples co-located with restaurants including Logan's Steakhouse and Red Robin.
- A few miles farther west is the Bellevue Mall, which is vacant except for a Sears department store. Should plans move forward to renovate the Bellevue Mall, 800,000 square feet of conventional, closed shopping space will be transformed into a 1.2 million square foot, open-air lifestyle center full of retail stores, restaurants and office space.

Strengths and Challenges

The competitive strengths of Green Hills/Music Row and West End/Belle Meade are based on their geographic location and identity. Similar to MTC, Green Hills and Belle Meade are located near Downtown whereas Music Row and the West End are essentially a continuum of Downtown, known as Midtown. These areas are accessible from the interstate and major roadways, and are conveniently located for the many affluent office professionals who live in southwest Davidson County.

Green Hills/Music Row and West End/Belle Meade each have a distinct professional and social identity, which will likely be strikingly different from that of the proposed MTC. Companies in the healthcare industry have a dominant and long-standing presence in Green Hills, such as Vanguard Health Systems, Ardent Health, and AmSurg Corp. Music Row is rooted in its heritage and historic association with the music industry. The West End has a strong identity as an eclectic, collegiate and business environment interdependent on Downtown and Vanderbilt University. With approximately 12,000 students, Vanderbilt University is a driver of local economic activity and a cultural attraction. Across the street is Centennial Park, a large open green space and where the Parthenon, home to Nashville's art museum, is located. Caterpillar Financial Services, Earl Swensson Associates and Ingram Industries are key tenants and employers in the West End.

Between Green Hills/Music Row and West End/Belle Meade more than 5 million square feet of office space is occupied. These submarkets routinely post the lowest vacancy rates in the metro area, which indicates a strong desire for companies to be located in these areas. This competitive strength, however, also presents a challenge when compared to MTC since large sections of office space and parking lots are limited or unavailable for corporate campuses. Most buildings are older, as is the general neighborhood, and the existing infrastructure cannot be easily changed. In the West End, for example, there are multiple large and compact office buildings and multi-level office spaces above retail plazas. If construction on the West End Summit is resumed, the mixed-use development will be a rare, modern addition of office space combined with first-class amenities in the West End.

With the exclusion of student dormitory units, the residential market in Green Hills/Music Row and West End/Belle Meade is highlighted with modern developments set within a number of historic, early-to-mid 20th century single family residence and multi-family units. Mixed-use residential units are not in as high demand as other areas due to the convenient access to local amenities bordering Vanderbilt University, Belmont University and Centennial Park.

MTC creates a viable alternative destination to work and live compared to Green Hills/Music Row and West End/Belle Meade. Many companies whose business is reinforced by being in these areas, such as those in the healthcare industry, music industry or academic community, and residents who cherish the ambiance and relate to the location's identity are likely to stay put in lieu of MTC. Other companies and residents with less affinity for this area are likely to move to MTC to take advantage of newer facilities and amenities still within close proximity.

At first glance, Nashville West and the potential renovation at Bellevue Mall might appear to make the retail shops at MTC redundant. However, the retail stores in these locations are expected to enhance the overall appeal of MTC by diversifying the broader retail selection. Unlike the stores commonly found in suburban malls and Nashville West, MTC is not planning to include department stores, national retail chains and big-box retailers, such as Wal-Mart, Target, or Sears. Instead, MTC retail shops will be a collection of boutiques, specialty stores and upscale brand-name stores. MTC residents can travel a few miles to the other side of the Cumberland River to purchase everyday goods, and at the same time, residents in Green Hills/Music Row and West End/Belle Meade, who regularly travel to Cool Springs, will have a closer selection of boutiques and specialty stores found in MTC.

Williamson County – Brentwood and Cool Springs/Franklin

Williamson County is one of the nation's fastest growing counties in the country and most affluent in the Nashville MSA. Rapid economic development has resulted in upscale suburban neighborhoods, Cool Springs shopping district, and large office parks in Brentwood and Franklin, the county seat.

County Demographics

- As of July 2008 the estimated population of Williamson County was 171,452, a 3.8 percent annual growth from July 1999 (see Figure 2).
- The 2008 civilian labor force was 57,390 out of the 132,900 in the population 16 years and over.
- In 2007, 36.8 percent of the county's nonfarm employees worked in the industries of information, finance and insurance, real estate and rental and leasing, professional,

scientific, and technical services, management of companies and enterprises, and administrative and waste services.

- 51 percent of the population 25 years and over possesses a bachelor's degree or higher and 18 percent of the population in this age range earned a graduate or professional degree (see Table 2).
- The 2007 per capita income was \$54,755.
- Median home value is \$340,200; 81 percent are 1-unit detached, 16 percent are 1-unit attached or multi-family unit (see Table 3).

Key Competitive Sites

Office Market

- A review of the office market in Williamson County finds that the Brentwood development has 5.1 million square feet of office space with a vacancy rate of 7 percent. Maryland Farms, a corporate office park established two decades ago to attract business to Williamson County, accounts for roughly 80 percent of total square feet in Brentwood.
- Cool Springs/Franklin office inventory is 5.2 million square feet. In 2008, seven Class A office buildings totaling more than 1.2 million square feet were constructed bringing total Class A office space to 4.5 million square feet. Cool Springs' net positive absorption was just less than 1 million square feet, and almost all of this was Class A office space. The vacancy rate increased to over 11 percent due to slow economic conditions and new construction.
- McEwen Town Center, under construction, and Berry Farms, still a green field, are two mixed-use developments along I-65 that will be at the forefront of office space development. McEwen will have 300,000 square feet of Class A office space, with 160,000 square feet designated for corporate headquarters.
- Berry Farms is expected to contain a total of 3.1 million square feet of office space across three developments. Each development will reserve multiple office sites ranging from 125,000 to 225,000 square feet in size to be used for corporate headquarter campuses.

Retail and Residential Market

- Cool Springs/Franklin is the retail and dining mecca in middle Tennessee. The cornerstone of the Franklin community is Cool Springs Galleria. The second largest shopping mall in Tennessee, Cool Springs offers an extraordinary selection of prime retailers, dining options and entertainment venues unrivaled by any other submarket.
- McEwen Town Center will have 300,000 square feet of retail space and 950 residential units.
- Berry Farms will be divided into three sections: Berry Farms Town Center, Reams-Fleming and Chadwell. Berry Farms Town Center will have 550,000 square feet of retail space, and mix of town homes, apartments, condominiums and single family lots for a total of 646 units. Reams-Fleming will provide 850,000 square feet of retail space and 400 residential apartments. Chadwell is slated for 393,000 square feet with only 100 residential units.

These locations will contain higher-end retail stores than nearby Cool Springs, upscale residences, hotels and designated green space for civic functions.

- A master-planned neighborhood community, McKays Mill is located on a 540-acre community with miles of walking and biking trails, green space and parks connecting over 1,200 residential units ranging from single-family to condominiums. The McKay Mill Village Center is a smaller mixed-use neighborhood facility anchored by a Publix grocery store.

Strengths and Challenges

Williamson County's population, public school systems, and new business infrastructure are key strengths relative to MTC. Williamson County has the most highly educated, most affluent residents and the civilian labor workforce has the largest percentage of professional, service-oriented occupations and industries in the Nashville MSA. Both the Franklin Special School District (grades K-8) and the Williamson County School System (grades 9-12) are consistently recognized as one of the top public school system's in the state of Tennessee.

Cool Springs/Franklin has become the target location for large corporate relocations in the Nashville MSA, and poses the greatest competitive threat to MTC and Downtown. Companies such as Nissan North America, Verizon Wireless, Mars Petcare, Tractor Supply Co. and Healthways have relocated their headquarters to Williamson County. In the next few years, Cool Springs/Franklin is expected to surpass the CBD submarket for total office space inventory in the Nashville MSA.

Over the past decade, Cool Springs/Franklin has focused on building a variety of large corporate campuses and office parks, with ample parking spaces, in close proximity to retail and residential developments. Today, these development plans are reaping dividends. A surge in population growth, new retail districts and residential neighborhoods, and the attraction of first-rate companies has significantly increased property and sales tax revenues.

