

Mixed Use District Transit Oriented Development Guidelines For Germantown, Tennessee



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1.0 Introduction

1.1 Historical Value to Germantown

When the Memphis-Charleston Railroad was constructed in 1852 the route went through Germantown. In 1858 the original train depot was constructed in the city of Germantown. The depot was constructed as an elevated structure to allow local residents to back their wagons up to the loading dock. The original depot burned in 1948 and was rebuilt to its original condition the same year using salvageable timbers. The depot proved to be a multi-use facility. The depot was used as passenger station between Memphis and Williston, Tennessee, a shipping center, a floral distribution center, and as a community assembly area as well as the local telegraph office. One of the frequent users of the passenger service during the 1950s was Ms. Elizabeth Hancock. Ms. Hancock, a schoolteacher, would take her student on special event trips to expand their educational experiences (Hall 2003).

The Southern Railway System ceased to carry express shipments on passenger trains in the 1960s, and filed a petition with the Tennessee Public Services Commission to close the Germantown Depot. Notice was sent on May 13, 1968 to the City of Germantown. The Board of Mayor and Aldermen did not object and approved a motion to rent the depot building if closed (Pouncey 2006).

Today the Germantown Depot is owned by the City and the surrounding area is included as part of the City's park system.

Figure 1 – In this 1959, Ms. Elizabeth Hancock and her students are boarding the train at the Germantown depot for an educational trip.



Image: Hall, 2003

Figure 2 – People waiting at the Germantown Depot to board a special commuter train bound for luka, Mississippi in the early 1970s.



Image: Hall, 2003

1.2 Regional Rail Plan

The Regional Transit Plan (1997) suggests a number of benefits to the City of Germantown from the plan. The benefits are supportive in the pursuit of Mixed Use Development Transit Oriented Development for the City of Germantown. Benefits from the Regional Transit Plan include alternative routes, promotion of light rail ridership, connection of north, east, and south parts of Shelby County to downtown Memphis, and support of a rail stop in Germantown.

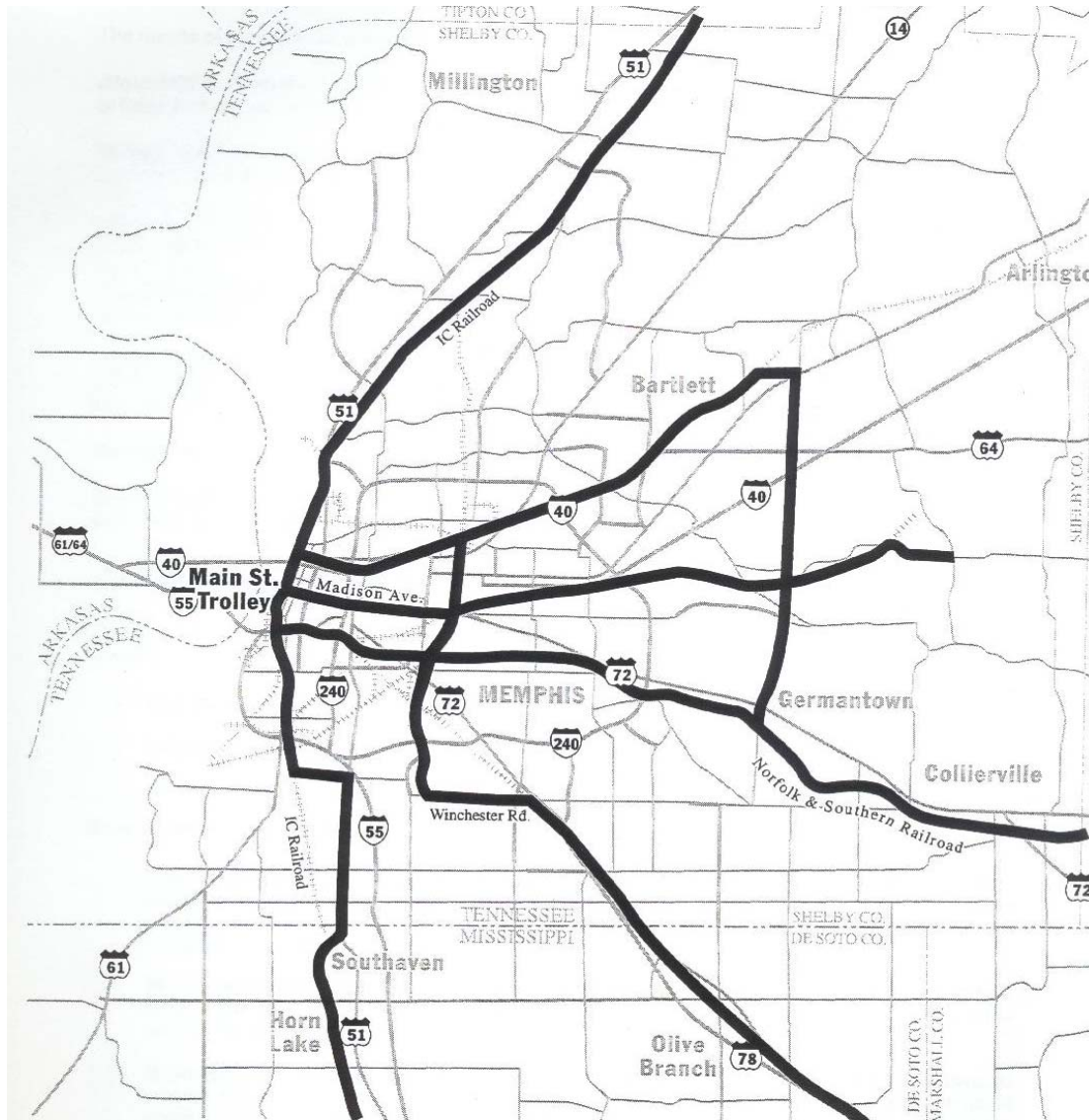


Figure 3 – This 1997 image from the Memphis Area Transit Authority shows the possible routes of a light rail system for Shelby County.

1.3 Purpose

The goal of this document is to encourage mixed-use development at future transit stops that will emphasize sustainability and connectivity. To help in the achievement of this goal, guidelines are developed for mixed-use development along the proposed regional rail route along the East Memphis, Germantown, and Collierville route. A mixed use district transit oriented development in Germantown will be illustrated with an analysis and conceptual design of an actual site in a nodal location.

Examples of the desired outcome the proposed guidelines are the light rail systems in Atlanta, Georgia; Charlotte, North Carolina; Denver, Colorado; Orlando, Florida; and Central Puget Sound, Washington (Hendricks, 2002). In Atlanta the MARTA rail system has at every transit station some kind development located at or around the station. Whether it is residential, commercial, office, medical, or mixed use, each development was accessible to everyone by train, thus reducing the need for surface parking. The reduction in surfacing parking assists in the reduction of automobile trips, which reduces pollution. People enter the trains carrying bags from retail centers around a station and exit at the stations with residential developments. People also ride the train from the downtown station to the stations located in the suburban area on the outskirts of the city. Charlotte has become an example of an automobile oriented community moving toward transit oriented development when they began a massive public education campaign in 1998 to endorse and adopt their 2025 Integrated Transit/Land Use Plan that provided the framework for growth and development along five major corridors. Denver, through the Regional Transportation District, has chosen to be proactive in the management of transportation problems that arise from being a named one of the country's most desired places to live. They have done this by cooperative projects between transit and highway agencies that resulted in development around transit stations. Orlando has taken the multimodal approach through its policies to encourage walking bicycling, and public transit. They have planted the seed for a transit oriented community to grow. Central Puget Sound, the area around Seattle, has become the classic example of an area becoming more transit responsive. Through various levels of government, Central Puget Sound has completed numerous transit oriented development projects that show they are becoming more and more transit oriented.

1.4 Organization of the Report

This Report on the proposed mixed use district transit oriented development guidelines contains sections that will deal with various aspects of the development of guidelines. The sections will establish a set of guidelines by which the City of Germantown can use mixed-use as a strategy for growth in the central business district location. The following summary of each section offers insight into the composition of the final report is as follows.

The section on "What is transit oriented development?" provides a review of the national trend for development that uses TOD. The section on "Why mixed use district transit oriented development guidelines" will help to inform the reader on the intent and principles of the guidelines. The section on current regulations will look at the way property is currently developed in the City of Germantown. The section on "Transit oriented development guidelines" will examine the required changes to the existing ordinances that will make the proposed project achievable. The section on "A development proposal" will illustrate the outcome of a site developed under three separate criteria.

The written report contains illustrations and graphics that will enhance the text of the guidelines. Each section of the guidelines will have various images that best illustrate the desired intent.

2.0 State of the Community

2.1 Regional Location

Germantown is located in southeast Shelby County and contains 19.8 square miles or 12,720 acres of land. Germantown is one of six suburban municipalities of the City of Memphis and is part of the Memphis Metropolitan Statistical Area (MSA), which together with Crittenden County in Arkansas, DeSoto County in Mississippi, and Fayette, Shelby and Tipton Counties in Tennessee contains more than one million people. Germantown is bordered on the north and south by unincorporated Shelby County, on the east by the town of Collierville, and on the west by the City of Memphis. The Wolf River, a tributary of the Mississippi River, runs along the northern boundary of the City of Germantown. The Norfolk southern Rail Road runs in a southeastern direction (east to west) through the city (Figure 5). A part of the city known as Old Germantown, the City's historical district, is located in the western central portion of the city where the railroad intersects Germantown Road (see also Figure 37 below). The northeast section of the city contains several Laterals to the Wolf River constituting low areas located in the flood plain. Germantown is located 13.6 miles from the Memphis International Airport and 34.9 miles from downtown Memphis.

The city is now at its maximum area limit (19.8 square miles or 12,720 acres). When the Board of Mayor and Aldermen passed Ordinances 2000-10 to annex the property located south of Winchester Road, the City of Germantown incorporated the last of its reserve area. The primary land use in the city is residential.

Figure 4 – Historic monument at the Germantown Depot.

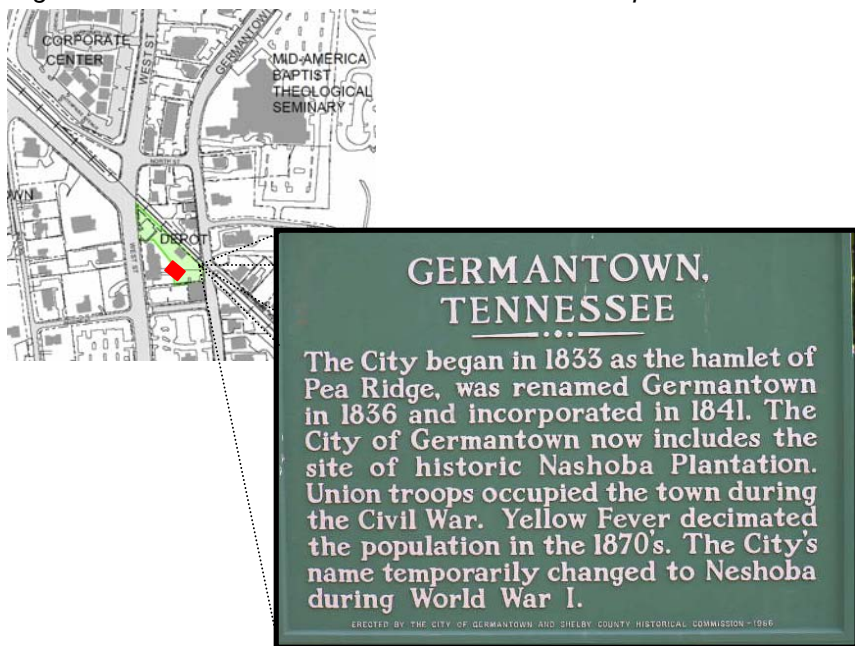


Image: by Author, 2007

Figure 5 – Vicinity map of Germantown and the Memphis MSA

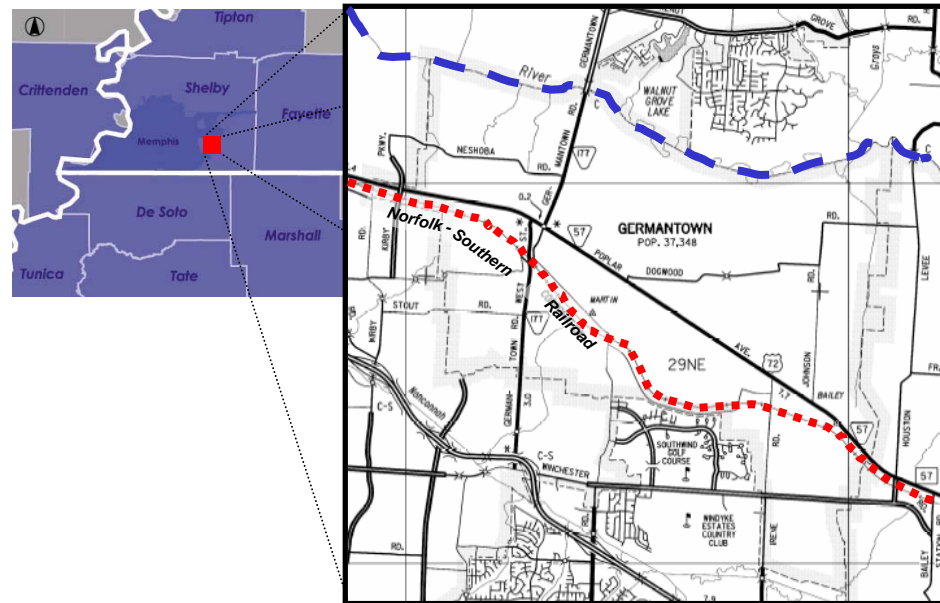


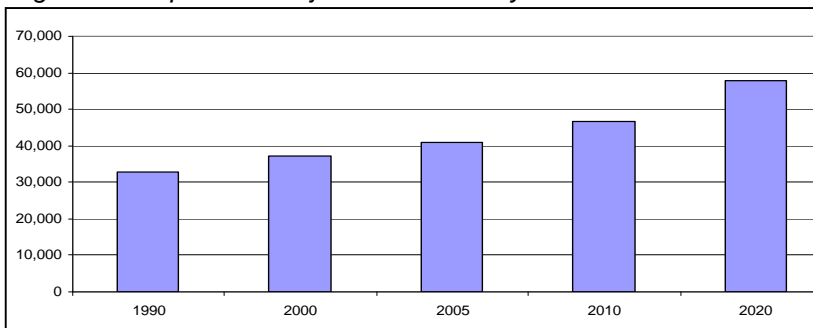
Image: MSA – Memphis Area Chamber of Commerce (www.memphischamber.com)
Highway Map – Tennessee Department of Transportation 2006

2.2 Anticipation of Demographic Change and Transition

The current population of Germantown is 40,977 people. The reason for the larger increase between 1990 and 2000 than between 2000 and 2005 can be attributed to the annexation referenced above. If current growth trends continue, Germantown can expect the population to grow by approximately 4,000 people by the year 2010 and 8,000 by 2020.

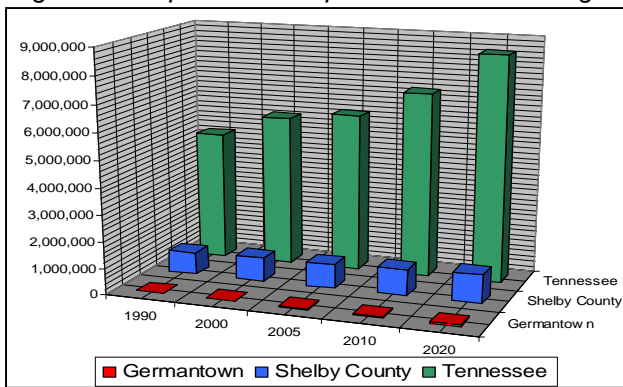
Housing in Germantown reflects the City's image of a bedroom community. Housing units consist of single family units, apartments, town homes, and condominiums. The total number of housing units will continue to increase. Through the year 2020 the housing market is projected to maintain an occupancy rate of 97% with an 86% owner occupancy rate. The vacancy rate will drop from 3.3% in 2000 to 2.6% in 2020. It should be noted that even though the vacancy rate will drop over the projected time period, the total number of vacant housing units will increase.

Figure 6 – Population Projection for the City of Germantown



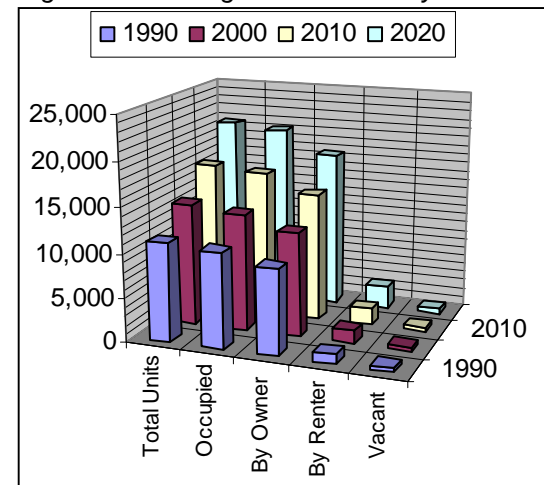
Source: 1990 & 2000 – US Census Bureau, 2005 – Germantown Special Census, 2010 & 2020 Estimates – Author

Figure 7 – Population Comparison to Surrounding Area



Source: 1990 & 2000 – US Census Bureau, 2005 – Germantown Special Census, 2010 & 2020 Estimates – Author

Figure 8– Housing Data for the City of Germantown



Source: 1990 & 2000 – US Census Bureau, 2005 – Germantown Special Census, 2010 & 2020 Estimates – Author

According to the Census Bureau (2007) the current average household size in the City of Germantown is 3.14. For the following it is assumed that the average household size will not change by 2020. The estimated population for 2020 is 57,962 people that will result in a demand of 18,459 housing units. The estimated housing units for 2020 is a total of 20,645 units resulting in a surplus of 2,186 units.