Williamson County benefits from the vast expanse of large farm land and undeveloped acreage encircling Cool Springs/Franklin. Already the retail growth engine in the region, Cool Springs/Franklin has aggressive, creative plans to further grow and diversify its office, shopping and living experience by boldly introducing mixed-use developments in a suburban landscape. The aforementioned McEwen Town Center and Berry Farms will make the biggest impression as mixed-use properties competing with MTC assuming both properties develop fully according to plans. Like MTC, McEwen Town Center and Berry Farms tout plans to attract corporate headquarters, include chic boutiques, specialty stores and upscale restaurants with luxury new urban residential units.

Maryland Farms is an upscale suburban office park and remains a viable alternative office complex to MTC for medium-sized corporations. While it has more than 5 million square

feet of total office space, Maryland Farms is a collection of multi-story office buildings not suitable for corporations with a high number of employees. Maryland Farms is a few miles away from Cool Springs where contemporary lifestyle amenities abound.

Some of Brentwood's and Cool Springs/Franklin's primary strengths are also their challenges compared to MTC. Home values and the percentage of single family homes versus multi-family units is the highest in Williamson County. The median home value in Williamson County is more than twice the values in the majority of counties in the Nashville MSA. The elevated home values may present a challenge for employers depending on the level of compensation they expect to pay their employees in relation to the cost of living. Moreover, there is a reduced number of multi-family units in these cities.

The suburban location and commute time to metro areas from Brentwood and Cool Springs/Franklin are a challenge for companies wishing to be more centrally located in an urban setting. Cool Springs/Franklin is located 20 miles from downtown and 25 miles from the Nashville International Airport. Brentwood is about 7 miles closer to Downtown and the airport. Companies must consider if they want to place their headquarters in a suburban environment in Williamson County versus a centralized, urban setting in or near Downtown Nashville in Davidson County.

Rutherford County – Murfreesboro and Smyrna

Rutherford County has the fastest growing population in the Nashville MSA. Between Murfreesboro and Smyrna there is solid economic activity. Murfreesboro, where the majority of new growth is occurring, is the county seat and home to Middle Tennessee State University.

County Demographics

- As of July 2008 the estimated population of Rutherford County was 249,270, a 3.8 percent annual growth from July 1999 (see Figure 2).
- The 2008 civilian labor force was 130,934 out of the 189,960 in the population 16 years and over.
- In 2007, 23.6 percent of the county's nonfarm employees worked in the industries of information, finance and insurance, real estate and rental and leasing, professional, scientific, and technical services, management of companies and enterprises, and administrative and waste services.
- 25 percent of the population over 25 years and over possesses a bachelor's degree or higher and 7 percent of the population in this age range earned a graduate or professional degree (see Table 2).
- The 2007 per capita income was \$30,761.
- Median home value is \$156,800; 71 percent are 1-unit detached, 23 percent are 1-unit attached or multi-family unit (see Table 3).

Key Competitive Sites

Office Market

- Murfreesboro is the smallest submarket for office space with 332,000 square feet and 20 percent vacancy.
- The Offices at Gateway in Murfreesboro, a future mixed-use development, plans to include 350,000 square feet of office and retail space.
- Smyrna has a number of small office spaces and businesses with industrial operations, such as the Nissan's manufacturing plant.

Retail and Residential Market

- Retail and dining developments like The Avenue of Murfreesboro and newly remodeled Stones River Mall are modernizing and diversifying the selection of shops and restaurants in Murfreesboro in addition to the Marketplace Center.
- The Avenue of Murfreesboro, located off I-24, is a open-air lifestyle center with many chain stores and restaurants. Well-known shops include Barnes & Noble, Best Buy, Old Navy, Victoria's Secret, Belk, and Haverty's. Macaroni Grill and Mimi's Café are popular restaurants.
- In Smyrna, 10 miles north of Murfreesboro along I-24 and Sam Ridley Parkway, Colonial TownPark has 400,000 square feet of retail space, restaurants, and a movie theatre with hotels nearby. Anchor stores include Super Target, Kohl's, PetSmart, Staples and Ross.

Strengths and Challenges

Rutherford County's rapidly growing population, large workforce and breadth of companies are key competitive strengths. Rutherford County has the second largest civilian workforce in the Nashville MSA, but the per capita income is the lowest among the five counties analyzed. Rutherford County is home to companies in many different industries including manufacturing, insurance, education and healthcare. Nissan, Bridgestone-Firestone, State Farm, Ingram Book Group, Middle Tennessee State University and Middle Tennessee Medical Center are some of the largest employers in the county.

The office market in Murfreesboro and Smyrna is not expected to be a prime competitor to MTC. Today, a lack of large office space suitable for large corporate relocations is a major challenge for Murfreesboro. However, planned new construction in the Murfreesboro Gateway development will increase its competitive positioning. Construction continues on the Middle Tennessee Medical Center and land is available along Medical Center Parkway for the development of mid-to-large size office buildings and mixed-use facilities in the future. The industrial marketplace in Smyrna does not demand large corporate office space proposed by MTC.

Murfreesboro is the farthest suburban area included in this study, located approximately 30 miles from downtown and the Nashville International Airport. Smyrna is about 20 miles from each destination. With The Avenue, Stones River Mall, and Colonial TownPark, Murfreesboro and Smyrna have a selection of national chain retail stores and restaurants where residents can shop and dine locally in the suburbs. Residents seeking a broader selection of specialty stores will likely travel on Hwy 840 to neighboring Franklin in Williamsburg County or Mount Juliet in Wilson County to meet their diverse shopping needs before seeking MTC due to location.

Sumner County - Hendersonville and Gallatin

Sumner County has a steady commercial business base in Gallatin, the county seat, and Hendersonville, with residential areas spread throughout the county. Portland has a stable industrial base.

County Demographics

- As of July 2008 the estimated population of Sumner County was 155,474, a 2.2 percent annual growth from July 1999 (see Figure 2).
- The 2008 civilian labor force was 79,490 out of the 122,028 in the population 16 years and over.
- In 2007, 18.4 percent of the county's nonfarm employees worked in the industries of information, finance and insurance, real estate and rental and leasing, professional, scientific, and technical services, management of companies and enterprises, and administrative and waste services .
- 20 percent of the population over 25 years and over possesses a bachelor's degree or higher and 5 percent of the population in this age range earned a graduate or professional degree (see Table 2).
- The 2007 per capita income was \$33,268.
- Median home value is \$159,300; 74 percent are 1-unit detached, 19 are percent 1-unit attached or multi-family unit (see Table 3).

Key Competitive Sites

Office Market

- Located of Hwy 386, The Streets of Indian Lake, a mixed-use development at Indian Lake Village in Hendersonville, plans for availability for up to 2.3 million square feet of Class A office space.
- A few miles east on Nashville Pike in Gallatin, Kennesaw Farms, another mixed-use development, plans for a 43-acre business park with Class A office space. Office construction has not yet started.

- These new developments will be a welcome addition to the 500,000 square feet of office space currently housed in six Class A buildings, where the vacancy rate hovers around 30 percent.

Retail and Residential Market

- In addition to office space, The Streets of Indian Lake offers 500,000 square feet of retail and restaurant space and includes 1,900 home sites and 968 residential units. Popular chain and local stores and restaurants are co-located, and at one end of the central green space is a 70,000 square foot, 3,000-seat movie theatre. A community park and library are located at the outskirts of the development.
- The Rivergate Mall and Glen Brook shopping plaza, with common anchor stores, chain restaurants and a Kroger grocery store, present additional retail and dining alternatives around Hendersonville.
- The Shops at Greensboro Village, across from Volunteer State Community College in Gallatin, has 20,000 square feet of retail space in addition to Publix grocery store and Walgreens.
- Kennesaw Farms is expected to be a lifestyle center with 350,000 square feet of open-air shopping and includes a Thoroughbred Park. In the early stages of development, the residences at Kennesaw Farms are planned to include more than 700 residences from town homes to single-family units are included.

Strengths and Challenges

Key economic activity in Sumner County is based on the manufacturing, retail trade, educational and healthcare and social services. Three of the top six employers in Sumner County include the Sumner County Public Schools, Sumner Regional Medical Center and Volunteer State Community College. Other leading employers include Unipres, an automotive supply manufacturer, and Macy's Distribution Center in Portland, and the Gap Distribution Center in Gallatin. In contrast to MTC, the business community and employment opportunities in Sumner County are not predominantly driven by service-based, professional office jobs.

Today, Sumner County lacks the office space capacity to compete with MTC to attract medium and large-size companies. With two new mixed-use developments underway, however, Sumner County has the potential to become a relevant competitor in the future. It will be important for Hendersonville to attract its first large corporate tenant to begin significant build out the planned 2 million square feet of office space in Indian Lake Village.

The geographic location and transportation infrastructure also present challenges for Hendersonville and Gallatin in Sumner County. Located northeast of the Cumberland River, these two cities are mostly accessible from Hwy 386 and Nashville Pike off the I-65 corridor from Downtown Nashville. As a result, Hendersonville and Gallatin are at least 25-30 miles

from Downtown and the Nashville International Airport. Additionally, the longer traveling distance to Downtown, Brentwood and Cool Springs/Franklin, areas with the highest concentration of corporations and jobs, is a challenge for companies drawing from a regional employment base.

With the advent of The Streets of Indian Lake and Glen Brooke Plaza, residents in Hendersonville have new open-air lifestyle centers to complement their shopping selection at Rivergate Mall. If Kennesaw Farms develops according to plans, Gallatin residents will have upscale retail and restaurants close by. Collectively, these retail developments provide competitive local choices in Sumner County compared to MTC.

Wilson County – Mount Juliet

Wilson County continues to grow in residential, commercial and industrial development. Lebanon is the county seat and county's largest city, but Mount Juliet, closer to Downtown, is where much of the new development has occurred.

County Demographics

- As of July 2008 the estimated population of Wilson County was 109,803, a 2.6 percent annual growth from July 1999 (see Figure 2).
- The 2008 civilian labor force was 57,390 out of the 85,761 in the population 16 years and over.
- In 2007, 16.7 percent of the county's nonfarm employees worked in the industries of information, finance and insurance, real estate and rental and leasing, professional, scientific, and technical services, management of companies and enterprises, and administrative and waste services.
- 23 percent of the population over 25 years and over possesses a bachelor's degree or higher and 7 percent of the population in this age range earned a graduate or professional degree (see Table 2)
- The 2007 per capita income was \$36,522.
- Median home value is \$182,300; 78 percent are 1-unit detached, 11 percent are 1-unit attached or multi-family unit (see Table 3).

Key Competitive Sites

Office Market

- The office space in Wilson County has traditionally not been considered an office submarket of the Nashville MSA. Office space is limited and mostly rated Class B or C.
- Additional office space is coming with new mixed-use developments in Mount Juliet Crossing, The Paddocks and Fountain Plaza.

Retail and Residential Market

- Providence Marketplace and The Paddocks are new, large-scale mixed-use attractions in Mount Juliet, about 17 miles east of Downtown near the intersection of I-40 and Hwy 171. The largest open-air shopping center in middle Tennessee, Providence Marketplace is touted as the regional “Omnnicenter” with more than 800,000 square feet of retail space, containing department stores and specialty shops, a movie complex, and a Kroger grocery store. The Marketplace is connected to Providence, a 1,000 acre master-planned, suburban community¹³.
- Under construction, The Paddocks will be finished with 1 million square feet of commercial and retail space, anchored by a Super Wal-Mart and Lowe’s.

Strengths and Challenges

Wilson County has an economic base primarily composed of the commercial and industrial markets. A few of the leading employers include CBRL Group, Dell Computers, and TRW Automotive Commercial Steering Division.

Of the five counties evaluated, Wilson County has the smallest population and civilian workforce, and the smallest percentage of workers in professional service-related industries target by MTC . These challenges in conjunction with the lack of Class A office space prevents Mount Juliet and Wilson County from being a competitor in the office market to MTC.

The Providence Marketplace, on the other hand, is a retail competitor to MTC for residents living east of Nashville. Providence Marketplace, complimented by The Paddocks, offers a myriad of retail options in a traditional suburban environment.

Competition Summary

Nashville-Davidson County has had difficulty in attracting and retaining corporate relocations as the existing office infrastructure is not available for large corporate campuses with nearby local amenities. MTC is a proposed mixed-use development in Davidson County that offers a compelling alternative to competitive sites in the Nashville metro area.

MTC is planned to be a massive development unlike any other mixed-use development in the Nashville metro area. Employing smart growth principles, MTC will be developed on 550 acres and close to 900 acres will remain as green space, parks, demonstration farm or undeveloped land. After the completion of the multi-phase development of corporate campuses, MTC will nearly double the total Class A office space in Davidson County, providing plenty of office space, with sufficient parking spaces, that can potentially attract new large corporations. MTC will offer a wide range of specialty retail shops and signature restaurants, entertainment venues and community gathering spaces. Combined with high-density housing

options, MTC will create a highly desirable new urban alternative in Davidson County for Nashville metro area residents to work, live, shop and play around the clock.

Within Davidson County, MTC will compete with existing office developments in Downtown and Green Hills/Music Row and West End/Belle Meade. Companies in the financial, banking and professional services industries, the largest employers Downtown, will generally want to stay Downtown. Likewise, companies with business ties to Downtown, Vanderbilt University or Belmont University, and the music industry, or that prefer to be closer to Green Hills and Belle Meade are not likely to relocate to MTC. However, other companies will likely be drawn to MTC and other suburban markets more conducive to their changing business needs and those of their employees.

MTC is likely to provide additional synergies to the retail and residential market in Downtown and Green Hills/Music Row and West End/Belle Meade. Nashville has traditionally been comprised of multiple suburban markets surrounding the Downtown business center. MTC, together with the re-development of Downtown, provides new, different urban living alternatives within close proximity to one another in Davidson County. Furthermore, the selection of retail stores near Downtown is limited, and MTC will bring new shopping opportunities by providing a wide array of new retail stores not commonplace to suburban malls.

Cool Springs/Franklin in Williamson County is the most formidable competition to MTC and Downtown in Davidson County. Past office and retail infrastructure investments, a surge in affluent office professionals, top-rated schools and a perceived “business-friendly” environment have led to corporate relocations and rapid economic expansion in Williamson County. Additionally, two planned mixed-use developments are expected to present competitive office, retail and residential offerings relative to MTC.

While Cool Springs/Franklin will continue to attract corporate relocations with multiple millions of square feet of new office space and an unmatched assortment of local amenities in the suburbs, MTC will offer a competitive, new urban development centrally located in Nashville in Davidson County.

Multiple new mixed-use lifestyle developments have been built or are under construction in Rutherford, Sumner and Wilson counties in response to the rapid population and job growth in these counties. In comparison to MTC, these developments offer new retail, dining and living options in a traditional suburban environment, giving residents more choices where to live and play outside of Davidson County. However, the total office space in Murfreesboro and Smyrna, Hendersonville and Gallatin, and Mount Juliet is underwhelming when compared to developments in Davidson and Williamson counties, and these sites are not

deemed to be primary office market competitors to MTC. While this competitive position may change with future office development at or near these mixed-use developments, geographic location will continue to be a challenge relative to MTC or Downtown.

TABLE 2
Educational Attainment

	Davidson	Rutherford	Sumner	Williamson	Wilson
Population 25 years and over	415,874	149,555	103,017	108,201	71,031
Associate's degree	24,267	11,350	5,878	5,510	5,391
Bachelor's degree	91,782	26,845	14,922	35,548	10,999
Graduate or professional degree	47,172	10,739	5,569	19,228	5,282
Percent high school graduate or higher	84.7	87.6	82.5	94.2	87.2
Percent bachelor's degree or higher	33.4	25.1	19.9	50.6	22.9
Percent Graduate or professional degree	11.3	7.2	5.4	17.8	7.4

Source: U.S. Census Bureau, 2007 American Community Survey

TABLE 3
Affordable Selection of Housing

	Davidson	Rutherford	Sumner	Williamson	Wilson
UNITS IN STRUCTURE					
<i>Total housing units</i>	<i>278,855</i>	<i>98,832</i>	<i>62,020</i>	<i>61,456</i>	<i>42,551</i>
1-unit, detached (percent)	55	71	74	81	78
1-unit, attached and multi-family unit (percent)	44	23	19	16	11
Mobile home, other (percent)	1	6	7	3	11
VALUE					
<i>Owner-occupied units</i>	<i>152,960</i>	<i>63,686</i>	<i>42,820</i>	<i>48,131</i>	<i>33,194</i>
Median home value (dollars)	160,500	156,800	159,300	340,200	182,300

Source: U.S. Census Bureau, 2007 American Community Survey

V. MAY TOWN CENTER ECONOMIC IMPACT

Overview

The purpose of this section is to estimate the economic and tax revenue impact of MTC on Davidson County. The starting point of our analysis is the development plan prepared by MTC. The summary benchmarks for the major activities are presented in Table 4 below. We make no claims as to the reasonableness of these plans and caution that the timing and extent of actual development over the twenty years or longer life of the project could differ substantially from these original projections, as the developers themselves acknowledge. The pace of development is especially difficult to predict given the deep recession currently underway and the nearly unprecedented slowdown in residential construction that in recent months appears to have spread to commercial real estate. However, this report is not a feasibility study for MTC; rather we analyze the effects of MTC on Davidson County based on the assumption that the development over time will approximate current plans. In addition to the developer's build-out projections, we use data from a variety of sources to develop our estimates. Throughout this report, we assume constant 2009 dollars. Therefore, none of the estimates herein depend directly on future growth in wages or property values.