As can be seen in the graph (Figure 9), in 2010 and 2020 the majority of the population will be between the ages of 50 to 64. As this population begins to age and look for a reduction in yard work, or to simply downsize their housing as the result of their children leaving home, and seeking an alternative to the automobile dependant transportation and still desire walking accessibility, they become candidates to live in the higher density mixed use district surrounding a potential Light Rail Transit stop or station.

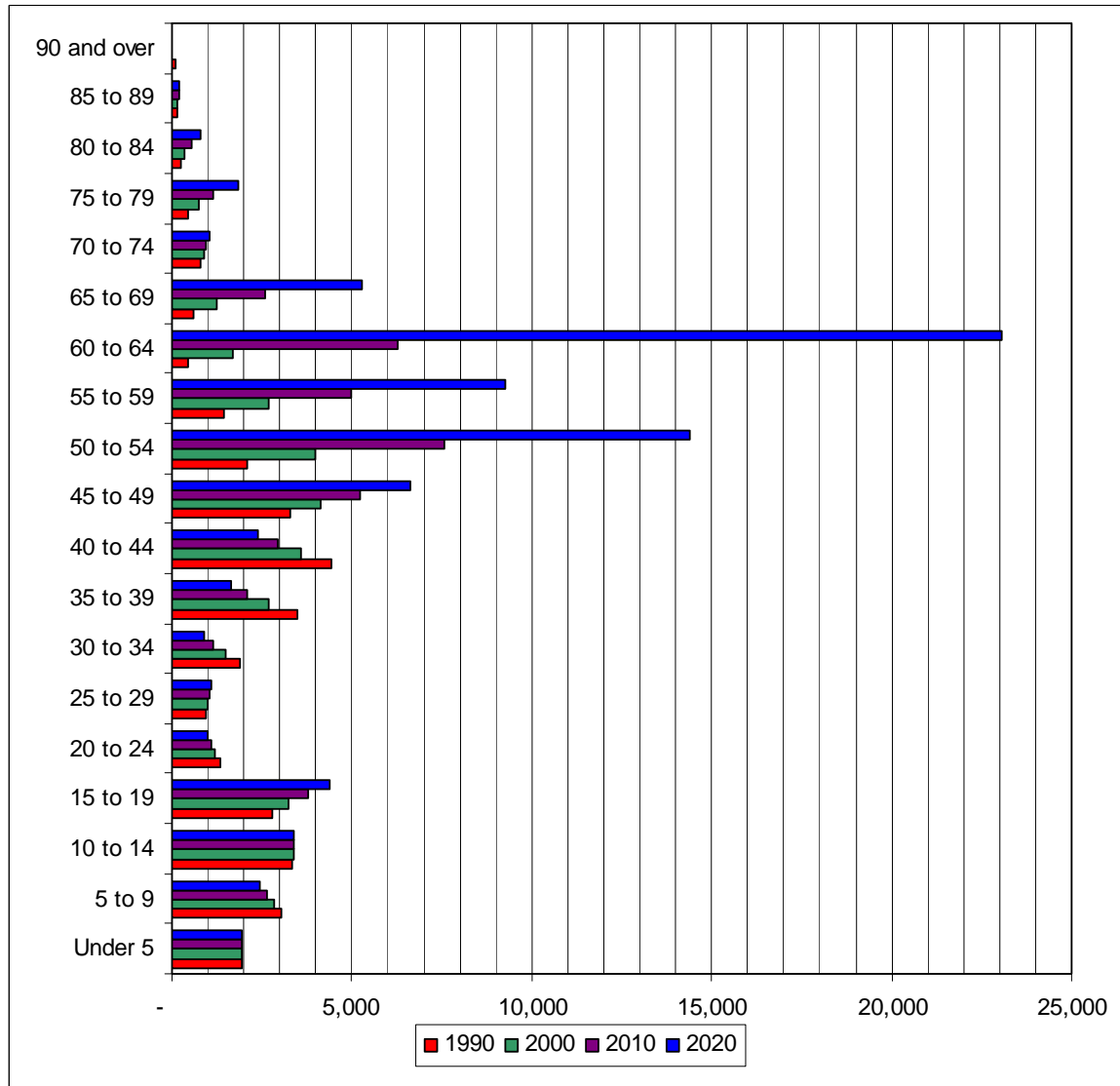


Figure 9 – Age Cohorts the Population of Germantown, Tennessee

Source: 1990 & 2000 – US Census Bureau, 2005 – Germantown Special Census, 2010 & 2020 Estimates – Author

3.0 Why Mixed Use District Transit Oriented Development Guidelines

3.1 State Growth Management

In order to assist the public and lawmakers understand, anticipate, and deal with the adverse effects of the uncontrolled growth, growth policy legislation was passed in the Tennessee General Assembly in 1998 to help make certain that a stronger economy does not come at the expense of communities, taxpayers and the environment. All counties in Tennessee and their related municipalities must now develop countywide growth plans under the direction of Public Chapter 1101 (TN Growth Plan 1998).

3.2 Smart Growth: Plans and Codes

The City of Germantown is currently undergoing a study by a consulting firm to produce a smart growth plan of the City (www.ci.germantown.tn.us, 2006). The focus area is centered around the existing central business district of Germantown with an emphasis on mixed-use developments that will allow office and commercial uses on the ground floor and residential uses on the second and third floors. The plan is intended to guide the City of Germantown by making the central business district of Germantown a viable and sustainable place to live and work.

The Smart Growth Plan that is being developed by the Lawrence Group for the City of Germantown will revolve around the SmartCode. The SmartCode, as developed by Andrés Duany, a founding member of new urbanism, encourages a market-driven alternative to conventional suburban development. “The SmartCode is a model integrated development code that incorporates Smart Growth and New Urbanism principles, Transect-based planning, environmental and zoning regulations, and regional, community and building-scaled design provisions.” (Duany 2006, pg. 2). A locally adapted SmartCode will provide the regulatory framework by which the City of Germantown will advance the implementation of the Smart Growth Plan.

Mixed Use Districts are promoted in the SmartCode that is being prepared for the City of Germantown. However the code has no provisions for Transit Oriented Development. The code does not contain language that would lead a potential developer to believe that a potential Light Rail Transit stop or station would be allowed since there is no reference to one in the allowable use tables for each of the Transect Zones.

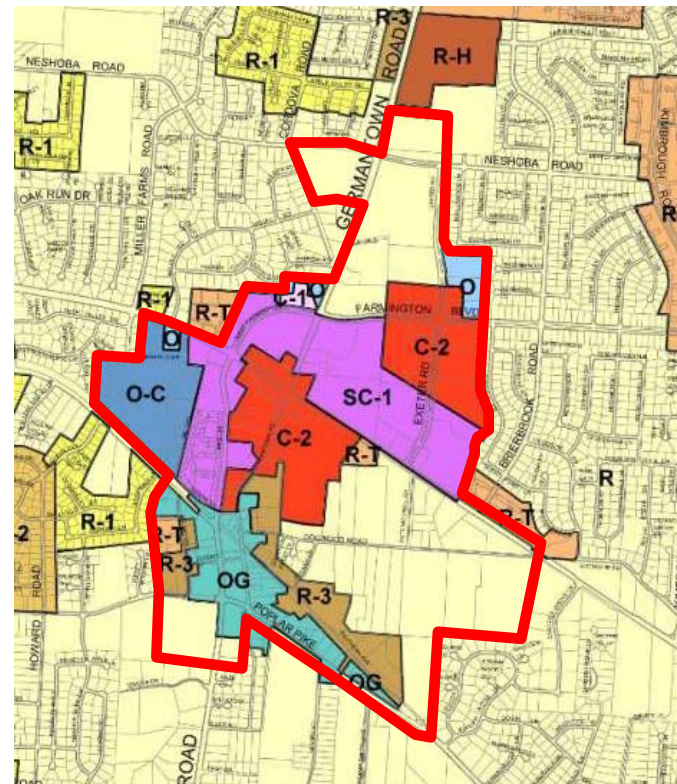


Figure 10 – This image from the Lawrence Group shows the focus area of the Germantown Smart Growth Plan.

3.3 Sustainable Growth

Definitions of sustainability and its role in land use planning poses a challenge between competing interests (Campbell, 1996). Campbell (1996) suggests that sustainability is a powerful tool for planning that must be viewed as a long term planning concept that has an incremental interactive approach as a tool to sustainable development.

The development of land is a partnership that consists of various shareholders (Hoch, 2000). The stakeholders include market players, landowners, developers, builders, financiers, businesspeople, and profit seekers. Transportation, housing, development planning, economic development, and urban design are all a function of land use and all are essential to planning. Environmental policy, growth management, and community development are helpful in establishing a standard planning baseline for a land use plan to be composed, adopted, and implemented that will benefit all of the stakeholders.

The Sustainable Germantown Plan was produced in 1997. The Sustainable Germantown Plan provides a set of principles that will guide the City's policies and programs in maintaining a balance between growth and environmental stewardship by safeguarding pure water and clean air for its citizens, preserving the natural environment, reducing solid and hazardous waste, and promoting a sustainable energy future without compromising the ability of future generations to meet their needs." (Boatwright 1997) Several of the objectives regarding the sustainability of Germantown still prove relevant to the current desires of the city's leaders and residents

The Urban Growth Boundary Plan City of Germantown – Fiscal Impact of Growth and Annexation was developed in 1999. The Urban Growth Boundary Plan was a feasibility study for the City of Germantown to determine how the annexation of the city's reserve area would impact the city. Public Chapter 1101 gave the City of Germantown the power to create a comprehensive growth policy plan for the annexation of the area. The plan report stated the objectives of maintaining a residential character, developing a public park, and the need for higher density housing (mix of townhouses and senior living units).

Transit oriented development is the mechanism by which the City of Germantown can encourage mixed development and create higher density housing that will encourage sustainability both economically and residentially in the Germantown Smart Growth area.

3.4 Sense of Place

"A well-defined place is more than a location or space - it has deep meaning and a distinct character - it has evolved over time and is anchored in the values, ideals and activities of the people who live there." (Srigley 2007, pg. 2)

Creating a sense of place is accomplished by understanding the relationship people have with the surrounding landscape, open space, and built forms. Srigley (2007) ask the questions to help determine that relationship: "How do people behave in a particular place? What are the patterns of human and natural activity? How can a place enhance experiences and memories? What makes this place like no other?" (www.placemaker.ca)

Planners and architects now desire to create new communities and revitalize old communities with a strong "sense of place." The designers are focusing their ideas on promoting "a more compact pattern of development, mixed use, a strong pedestrian orientation, active civic and community life, closer links between public transit and land use, and higher housing densities. (Plannersweb 2007)

A project is defined by a certain character in the design. As people spend time in and around the project they become emotionally attached to it. Memories are created. The project now becomes a place we either love or hate. If we love it, the project is a destination point we will journey to throughout our life. If we hate it, the project becomes a place we will avoid. Either way, because the project had character we spent time there, developed feeling of love or hate, and a place evolved.

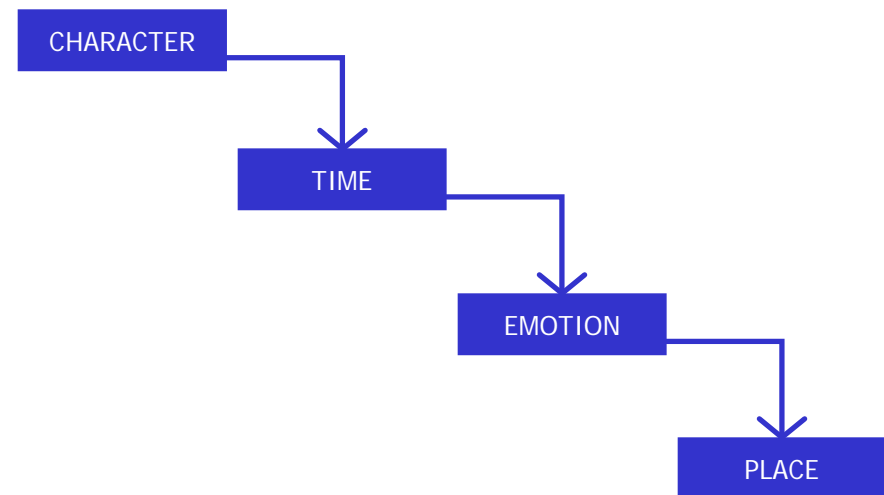
By design, a transit oriented development accomplishes the goal of creating a sense of place in that mixed-use development. Sustainability and connectivity are achieved through the selection of a specific site and the implementation of development guidelines. These elements interact with each other and result in a sense of place.

Figure 12 – Srigley's vision of a development with a sense of place.



Image: Srigley 2007

Figure 13 – The flowchart below illustrates the relationship of the various elements involved in creating a Sense of Place.



3.5 Current Regulations: Code of Ordinances

The City of Germantown has been given police powers by the State of Tennessee by state enabling acts passed as legislation. These powers afforded to the City of Germantown are a means by which the city can ensure the health, safety, and welfare of its citizens. One of the tools used by the city to promote the protection of its residents is the local zoning ordinance. Zoning is the regulation tool used to guide the development of land. The pictures shown here illustrate the way property is currently being developed in Germantown.

Figure 14 – Automobile Oriented Design: Results in reliance in the automobile to get from location to location and not pedestrian access points.



Figure 16 – Large Surface Parking Lots: The predominate feature of the development is the parking lot.



Figure 18 – Huge Setbacks: To accommodate the parking required, the buildings are set far back from the street.



Figure 15 – Wide Streets: Seven lanes of Poplar Avenue result in high volumes of vehicular traffic that is unsafe for pedestrian use.



Figure 17 – Single Use Buildings: Only one tenant may occupy and use the building. This building has had multiple users, but only one occupant at a given time.



Figure 19 – Single Story Buildings: Long stretches of buildings with multiple tenants more commonly known as Strip Commercial Centers.



4.0 Mixed Use District Transit Oriented Development Guidelines

The proposed guidelines will be an instrument for development in light rail transit stop locations that will offer a tool that the City of Germantown can use to promote economic growth and sustainability. The guidelines are developed based on the assumption that MATA will develop a light rail Memphis / Germantown / Collierville corridor. The City of Germantown benefits from a proactive strategy that will guide the development of commercial, office and residential space around a future transit station. The guidelines will allow for people to live, work, and shop in Germantown without having to drive from location to location. The guidelines will promote pedestrian usage and walkability further reducing reliance on the automobile.

Guidelines that Promote TOD in Mixed Use Districts result in a development that includes LRT stations, higher density, employment opportunities, commercial areas, park and ride facilities, street connections, pedestrian and bicycle access, mixed land use, and people friendly design.

4.1 What is Transit Oriented Development

“Transit-oriented development (TOD) is the combination of land use, zoning, and transportation planning to provide higher-density, mixed-use developments that are easily accessible by various modes of transportation. TOD draws from the traditional design principles found in older central cities and suburbs.” (Greater Cleveland Regional Transit Authority, 2004)

According to Calthorpe (1993) TODs are an attractive alternative to the conventional method of developing housing, services, and employment to a diverse population. The TOD developments allow for pedestrian and transit use to access the mixed uses associated with the area. The size of a TOD is to be determined on a case by case basis. However there are common elements that are include in all TODs. The elements include a 1) comfortable walking distance ($\pm 2,000$ feet) for pedestrians, 2) are mixed use in character, and 3) are compact and centered around a transit stop having a gross area of 144 acres or approximately / 0.23 square miles.

There are two types of TODs; Urban TOD and Neighborhood TOD. The Urban TOD is located directly on the trunk line of the transit system and has a higher concentration of commercial uses, employment centers, and residential densities. The Neighborhood TOD is located on a feeder route of the main transit system and has moderate concentration of commercial uses, employment centers, and residential densities.

All TODs must be mixed use and contain a minimum amount of public space, employment, and residential units. The preferred mix of land used is shown here.

<u>Use</u>	<u>Neighborhood TOD</u>	<u>Urban TOD</u>
Public	10% - 15%	5% - 15%
Employment	10% - 40%	30% - 70%
Housing	50% - 80%	20% - 60%

TODs must have a mixed use of employment that is located adjacent to the transit stop (Calthorpe 1993). The employment uses include but are not limited to supermarkets, restaurants, retail, entertainment, and offices. The residential areas should be located within walking distance of a transit stop and include a mix of housing types from single family, town homes, apartments, and condominiums. Public uses are to serve the neighboring residential and employment users. Parks, plazas, public services and , public buildings meet this requirement.

Figure 20 – Template developed by Peter Calthorpe that illustrates the desired relationship between residential, employment, and public space in and around a transit stop.