The economic impact analysis of MTC is divided into two main sections. We first discuss the development and construction activities. Although the development period is long, over two decades at least, the economic impacts for construction are non-recurring. A discussion of the ongoing office, retail and hotel operations follows. We concentrate our private sector discussion on jobs created and the associated incomes. The public sector impacts include additional property taxes from commercial and residential real estate and the sales taxes both on purchases within MTC and also by employees and residents of MTC throughout Davidson County. The hotel will also generate hotel/motel taxes for the MTC's planned 600 rooms, but the net new revenues are expected to be small and earmarked for specific purposes so we do not estimate these taxes. We discuss the public sector costs associated with the project in the following section.

The report is primarily concerned with income and employment gains for Davidson County rather than for MTC. For example, a tenant that moves from the CBD to MTC is a shift of a job and income within Davidson County rather than a new job. On the other hand, a job that moves from Williamson County to MTC is a net gain in employment for Davidson County. Our estimates are for jobs and income earned in Davidson County regardless of whether the jobs are held or the incomes earned by residents or non-residents. The planning commission may want to consider those incomes earned by non-residents differently than income earned by residents, who live in the county and are more likely to spend that income within the county.

The economic impact has three components: direct effects, indirect effects, and multiplier effects. The direct effects are activity or employment at the MTC that would not otherwise be in Davidson County. In this regard, it is important to remember that Davidson County receives new economic activity even if the activity is shifted from a neighboring county. Indirect economic activity occurs as MTC employers buy materials, supplies, computers, and other inputs from Davidson County firms, thereby creating jobs and profits in other businesses. The direct and indirect economic activity in MTC has a ripple effect (i.e., the multiplier effect) on the surrounding economy, creating additional jobs, income, and spending not directly related to employment and spending at MTC. The multiplier effect results as direct and indirect employees shop, eat, and live in Davidson County.

We provide estimates of economic activity at MTC build out completion estimates using the following building projections at 50 percent, 75 percent, and 100 percent:

**TABLE 4
Build Out Projections**

	50% Built Out 2012 – 2023 Phases I – III	75% Built Out 2024 – 2027 Phase IV	100% Built Out 2028 – 2031 Phase V
Office (Sq. Ft.)	5,000,000	6,700,000	8,000,000
Residential (Units)	4,000	6,250	8,000
Retail (Sq. Ft.)	300,000	575,000	600,000
Hotel (Keys)	300	600	600

Economic Impact of Construction

The developers estimate that investment in MTC will total greater than \$4 billion over the more than 20 year life of the project. The construction timeline is tentative and will depend on market conditions, factors which we do not estimate here. Even though construction will occur over a very long time period, the jobs are temporary and the number of jobs in any one year will depend on the pace of construction. Therefore, rather than present the estimates of job creation by year, or on an annual basis, we present them as job years in total. For purposes of this report, ten new construction jobs could represent ten jobs for one year, two jobs for five years, etc.

Estimates of Jobs Created

For all construction projects, we estimate that at the halfway point of the MTC completion and including multiplier effects on the entire county, approximately 28,600 jobs will be created.² At project’s end, the development will create over 50,500 jobs. Nearly 48,000 of the jobs relate to residential and office construction, with the hotel and retail projects accounting for the remainder. If the development proceeds ratably over a 20 year period, the construction alone will support about 2,500 Nashville-Davidson County jobs per year for the duration of construction.

Our employment estimate is for new economic activity where the jobs take place. Therefore, our estimate does not represent the jobs of Davidson County residents. According to the 2000 U.S. Census, 37.7 percent of Davidson County workers commute to work from surrounding counties and states. Consequently, at a maximum we would expect that only 62.3 percent of these jobs would go to Davidson County residents, but in our experience, construction sector employees are less likely to work at their place of residence than average industry employees. Therefore, we believe a significantly smaller share of employment would go to Davidson County residents.³ No adjustment is made in our results for non-resident job holding. Table 5 presents a summary of our estimate of the total new construction jobs that take place in Davidson County.

TABLE 5
Estimated New Construction Jobs for Davidson County

	50% Built Out	75% Built Out	100% Built Out
Office	16,551	22,178	26,481
Residential	10,650	16,639	21,298
Retail	794	1,523	1,589
Hotel	578	1,157	1,157
<i>Total</i>	<i>28,573</i>	<i>41,497</i>	<i>50,525</i>

2 We begin our analysis of indirect and multiplier effects using RIMS II state multipliers taken from the U.S. Department of Commerce. The multipliers were reduced for application to a single county. We assume that one-fourth of the construction would have occurred in Nashville-Davidson County without the MTC.

3 MTC estimates that approximately 30 percent of the new construction jobs will go to Davidson County residents, with the bulk of new employees being drawn from the MSA including Dickson and Sumner counties.

Estimates of Earnings

We estimate total earnings paid in Davidson County from the construction phase to be approximately \$1.3 billion halfway through the project and about \$2.3 billion at completion. However, not all of the economic benefits of these earnings will accrue to Davidson County for reasons discussed above. Most importantly is the tendency of non-Davidson County residents to consume in their county of residence. Consistent with our adjustment for construction jobs, we estimate that one fourth of the total earnings at MTC would have otherwise occurred in Davidson County and are not new earnings. Table 6 reflects this adjustment.

TABLE 6
Estimated Construction Earnings in Nashville-Davidson County (2009 Dollars)

	50% Built Out	75% Built Out	100% Built Out
Earnings	\$973,948,274	\$1,414,453,505	\$1,722,187,898

Economic Impact of Ongoing Operations

This section discusses the economic impact on Davidson County of new jobs and earnings associated with the companies that are located in MTC. We discuss our estimates for employment first, followed by our estimates of earnings.

Estimated Employment from Operations

The economic effects for ongoing operations in MTC arise from the office complexes, retail outlets, restaurants and a hotel. We estimate the total number of employees using the developer’s projections of total square footage for the various operations in MTC, reducing the total for non-useable space (e.g., bathrooms, hallways) and assuming a vacancy rate of 10 percent. The maximum total employment at MTC is summarized in Table 7. This differs from the economic effect in Davidson County because many of these jobs would have located elsewhere in the county even without MTC.

TABLE 7
Maximum Total Employment at MTC

Activity	50% Built Out	75% Built Out	100% Built Out
Office	16,875	22,613	27,000
Retail & Restaurant	540	1,035	1,080
Hotel	240	480	480
<i>Totals</i>	<i>17,655</i>	<i>24,128</i>	<i>28,560</i>

The gross employment at MTC is adjusted to measure net new employment in Davidson County. We discuss each major activity and our estimates of the overall impact on Davidson County, below. We estimate that approximately 63 percent of the total net new employment in Davidson County will come directly from MTC and the remaining 37 percent results from indirect and multiplier effects (See Figure 11). We present our estimates of net new Davidson County employment in Table 8. We estimate approximately 14,000 total new jobs at the end of Phase III (50 percent completion) or approximately 1,160 new jobs each year.