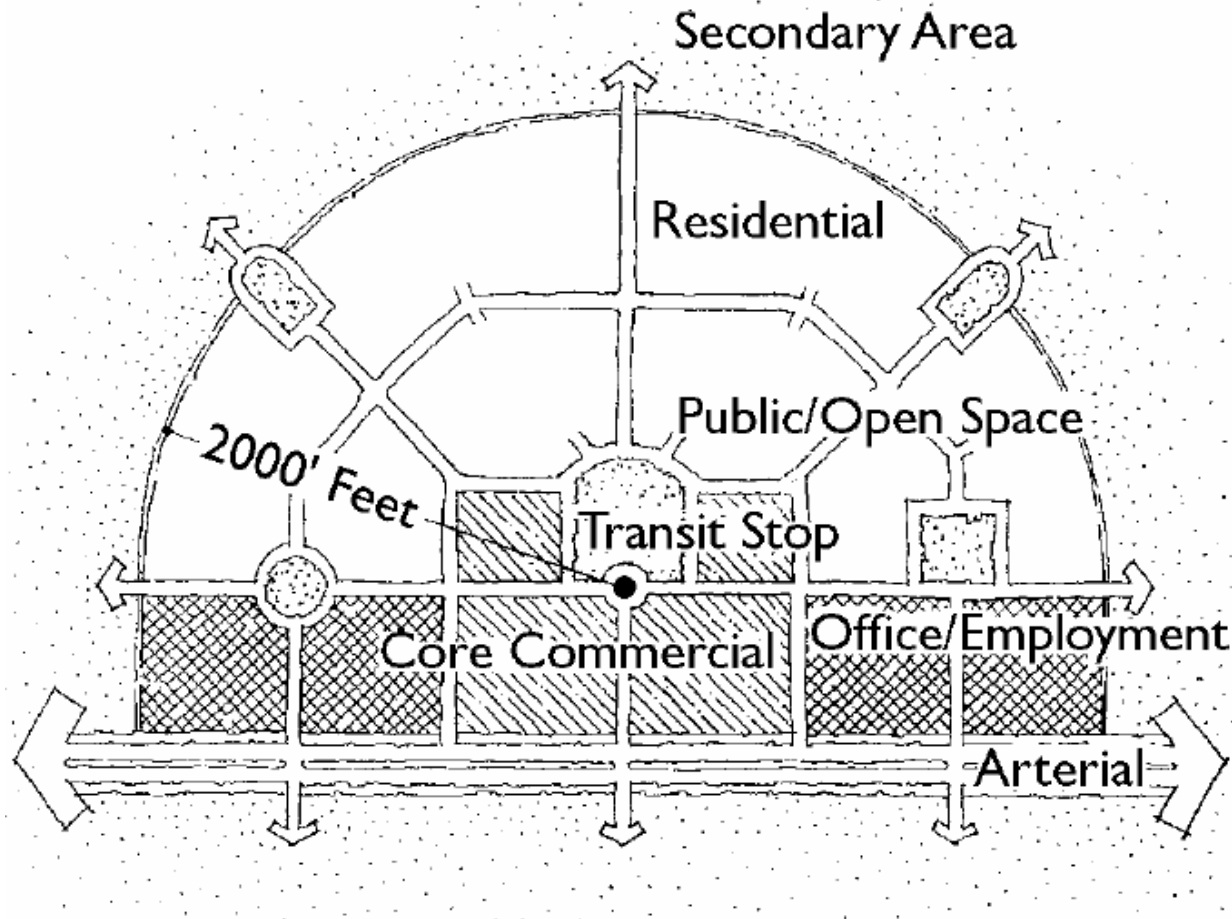


Image: Calthorpe, 1993

4.2 Goal of Mixed Use District Transit Oriented Development Guidelines (MUD-TOD)

There are two goals of the MUD-TOD. The first is to accommodate transit, pedestrian, and bicycle access into the design of new developments. The second is to encourage transit friendly design for residential, commercial, and employment developments.

MUD-TOD Guidelines will be broken into four major components: street connections, pedestrian and bicycle accessibility, land use, and site design. Each component will have several subcomponents that will further define the desired way in which each component can be implemented into a site around a light rail transit stop or to assist a site to be self sufficient without a stop. The guidelines are simplified from conventional standards in that pictures illustrate the desired guidelines stated in text (Nelessen 1993).

Figure 21 – Artist illustration of a development that is designed for pedestrian and bicycle use in addition to the automobile.



Greater Cleveland Regional Transit Authority, 2004

Figure 22 – Artist illustration of a development that is designed for mixed use.



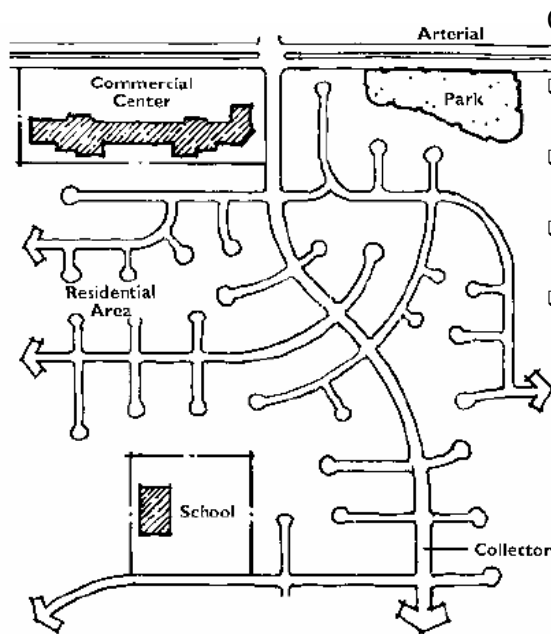
Greater Cleveland Regional Transit Authority, 2004

4.3 Street Connections: Circulation

The street network should provide interconnection and direct access to multiple uses and to transit stops that is convenient to both the driver and the pedestrian. With its multiple routes, the street network will improve the circulation of both vehicular traffic and pedestrian and bicycle traffic. Street circulation is a vibrant development.

“An interconnected network of streets distributes traffic among all roadways, rather than concentrating it on arterial roads. Such a system improves the mobility of pedestrians and bicyclists by providing multiple travel routes, in addition to allowing more efficient transit routing. In order to be most effective, this connectivity needs to also extend into neighboring developments.” (Mid-America Regional Council, 2006)

“Pedestrian access is predicated on a street network that is interconnected, and provides direct and convenient access to various uses or transportation alternatives, such as transit stops.” (Anderson-Watters et al, 2006)



Conventional Street Design.

- ❑ Lack of Connectivity
- ❑ Lack of Continuity
- ❑ Lack of Human Scale
- ❑ Automobile Oriented

Image: Calthorpe Associates

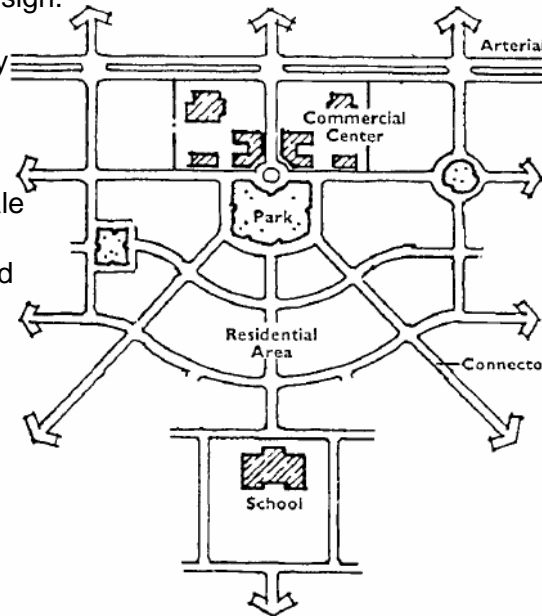


Image: Calthorpe Associates

Transit Oriented Development Street Design.

- ❑ Interconnected Street Network
- ❑ Direct Access to Various Uses and Transit Stops
- ❑ Human Scaled Street Blocks
- ❑ Bring Mixed Uses in Proximity

4.4 Pedestrian and Bicycle Accessibility

One the most important aspects of TOD is pedestrian accessibility. Convenient and efficient pedestrian access promotes walking as an alternative mode of transportation and ensures access to other forms of transportation, particularly transit. (Anderson-Watters et al, 2006) Sidewalks should be incorporated into the design of all streets, parking facilities and public spaces, and should be designed to connect building entrances. (Mid-America Regional Council, 2006)

- ❑ Wide, Well Lit, and Protected Paths
- ❑ Safe Intersection Crossings
- ❑ Trees, Planter, Benches, Awnings, and Architectural Features to Improve Pedestrian Environment

“Pedestrian accessibility is one of the most important elements of transit-oriented design. Convenient and efficient pedestrian access promotes walking as an alternative mode of transportation and ensures access to other forms of transportation, particularly transit. Safe, convenient, continuous, and direct pedestrian access ensures accessibility for the transit-dependent population and promotes transit as an alternative for people who choose not to drive.”
(Anderson-Watters et al, 2006)



Image: Kansas City Area Development Council (www.thinkkcc.com)

“Direct pedestrian paths make it easier for people to walk throughout the community as well as to and from transit stops. Sidewalks should be incorporated into the design of all streets, parking facilities and public spaces, and should be designed to connect building entrances. To make walking more attractive, it is important to provide as many pedestrian connections as possible, whether they are linking adjoining buildings, adjoining sites or adjoining neighborhoods.”
(Mid-America Regional Council, 2006)

- ❑ Bike Racks or Lockers Located at Transit Stops, Parking Garages, and Building Entrances



Images: RPM Transportation Consultants, LLC. January 2005

4.5 Land Use

The two most important aspects of mixed use district transit oriented development guidelines in regard to land use are density and mixed use.