To put this in perspective with the overall Nashville jobs market, according to the Bureau of Economic Analysis, non-agriculture employment in Davidson County was 526,241 and 559,758 in 1999 and 2007. Thus, Davidson County's employment has been rising by about 4,200 new jobs each year. Including the construction jobs of an average 2,500 jobs in any one year and the predicted net growth in jobs growth resulting from MTC would represent a substantial share of total Davidson County growth in recent years. This requires MTC to dramatically change the economic prospects for Davidson County over the coming years, and would make us uncomfortable anticipating any greater effect of MTC activity on Davidson County. The gains if realized would have a major impact on Nashville and the surrounding area.

FIGURE 11
Net New Employment in Davidson County

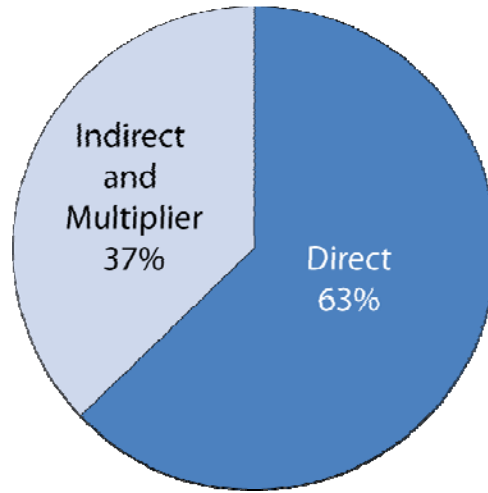


TABLE 8
Net New Employment to Davidson County

Activity	50% Built Out	75% Built Out	100% Built Out
Office	13,419	17,981	21,470
Retail & Restaurant	362	694	724
Hotel	128	318	318
<i>Total</i>	<i>13,909</i>	<i>18,993</i>	<i>22,512</i>

Office Complexes

Office space is expected to total 5 million square feet by the end of Phase III and 8 million square feet at completion. The maximum job gain estimates reported in Table 7 were adjusted for two factors. First, the direct employment by MTC will have indirect and multiplier effects on Davidson County as they live and work in Nashville, eat out, shop for clothes, hire landscapers and repairmen, etc. Second, a new MTC worker is a net positive for Nashville/Davidson County only if that worker would otherwise have located outside Davidson Country. For example, firms planning a move to Nashville and selecting MTC over the Nashville CBD, or firms moving from Green Hills to MTC, shift economic activity within Davidson Country rather than adding directly to it.

Some proponents of the development may argue that MTC is unique and will not compete with existing locations in Davidson County, and therefore 100 percent of the tenants attracted to MTC would otherwise have located outside Davidson County. We believe this may be true for some firms but is an unreasonable assumption overall for reasons detailed in the competition section above. Among those factors, Nashville is home to the region’s courts, state and local government offices, and many influential existing businesses. For some significant portion of businesses interested in Nashville, MTC will offer a Nashville/Davidson County *alternative* to existing office space in the CBD and elsewhere because of its proximity to Downtown and the unique setting.

On the other hand, Nashville has recently lost a number of major businesses to surrounding counties. Williamson County in particular is attracting many of the area’s highest profile new business relocations, several of whom relocated from Davidson County to Williamson County. MTC is targeted to compete in a different competitive market, one that Nashville is often currently losing. The likelihood is MTC will generate a net positive effect on Nashville area employment because of its unique nature, but that some MTC employment will represent the results of a zero sum competition with existing Nashville office space.

We assume that one half of the jobs located in MTC would have otherwise located in Davidson County.⁴ When the office complex is fully completed, MTC is expected to produce over 21,000 new jobs in Davidson County. Table 9 summarizes our findings for new jobs created from the office complex.

TABLE 9
Net New Employment in Davidson County – Office Complex

Davidson County	50% Built Out	75% Built Out	100% Built Out
Direct	8,437	11,306	13,500
Indirect and Multiplier	4,981	6,675	7,970
<i>Total</i>	<i>13,419</i>	<i>17,981</i>	<i>21,470</i>

⁴ See Dye and Merriman (2000) for an example of academic research indicating that commercial and other economic activity might shift between places within an area.

Retail

Retail space is expected to total 300,000 square feet by the end of Phase III, and 600,000 square feet at project completion. One goal of the retail/restaurant space is to fulfill the promise of MTC as a mixed-use urban center where tenants and residents can live, work, and shop in the same community. The planned high-end shopping and dining should, however, generate some activity from existing Davidson County residents and therefore compete with existing Nashville establishments. We estimate that approximately 540 employees will be directly employed by the retail sector at the end of Phase III, with 1,080 by project completion. As with the office space, we assume that only one half of those jobs will be net additions to Davidson County. After taking into account indirect and multiplier effects, we estimate that at full capacity, the retail operations will generate approximately 724 new ongoing positions in Davidson County. See Table 10.

TABLE 10
Net New Employment in Davidson County – Retail

	50% Built Out	75% Built Out	100% Built Out
Direct	270	518	540
Indirect and Multiplier	92	177	184
<i>Total</i>	<i>362</i>	<i>694</i>	<i>724</i>

Hotel

MTC developers plan to offer a full service hotel with six hundred beds. The first section of the hotel is scheduled to come online in 2014 and will employ approximately 240 workers. The second section, planned for 2024, is predicted to add a similar number of workers, for a total of 480 hotel employees at project completion. The competition for hotel guests in the Nashville area is intense, although we expect that the hotel will have a substantial advantage in servicing the MTC directly, rather than Nashville more generally. Accordingly, we estimate that one half of the economic activity of the hotel will be new to Davidson County. We estimate that there will be approximately 159 and 318 net new jobs from the hotel activity upon completion of the Phases III and V, respectively. See Table 11.

TABLE 11
Net New Employment in Davidson County – Hotel

	50% Built Out	75% Built Out	100% Built Out
Direct	120	240	240
Indirect and Multiplier	39	78	78
<i>Total</i>	<i>159</i>	<i>318</i>	<i>318</i>

Estimated Income Impacts from Operations

Earnings are created directly from wages paid to employees working at the MTC as well as indirectly (see Figure 12). When MTC employers make expenditures on goods and services within the County, this creates more income indirectly for owners and employees of the vendors. Further, incomes are created by multiplier effects. We estimate the total income impacts separately for the office, retail, and hotel operations, based on our employment estimates and Davidson County wages by industry, and then adjust the totals for regional effects and multiplier effects occurring within Davidson County.

We estimate total earnings from ongoing operations of the office, retail and hotel to be \$600 million and nearly \$1 billion at the end of Phase III and Phase V, respectively, an annual growth rate of 6.6 percent. Table 12 summarizes these findings. To put these numbers in perspective, \$600 million represents 2.23 percent of total Davidson County personal income in 2007. We estimate MTC earnings to grow 6.6 percent based on the assumed expansion in MTC. This rate is somewhat faster than the annual personal income in Davidson County, which has grown 5.3 percent since 1999.

FIGURE 12
Earnings from Operations Davidson County

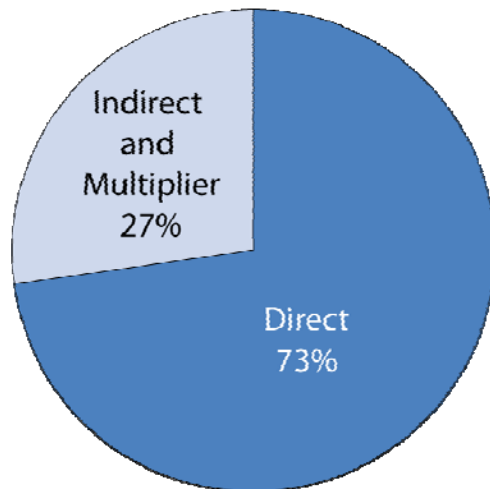


TABLE 12
Estimated Earnings from Operations in Davidson County (2009 Dollars)

	50% Built Out	75% Built Out	100% Built Out
<i>Direct Effects</i>			
Office	439,147,058	588,457,058	702,635,293
Retail	9,106,676	17,454,463	18,213,353
Hotel	2,946,144	5,892,287	5,892,287
Subtotal	451,199,878	611,803,809	726,740,934
<i>Indirect Effects</i>			
Office	161,562,203	216,493,352	258,499,524
Retail	4,462,727	8,553,560	8,925,454
Hotel	1,247,250	2,494,500	2,494,500
Subtotal	167,272,179	227,541,411	269,919,478
Total	618,472,058	839,345,220	996,660,411

Sales and Property Tax Revenues

Construction and development of MTC will benefit the public sector of Davidson County primarily through increased sales tax revenue. We estimate the construction activity will generate a total of \$13,866,721 million and \$24,523,474 million in local sales tax revenue at the end of Phase III and Phase V, respectively or approximately \$1,200,000 in annual revenue. These estimates are drawn primarily from two sources – construction material costs and expenditure of construction wages on sales taxable commodities.

To estimate sales taxes from construction earnings, we assume that one half of after tax income is spent on sales taxable items. Further, we assume that 62.3 percent of the earnings are spent in Davidson County. We make two adjustments to the gross cost of materials: (1) the single article cap of \$1,600 and (2) a 25 noncompliance rate on the use tax for materials purchased outside Davidson County.⁵ Table 13 summarizes these results for the construction phase of the project.

⁵ See http://dor.wa.gov/docs/reports/compliance_study/compliance_study_2008.pdf for a study of use tax non-compliance in Washington State.

TABLE 13
Cumulative Local Sales Tax Revenue Generated During MTC Construction (2009 Dollars)

Local Sales Tax Revenue	50% Built Out	75% Built Out	100% Built Out
Construction Materials	8,405,793	12,216,118	14,867,166
Worker Spending	5,460,928	7,930,841	9,656,308
<i>Total</i>	<i>13,866,721</i>	<i>20,146,959</i>	<i>24,523,474</i>

MTC will also generate local sales tax and property tax revenues from ongoing operations. It is important to distinguish this tax revenue from that generated from MTC construction activities because this permanent revenue source is the appropriate funding source for County obligations such as schools, police and fire protection, and road maintenance. Construction related revenues more appropriately fund one time infrastructure projects such as extending utilities and initial costs of a new school, although we understand that the developer has offered to pay for the new school.

MTC employees will spend their wages on a variety of taxable and non-taxable goods and services located within and without Davidson County. Based on analysis of the Consumer Expenditure Survey, we estimate that approximately half of MTC workers' after-tax disposable income is spent on items subject to sales tax, though as discussed previously, the earnings estimate assumes that one half of this income is simply shifted to MTC businesses from other parts of Davidson County. In addition to spending by MTC employees, the businesses in the MTC will make purchases of sales taxable items. For both groups we estimate only local sales taxes using the current Davidson County rate of 2.25 percent. We estimate the total local sales tax revenue from ongoing operations will be \$5.6 million by the end Phase III and \$9 million at completion of the entire project.

We calculate property tax revenue for the residential, commercial and tangible personal property in MTC. For the residential portion, we assume that housing will be priced at construction cost plus the cost of land estimated at mean per unit values in Davidson County. Per the developer's projections, we assume 40 percent of the residential units will be leased and 60 percent of the residential units will be sold, applying a 40 percent and 25 percent assessment ratio, respectively. Commercial real estate is valued at construction cost (hard plus soft costs) plus land values estimated based on a per square foot estimate of current Davidson County property tax assessments. Finally, tangible personal property is estimated based on per square foot industry averages depreciated using a blended rate assuming an eight year class life. For all asset categories, we use the Nashville Urban Services District rate (currently \$4.69 per \$100) to calculate property tax revenues. We assume that the 900 acres of green space is

subsumed in other values and therefore given no value here; therefore, our estimates are for the developed property. Table 14 summarizes these results.

TABLE 14
Annual Local Sales Tax and Property Tax Revenue from MTC Operations (2009 Dollars)

Category	50% Built Out	75% Built Out	100% Built Out
Local Sales Tax Revenue	5,558,983	7,554,107	8,969,944
<i>Property Tax Revenue</i>			
Residential Property	5,652,267	8,435,584	10,738,701
Commercial Property	21,310,422	29,540,434	34,741,644
Tangible Personal Property	781,180	1,136,072	1,394,365
<i>Total Property Tax Revenue</i>	<i>27,743,870</i>	<i>39,112,090</i>	<i>46,874,710</i>
<i>Total Sales Tax and Property Tax Revenue</i>	<i>33,302,853</i>	<i>46,666,197</i>	<i>55,844,654</i>

VI. CAPITAL AND OPERATIONAL COSTS OF MAY TOWN CENTER

Overview

This portion of the fiscal impact analysis concentrates on assessing the estimated and projected costs - both capital and on-going operational costs-of infrastructure and services that must be provided for the development and operation of May Town Center (MTC), both on-site and off-site including:

- a) Roads and bridges – with estimates for each proposed bridge location,
- b) Parks and greenways,
- c) Police station,
- d) Fire station,
- e) School and schooling for estimated number of children,
- f) Transit,
- g) Waste management services, and
- h) Sewer, water, and other utilities.

Each item is discussed below. It is important to note that the expenditures estimated by CBER are gross numbers and not net of revenues. It would be expected that certain expenditure categories such as waste removal would be revenue neutral or, stated differently, that enough revenue would be generated from the service to pay for the cost. Further, it is assumed in the study that the traffic capacities of the proposed bridge construction, highway construction, and highway improvements are adequate to support the traffic that will be generated by the MTC project without excessive delays. A traffic impact study was prepared by Wilbur Smith Associates in July of 2008⁶. A review of the Wilbur Smith study was recently released by RPM Transportation Consultants, LLC, so no attempt is made to address traffic issues here⁷.

Summary Data

Construction costs for a school located in the MTC area, police station, and fire station are provided in the study. The MTC school, assumed to be an elementary school, is estimated to cost \$34.9 million in 2009. The police station could cost \$2.1 million in 2008, and the fire station could cost \$841,000 in 2008. In the analysis, expenditures to provide public services to the MTC and its residents are given for three project phases: 50 percent build out (Phase III), 75 percent build out (Phase IV), and 100 percent build out (Phase V), expected to be completed in 2023, 2027, and 2031, respectively (see Table 14 above). Assuming that the metro Nashville/Davidson County Government assumed ownership of the newly constructed and improved roadways, the expected annual highway maintenance cost would be at least \$40,000 annually. The maintenance and operation expenses incurred by the Nashville/Davidson Metropolitan government for all services delivered would be \$16.607 million with a 50 percent build out, \$24.117 million with a 75 percent build out, and \$29.819 million in a 100 percent build out.

Roadway and Bridge Maintenance

Under Phase III in the Wilbur Smith and Associates study, *Traffic Impact Study MTC*, Cockrill Bend Boulevard and Centennial Boulevard will be widened from two to five lanes and realigned to cross the Cumberland River with a new bridge. To gain access to Cockrill Bend Boulevard, a five lane 1,000 foot access road will be constructed up to the new bridge. It is assumed in this study that the access road will also have five lanes. It is the understanding of CBER that, if the Metropolitan government assumes ownership of roads and the bridge over the Cumberland River, only the bridge and the access road to the bridge will have their

⁶ Wilbur Smith Associates, *Traffic Impact Study May Town Center*, July 2008.

⁷ RPM Transportation Consultants, *May Town Center Traffic Impact Study Review*, May 14, 2009.

ownership transferred. The Metropolitan government already owns Cockrill Bend and Centennial Boulevards, but a section of both roads will have increased lanes. The local roads in the MTC will continue to be the property of Bells Bend Partners.

The cost to maintain the roads will be the repaving and general maintenance work as needed and possible minor maintenance to the bridge. The Tennessee Department of Transportation (TDOT) provided various estimates for resurfacing the roads in question⁸. These estimates are in 2009 dollars and summarized in Table 15.

TABLE 15
Highway Paving Cost Data (2009 Dollars)

Road Type	Cost per Lane Mile
Four lane high speed facility	\$100,000
Thin lift asphalt	30,000
Micro-surface	24,000

Use of \$100,000 per linear mile seems appropriate in the MTC development as maintenance might also require some guard rail upgrades and shoulder work in addition to paving. TDOT recommend use of this figure. The thin lift and micro-surface alternative involves only paving. Total lane miles resulting from construction and highway upgrades around the bridge total five lane miles.⁹ Assuming that the metro Nashville/Davidson County Government assumed ownership of the newly constructed and improved roadways, the maintenance cost on a 10 to 12 year cycle is \$500,000 per cycle. Annual average expenditures for road maintenance would be between \$40,000 and \$50,000.