Density is defined as office, commercial, and multi-tenant residential uses centered around a community focal point, public space, or transit center that results in large numbers of people being in one place during the same time period.

Mixed Use is complimentary uses that encourage different activities throughout the day and creates a vibrant neighborhood.

“There are two primary ways of measuring density — gross density and net density. Gross density means the total number of units (e.g., jobs, households, population) divided by the total land area. Net density refers to the total units divided by the net land area, excluding roads, public open space, parking lots, environmentally sensitive areas, and other land area that does not contain buildings. The difference between net and gross can be considerable, since area for roads and parking alone can often consume 20 percent of a land in a station area. Both measures are useful for different purposes.” (Puget Sound Regional Council June 1999). “Net density is a good measure for a specific project site because it deals only with the land that is available for development and represents how efficiently a specific site has been utilized. Gross density is a better measure for a large area, such as a station area, because it more accurately captures how all land buildable and unbuildable contributes to the pedestrian environment and overall intensity of development.” (Puget Sound Regional Council June 1999).

4.5.1 Density

Residential density is shown in dwelling units per acre, employment density is shown in employees per acre, and commercial density is shown in floor area ratio. For this report net density will be the unit of measure where the roadways will be removed from the area of the site for the purpose of calculating density. Density is less important for commercial retail than is a mix of appropriate services. (Puget Sound Regional Council, June 1999).



Figure 23 – Artist illustration of a mixed income mixed use development in Washington, DC.

<http://www.anacostiawaterfront.net/>

Table 1 – TOD Density Requirements

Recommended Density ¹ for TOD (Calthorpe 1993)	
Office/Retail with out structured parking	0.35 FAR ²
Office/Retail with surface parking	0.30 FAR
Residential – Neighborhood	7 DUA ³
Residential – Urban	12 DUA

Notes:

1. Net Density

2. Floor Area Ratio

3. Dwelling Units per Acre

4.5.2 Mixed Use

Mixed use can be defined as the practice of placing numerous land uses into a single development in an effort to create an activity level that will promote sustainability and provide a stable tax base.

- ❑ Residential, office, retail, and public uses within walking distance



Conceptual Plan for Urban Mixed Use Development Residential and Office with Shared Retention and Parking.

<http://www.pinellascounty.org/Community/hfa/Summit/SummitImages>

- ❑ Multipurpose building that can be adapted for various uses over time



Glenwood Park - Retail & Restaurant in Atlanta, Georgia. Residential and office space is above the retail space in the same building.

Image: www.meddin.com

- ❑ Multiple uses incorporated into a single building or into a block of buildings



Mixed-use development in New York City. Residential space is above the retail space in the same building.

Image http://en.wikipedia.org/wiki/Mixed-use_development

According to Calthorpe (1993) the site related issues such as context, market demand, topography, infrastructure, capacity, transit service and highway accessibility all contribute the appropriate mix of land uses. Attention should be given to character of the surrounding area when a mixed use project is designed. The use of vertical mixed use buildings does not necessarily contribute a vigorous pedestrian setting because vertical mixed use is difficult to implement under current zoning and real estate practices that encourage single use buildings.

4.6 Site Design

Site design should be such that people are attracted to the development through the visual elements and the desire to return from the emotional response of having enjoyed time spent in the development. The four aspect of site design that are covered in these guidelines are the principle of applying good urban design, building scale and orientation, parking, and public spaces.

Figure 24 – Artist illustration of a conceptual design that has incorporated mixed use development in the Puget Sound Region.

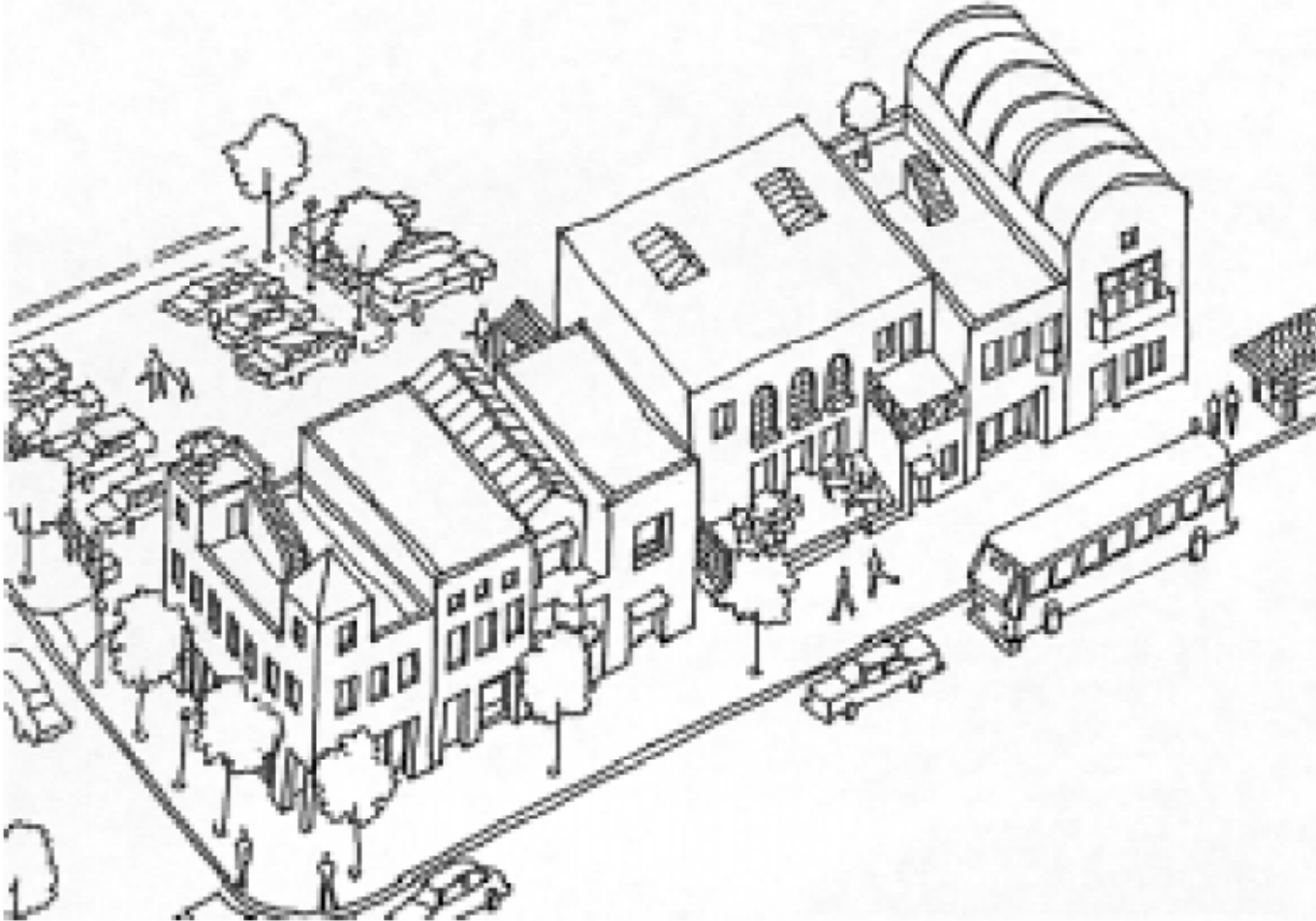


Image: Puget Sound Regional Council, A Transit-Oriented Development Workbook, June 1999

4.6.1 Urban Design

Successful developments generally have attractive architecture, interesting storefronts, visible and accessible building entrances, adequate lighting, are designed with safety in mind and are easily accessed by walking.

- ❑ Incorporate Walking Distances (2,000 feet or 5 minutes)



Image: The Congress for the New Urbanism (www.cnu.org)

- ❑ Visible and Easily Accessible Entrances



Image: Murray Fireclay Area TOD Design guidelines

- ❑ Attractive Architecture and Storefronts



Image: Murray Fireclay Area TOD Design Guidelines

All picture used from the Murray Fireclay TOD Guidelines were not identified in regard to their place of origin.

- ❑ Good Lighting



Image: Murray Fireclay Area TOD Design Guidelines

4.6.2 Building Scale and Orientation

Buildings invite and draw people inside them by positioning the buildings close to the traveled way and by the perception that the traveler will fit in with the destination.