Bridge repair and maintenance costs are difficult to forecast. Local governments generally use Federal bridge replacement money for repairs, rehabilitation or replacement of major structures; and the new bridge over the Cumberland River should fit into this category. If the Nashville/Davidson County government accepts responsibility for the new bridge, there should be no bridge repair maintenance expense for at least 25 years after the structure is completed. Generally, major repair or rehabilitation is not required for fifty years. The funding

⁸ A TDOT Project Manager provided these data to CBER on May 13, 2009.

⁹ The distance of the access road to the bridge is 1,000 feet, and the upgraded sections of Cockrill Bend and Centennial Boulevards is 700 feet.

is typically 80 percent Federal and 20 percent local or state match, but this could change with future transportation bills.

Non-highway Expenditure Estimates

At the MTC, Phase III of the project will be completed in 2023. At this time there will be 5.0 million square feet of office space, 300,000 square feet of retail floor space, and 4,000 residential units. Phase III operation and maintenance estimates are based on these parameters. Table 16 shows metropolitan expenditures to operate and maintain MTC by phase: 50 percent (Phase III), 75 percent (Phase IV), and 100 percent (Phase V).

For the year 2023, CBER estimates that, excluding the Cumberland River Bridge and access road, the Nashville/Davidson County region will require annual expenditure of \$16.6 million (2009 dollars) for operation and maintenance of the MTC development. Built into this number is the assumption that Nashville/Davidson government will obtain ownership and develop the green space in the same fashion as is done in the remainder of the county.¹⁰ The expenditures by sector are shown in Table 16. Education accounts for about 44 percent of the operation cost which includes the cost of instruction, non teaching employees and non-labor recurrent costs. Following education, are water, sewer and utilities; police; fire, waste removal and disposal; transit, and parks. Phase III expenditures by sectors are shown graphically in Figure 13.

In Phase IV, the number of housing units increases from 4,000 to 6,250, and employment in the office and retail complexes rises (See Table 4). The Nashville Davidson County Phase IV cost to maintain services delivered to the MTC is \$24.117 million. The cost attributable to the school rises slightly to 47 percent of total expenditures.

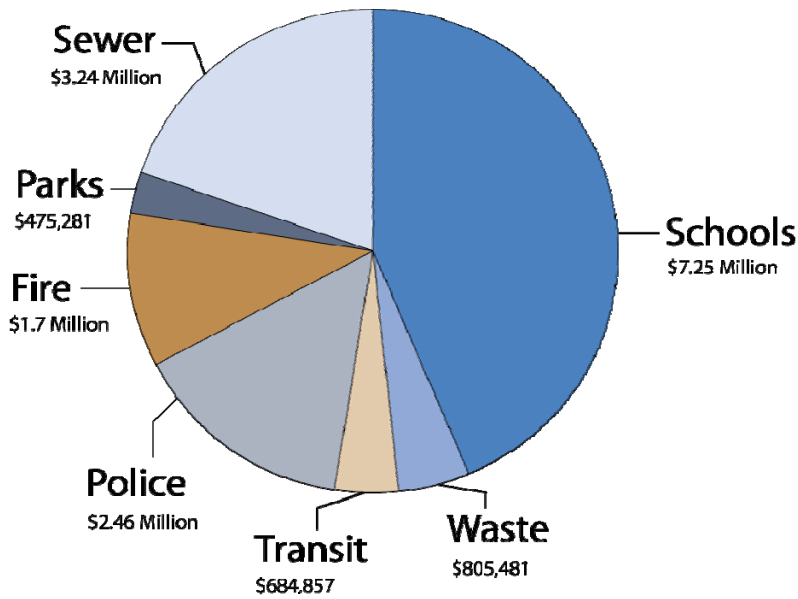
In Phase V, housing units rise to 8,000, while the number of projected office and retail workers increases to 8,000 and 540 respectively. The cost to deliver services for a fully developed MTC is estimated to be \$29.819 million annually.

¹⁰ See the discussion of perks that follows.

TABLE 16
Nashville/Davidson County May Town Annual Operation and Maintenance Costs

Sectors	50% Built Out	75% Built Out	100% Built Out
	Phases I – III	Phase IV	Phase V
Schooling	\$7,246	\$11,355	\$14,535
Sewer, water, and other utilities	3,240	4,382	5,238
Police	2,458	3,324	3,974
Fire	1,697	2,295	2,744
Waste Removal and disposal	805	1,191	1,451
Transit	684	926	1,107
Parks	475	642	768
<i>Total</i>	<i>\$16,607</i>	<i>24,117</i>	<i>29,819</i>

FIGURE 13
Non-Highway Phase III Expenditures by Sector



Methodology

The general methodology used to estimate MTC infrastructure operation and maintenance cost is to first relate sector budget data found in the *Metropolitan Nashville/Davidson County FY 2009 Operating Budget* to a scalar such as total population in that region. For example, MTC police protection expenditures are estimated by applying Nashville/Davidson County police protection expenditures per capita to MTC population. MTC budget estimates are adjusted due to the initial high levels of MTC employment relative to population. It is expected that expenditures in each phase will not be exactly proportional from one to the other as employment in phase III, for example, develops at a much higher rate than the expected growth in population. If the employment to population ratio in the MTC is higher than found in the greater metropolitan area, then using this ratio to estimate local service needs in the MTC will underestimate sector budget expenditures because of the need also to deliver services for business use. To account for this phenomenon, CBER adjusts the cost in each phase and sector by the ratio of the employment to population ratio in MTC relative to the employment to population ratio in Nashville/Davidson County. The computed adjustment factor is 1.35 in phase III, 1.17 in phase IVI, and 1.09 in phase V.

Schooling

The cost of providing education for students residing in MTC is dependent on the number of students which in turn is dependent on the number of residential units. As noted, the assumption in the study is that 4,000 units will be available for occupancy in 2023, but that these units will have an occupancy rate of 80 percent¹¹. Next, it is assumed that the persons per household in the MTC will be the Davidson County average, which was 2.24 persons per household in 2008¹².

Using data from the Census of Population and the Tennessee Department of Education, CBER determined that 11.5 percent of the population in Davidson County attends public schools. This implies that the 823 public school students can be expected to live in MTC at the end of Phase III. Based on district averages, the student-teacher ratio (teacherportal.com) in Nashville/Davidson County stands at 14.7 which results in a need for 56 new teachers. The support staff for 56 new teachers totals at least 44 additional staff. From the budget document

¹¹ The 80 percent occupancy rate reflects the assumption that some units will not be occupied or that some owners will move from another location inside Davidson County.

¹² From the U.S. Census Bureau, the population of Davidson County, Tennessee population was estimated to be 626,144 in 2008. 2007 housing units were estimate to be 278,837 in 2007, resulting in persons per household being 2.24.

referenced above, the average teacher salary in the 2007/2008 school year (including benefits) is \$61,657.¹³ The average salary for the support staff is assumed to equal the average salary in educational services in Davidson County which in 2009 dollars would be \$53,156. Further, the non-labor operating expenditures are assumed to be 25 percent of the total of instruction and support staff. The total cost to operate the school is thus \$7.2 million per year (2009) during Phase III.

We have not accounted for effects on any federal and state transfers in our calculations. Furthermore, state transfers have not been adjusted for the effects from the Basic Education Program (BEP). Specifically, within the BEP II formula, Davidson County will have additional expenditure need resulting from more students, but it will have higher fiscal capacity from the larger tax bases. The net effect Davidson County is not obvious.

Police

The annual police expenditures associated with the MTC are calculated as a product of police expenditures per capita in Nashville/Davidson County and population in the complex. Police expenditures per capita are estimated to be \$249 in 2009. Given full police services to the Center, the annual expenditure to the metropolitan area would be \$2.458 million after adjustments for differences in the employment to population ratios.

Sewer and Water

The estimated expenditures to maintain and operate the utilities supplied to the MTC are estimated as was done for police protection described above. Annual per capita expenditures for sewer and water services for Nashville/Davidson County are estimated to be \$328 in 2009. Applying this factor to total MTC population yields an annual expenditure of \$3.2 million after adjusting for differences in the employment to population ratios.

Solid Waste

To estimate the solid waste expenditures associated with the MTC, CBER begins with estimates of waste (pounds per person) generated by residents and employees. The data for residential, retail, and schools were taken from a year 2000 study in New York City.¹⁴ The data, pounds per person per week, for residential, retail, and schools are, respectively, 17, 79, and 4. These numbers are then applied to the estimated number of retail and office employees,

¹³ According the Bureau of Labor Statistics, 2008 based estimates are equal to 2009 based estimates.

¹⁴ City of New York, *Hunter's Point South Rezoning and Related Actions DEIS*, Chapter 4, Table 14-2. Referenced May 12, 2009.

residential occupants, and students and teachers. The pound per week data are converted to an annual number by type of service, and expenditures are estimated as a product of the cost per pound of waste collection and disposal¹⁵ and the number of pounds per type of service. The annual maintenance and operation expenditures are estimated to be \$ 0.805 million.

Transit

Transit expenditures associated with the MTC are calculated as the product of the Nashville/Davidson County metro expenditures per capita and population at the MTC.¹⁶ Nashville/Davidson County transit expenditures per capita are estimated to be \$70. Annual transit expenditures associated with operation of the MTC are estimated to be \$0.685 million after adjustment for differences in the employment to population ratios.

Fire

Fire expenditures are calculated as a product of fire expenditures per capita in Nashville/Davidson County and population in the MTC. Fire expenditures per capita are estimated to be \$172. Providing fire service to the MTC is estimated to have an annual cost of \$1.697 million to the metropolitan area after adjusting the data for differences in the employment to population ratios.

Parks

The owners of the MTC have revised their plans to preserve nearly 1,000 acres as green space, with 200 acres being used as a working farm. It is unclear as to whether the city will take possession of the property or if it will remain the property of Bells Bend Partners. If the city does take over the property, the cost to Nashville/Davidson County to maintain this property depends completely on how the city plans to use the property. If the 800 acres not used for farming are left in place and only the grass is mowed or cut for hay, then the city will incur very little or possibly no cost. However, if the property is developed in the same fashion as some other facilities across Davidson County (which could include construction of a golf course), then it is reasonable to assume that the cost per capita in the metro area would apply to the MTC. Annual park expenditures per capita in the Nashville/Davidson County area are \$48. Assuming that the property is developed, the cost to maintain the green space at MTC is estimated to be

¹⁵ Cost per pound of waste collection and disposal are found in the *Metropolitan Nashville/Davidson County FY 2009 Operating Budget*

¹⁶ Transit expenditures are the cost of bus service, including overhead, and will serve MTC with the same frequency as the Nashville Davidson County area.

\$0.475 million annually after adjusting the data for differences in the employment to population ratios.

Capital Expenditures

CBER examined construction costs for school, police, and fire protection.

School Construction Costs

School construction costs are based on site purchase (2 percent), site preparation (9 percent), equipment and furnishing (14 percent), construction (67 percent), and other items (8 percent). In evaluating construction costs, the variable can either be the cost per square foot or the cost per student. Cost can also vary by the type of school. These data are shown in Table 17.¹⁷

TABLE 17
School Construction Costs

Variable	Elementary	Middle School	High School
Cost per square foot	\$188	\$211	\$175
Cost per student	\$21,176	\$28,999	\$23,875
Square foot per student	134	158	110

The school size is assumed equal to the number of students living in MTC once Phase V has been completed (1,652 children) though it is recognized that some students would attend school outside MTC (such as high school students) and some students attending the school would come from outside MTC. Using cost per student and further assuming that the school located in MTC will be a grammar school, construction costs will be \$34.9 million in 2009. The number of school children in residing at the MTC complex is estimated to be 823 in Phase III and 1,291 in phase IV.

Police Station

It is difficult to obtain costs for a MTC police station given the variety of structures that could be constructed. However, Reed Construction does give some guidance on this matter.¹⁸ Reed gives the U.S. average values for a variety of parameters, suggesting that an “average”

¹⁷ American School University Magazine, www.asumag.com referenced May 18, 2009.

¹⁸ Reed Construction, www.readconstructiondata.com, referenced May 18, 2009

type facility would cost \$2,126,130 to construct. The building would be sized at 11,000 square feet.

TABLE 18
Police Station Construction Data

Parameters	U.S. Average Values
Stories:	2
Story height in linear feet	12
Floor area in square feet	11,000
Labor type	Union
Basement included	No
Base year for data	2008
Cost per square foot	\$193.28
Building cost	\$2,126,130

The number of police officers per capita is published by the International Association of Chiefs of Police in *Research Center Directorate Perspectives*. For a small town the average number of officers is estimated to be 2.5 per thousand residents. For MTC the number of officers might be 18 assuming that MTC follows the national average. The cost to equip the MTC police force will depend on their function. Included in Table 19 is the cost of police cruisers which might be needed for certain types of MTC police activity. But, if the metro police will be the first responders, then the more expensive cruisers might not be needed in the facility.

TABLE 19
Estimated Cost of a Police Vehicle

Base	\$21,853
Roof mounted lights	1,485
Video camera system	4,614
Radio equipment	4,314
Decals	100
Stop stick device	250
Traffic control equipment	103
<i>Total</i>	<i>\$32,701</i>

Reed Construction also provides the U.S. average cost of fire station construction. The station referenced is a three bay structure consistent with a suburban setting. These data are shown in Table 20.¹⁹

TABLE 20
U.S. Average Fire Station Construction Data

Stories	1
Story height in linear feet	14
Floor area in square feet	6,000
Labor type	Union
Basement included	No
Base year for data	2008
Cost per square foot	\$140.17
Building cost	\$841,020

VII. SUMMARY OF PUBLIC SECTOR IMPACT ON DAVIDSON COUNTY

The net public sector impact of MTC on Davidson County should be positive based on the set of services that we examine. The major infrastructure improvements necessitated by MTC are a school, fire station and police station at an estimated total cost of \$38 million. These estimates do not include any capital costs associated with road construction. In Section V above, we estimated tax revenues from construction activities at completion total \$24.5 million. See Table 13.

TABLE 21
Estimated Non-Recurring Shortfall (Thousands, 2009 Dollars)

Non-recurring Tax Revenues from Construction Activities	24,523
Major infrastructure expenditures	37,867
Shortfall	-13,344

¹⁹ Reed Construction, www.readconstructiondata.com, referenced may 18, 2009

The predicted shortfall of \$13.3 million can be offset by additional tax revenues from ongoing operations. By the end of Phase III, we estimate annual sales and property tax revenues from ongoing operations at MTC will total \$33.3 million, and annual expenditures on those county services identified in Section 6 will total \$16.6 million, giving Davidson County a \$16.7 surplus midway through the project.²⁰ We also estimate that at project’s completion, annual revenues will total \$55.8 million and annual operating expenses on the county services that we consider will total \$29.8 million. Additional costs could be incurred for services that we have not addressed here and for bridge and road construction. These costs would reduce any net revenues from the MTC. The main reason for a net operating surplus for the public sector is that the expected increases in business property and taxable sales are large relative to the population increase at MTC. The costs of new residents, and particularly school students, are much more expensive than those associated with the additional business. The capital costs are onetime expenses. We summarize these finding below in Table 22.

TABLE 22
Ongoing Annual Cost of County Services versus Tax Revenues (Thousands, 2009 Dollars)

	50% Built Out	75% Built Out	100% Built Out
Total Annual Sales and Property Tax Revenues	33,303	46,666	55,845
Annual Cost of County Services	16,607	24,117	29,819
Net New Tax Revenue	16,696	\$22,549	\$26,026

The actual net impact on Davidson County will depend on a variety of factors including the success of the project and the relative pace of build-out, as well as our estimates of the impact of MTC on existing or future business activity in Nashville-Davidson County. However, based on the services that we consider, the estimated surplus suggests that the project is unlikely to be a fiscal drain on Davidson County, unless the office and retail components of the project are a significant failure but the residential housing components are very successful. The extent of operating surplus is also contingent on no tax concessions being granted. At completion, the projected annual surplus of \$26 million represents about 1.7 percent of Davidson County’s proposed 2010 budget of about \$1.5 billion. A tax revenue surplus from business activity is often seen as compensation for additional congestion or other effects of the business community, to the extent that they exist. We have made no effort to quantify these other impacts.

²⁰ To be conservative, we did not estimate separately billed revenues for services such as water and sewer and garbage removal that will partially or fully offset Davidson County’s cost of providing such service.

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