❑ Human Scale Architecture



Image: Germantown Smart Growth Plan, 2007

A key to making a development pedestrian oriented is to design varied and interesting building facades. People do not desire to walk down streets where all of the buildings look the same and are set back from the street. The building design should be visually stimulating without implying disorder. Design elements should be incorporated at the street level to encourage window shopping and foot traffic into and out of stores. The bulk of the building should contain solid building materials such as stone, brick, and wood while using enough glass to promote looking inside. (Calthorpe 1993)

❑ Articulated Facades



Image: MARC Transit-Supportive Development Guidebook

❑ Buildings and Entrances Oriented Along the Street



Image: Murray Fireclay Area TOD Design Guidelines

4.6.3 Parking

Parking areas, while they make no contribution to the urban environment or put eyes on the street, are an undeniable component of the urban environment (Murray Fireclay Area TOD Design Guidelines, 2006). Parking is a significant component of transit-supportive development. The proper location and size of parking facilities are a critical principle of TOD. The parking facilities should be sensitive to pedestrian and bicycle circulation and provide convenient access to street fronts. Parking design should be made pedestrian friendly with the inclusion of walkways that are designed to shorten walking distance. (Mid-America Regional Council, 2006)

❑ Parking Structures



Image: <http://learning.ncsa.uiuc.edu> (University of Illinois)

“Reduced parking standards should be applied to Urban TODs in recognition of their proximity to high frequency transit services, their walkable environment, and mix of uses. Standard parking ratios are recommended for Neighborhood TODs.” (Calthorpe 1993) Minimum parking standards should be allowed base on the analysis of the site’s conditions and maximum parking standards set for non-residential developments. The approximate ratio for parking as recommended by Calthorpe (1993) is as follows:

Office: 2-4 spaces/1,000 sq. ft.

Retail: 3-5 spaces/1,000 sq. ft

❑ Shared Parking Adjacent to or in the Rear of Buildings



Image: Photo courtesy of www.pedbikeimages.org / Dan Burden (Honolulu, HI)

❑ On Street Parking



Image: Murray Fireclay Area TOD Design Guidelines (Murray City, Utah)

4.6.4 Public Spaces

Public spaces should be created to enhance the surrounding mixed uses. The spaces should take advantage of increases in pedestrian activity around the LRT station.

❑ Parks



Image: Massachusetts Smart Growth Toolkit

❑ Community Gathering Places



Image: Strategic Plan for Transit Oriented Development, June 2006

❑ Plazas



Image: HIDDEN IN PLAINSIGHT, September 2004

❑ Public Art



Public space should provide a public focus and should be located adjacent to public streets, residential areas, and retail uses. In TODs, public space serves as meeting places, recreational centers, and picnic spots and are a vital element in a livable and enjoyable high density community.

Image: <http://modernsculpture.com>

5.0 A Development Proposal

5.1 Node Location

To search for possible nodes that will support transit stops, the Regional Transit Plan must be compared to the Shelby County Highway Map. This search reveals two candidate nodes. The first is around the intersection of Poplar Avenue and Germantown Road. The second is around the intersections of Poplar and Forest Hill-Irene Road. Now that two possible nodes are identified they will need to be assessed further to develop a land use comparison to determine if they are acceptable for a transit stop.

Figure 25 – Regional Rail Transit Plan.

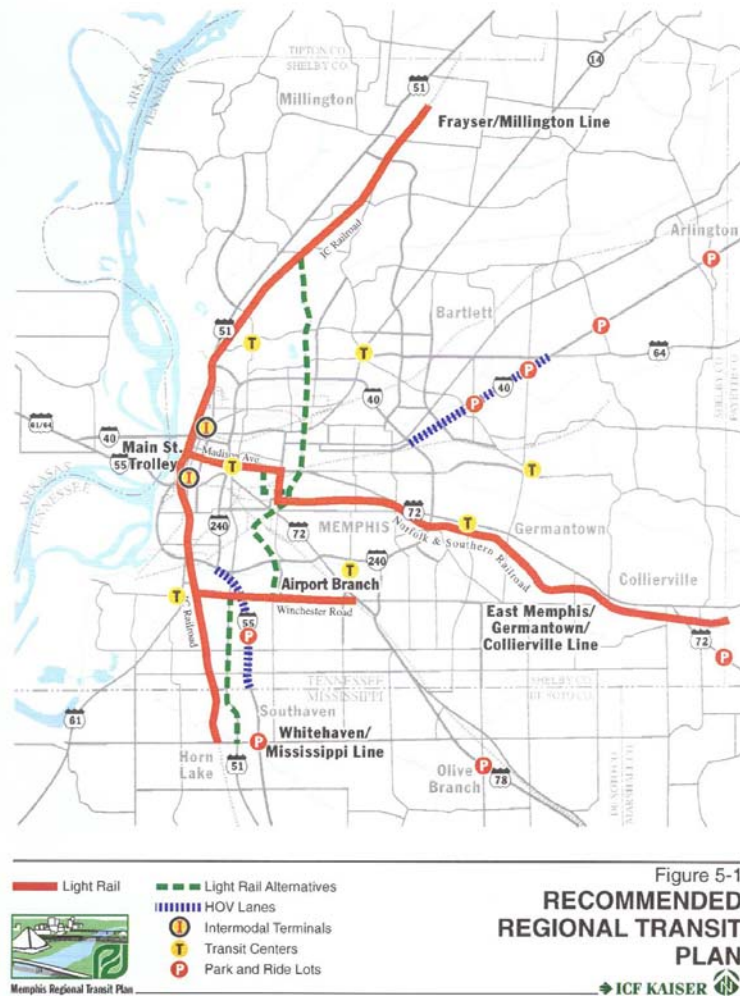


Image: Memphis Area Transit Authority

Figure 26 – Potential Nodes in Germantown along the East Memphis/Germantown/Collierville route

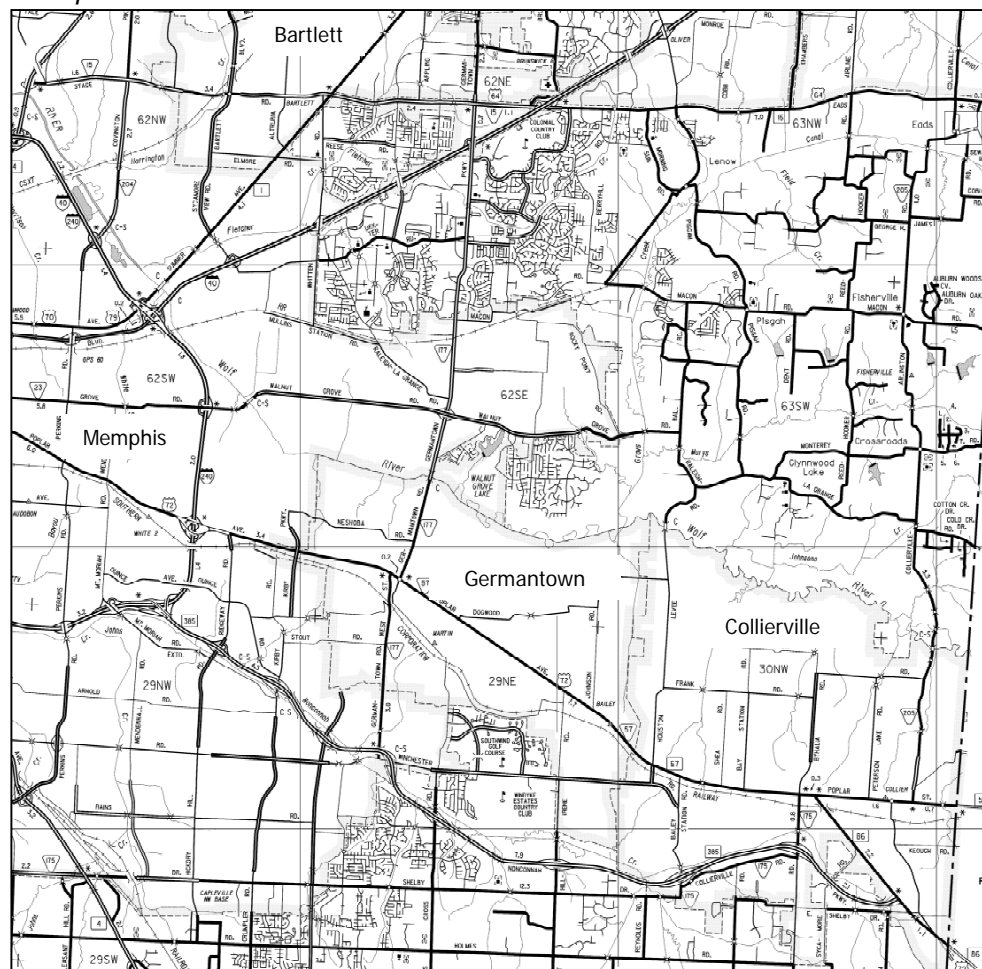
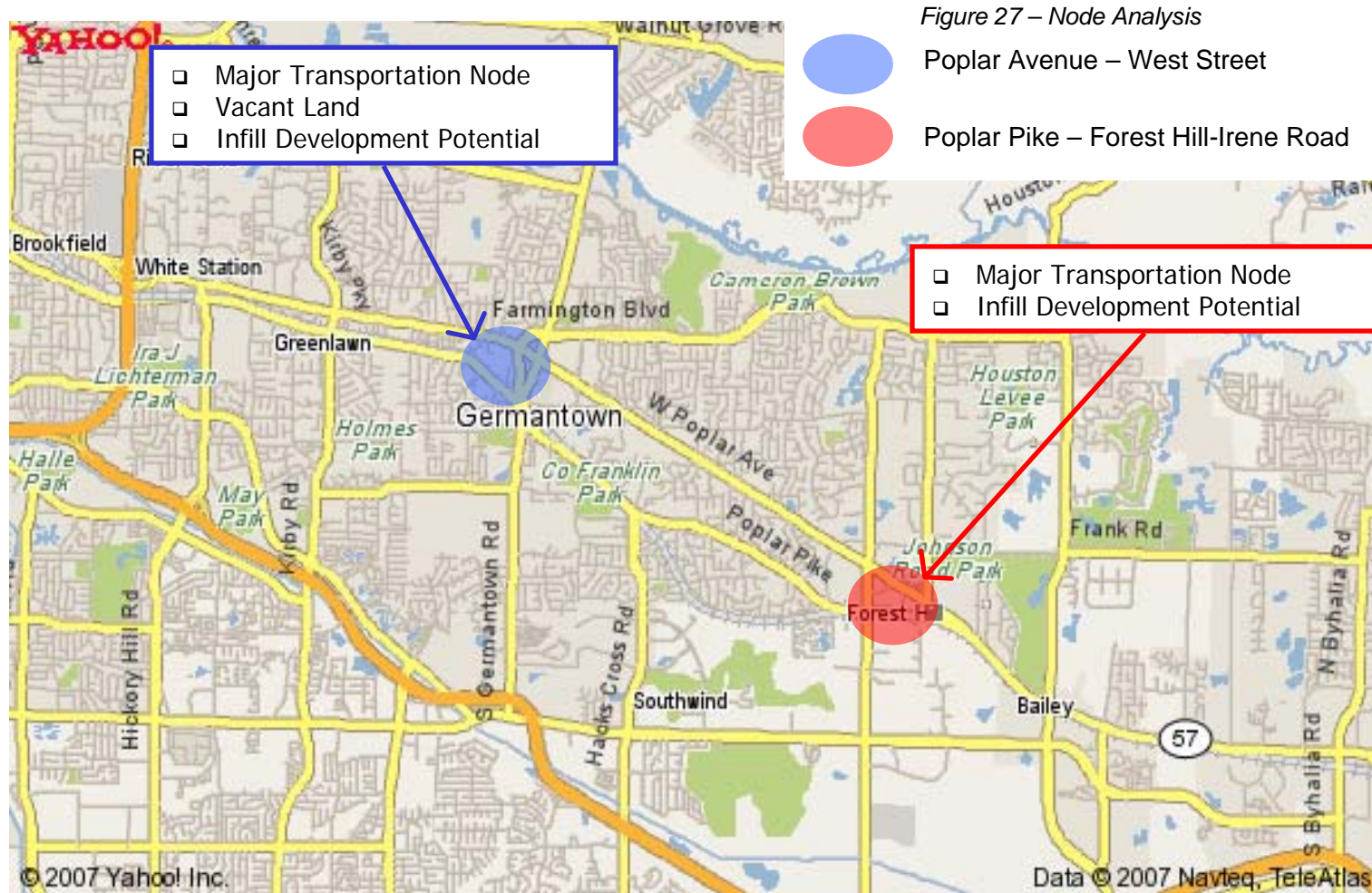


Image: Tennessee Department of Transportation 2006

5.2 Node Analysis

A closer examination of the two nodes reveals that the first node location is better suited at the Poplar Avenue and West Street intersection. The reasons, as shown in the map below, are that the intersection is also a major transportation node, there is a large undeveloped parcel of land to the west of West Street, and there is a potential for infill development along the west side of West Street between the the street and the undeveloped property. The second node, located at that the intersection of Poplar Pike and Forest Hill-Irene Road, is better suited as the node for development of a transit oriented development. The intersections is a a major transportation node and has the potential for infill development. The surrounding land uses of both sites are consistent with the desired land uses that surround an LRT stop. The uses around the nodes are commercial, office, and residential.



5.3 Node Analysis: Poplar Avenue and West Street

The properties and assets of the Poplar Avenue – West Street node examined to determine if the area surrounding the node is desirable for LRT Station development are listed below.

In the aerial photograph below, the various existing land uses around the site can be seen. The area highlighted in red is the vacant land that can be developed. The yellow line highlights the Norfolk Southern Railroad. Poplar Avenue, which runs east-west, is on the north and has townhomes on the north side of the street. West Street, which runs north-south has a mix of office and retail condominiums on the west side of the street and single use commercial buildings on the east side of the street. Poplar Pike, which runs parallel with the railroad, has single family dwellings on both side west of the its intersection with West Street where there is a various commercial uses.

Poplar Avenue – West Street node is the more suitable node for initial development as a TOD due to the inclusion of vacant land at that location. The vacant land will allow for a less expensive development in regard to removal of existing buildings and infrastructure to create a buildable area.

Table 2 – Node Characteristics

Major Transportation Node

- Poplar Avenue
- West Street
- Poplar Pike
- Norfolk Southern Railroad

Vacant Land

- Arthur Estate Subdivision

Infill Potential

- Saddle Creek West
- Saddle Creek South
- Market Square
- Corporate Center

Figure 28 – Aerial photo of the Poplar Avenue-West Street Node.



Image: Germantown GIS Data Base

5.4 Selected Site

A site selected to illustrate the development under existing condition, with the SmartCode, and with MUD-TOD guidelines is the Arthur Estate Subdivision more commonly referred to as the Arthur Property. It is located north of the Norfolk Southern Rail Road (which is on the north side of Poplar Pike), south of Poplar Avenue, and west of West Street. Three streets dead-end into the property: McVay Road from the south, Miller Farms Road from the northwest, and an unnamed private drive servicing Pulaski Bank from the northeast. There are currently five (5) residential tracts on the property.

The property is zoned “O-C” Office Campus as result of the March 11, 2003, approval by the Board of Mayor and Aldermen of Ordinance No. 2002-5 for the rezoning of the 39.13 acre property from “R” Residential and “R-H” Residential Retirement to “O” Office and “O-C” Office Campus zoning districts. On April 12, 2004, the Board of Mayor and Aldermen approved Subdivision Contract No. 451 for the development of the Arthur Estate Subdivision. On January 24, 2005, the Board Of Mayor And Aldermen approved Project Development Contract No. 1116 for the development of a bank on Lot 1 of the Arthur Estate Subdivision, which fronts Poplar Avenue.

The property to the west is zoned “R” Residential and is part of the Timbers Subdivision. The property to the east is zoned “SC-1” Shopping Center and is home to Saddle Creek South, Market Square, and Corporate Center office/retail centers. The property to the north is zoned “R” Residential, “O” Office and “O-C” Office Campus. The property to the south across Poplar Pike is zoned “R” Residential and “R-1” Residential. The property to the southeast is zone “OG” Old Germantown.

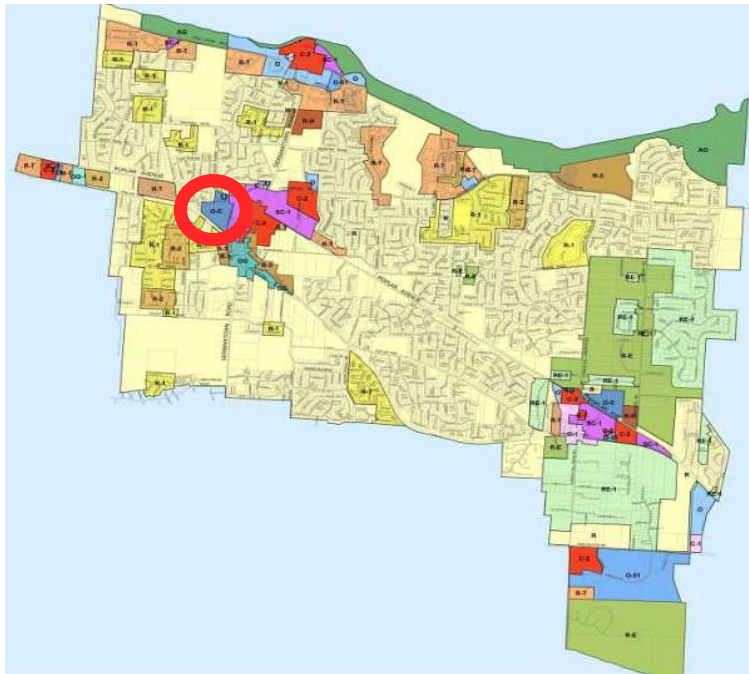


Figure 29 – The current zoning map of the City of Germantown shows both investigated node to be the commercial centers of the City. The Arthur property, highlighted with the red circle, is located in the western section of the City of Germantown.

5.5 Current Zoning: “O-C” Office Campus

The “O-C” District is defined in Section 23-671 of the Code of Ordinances of the City of Germantown as an area for class “A” offices and supporting retail uses with a maximum of four floor buildings. If a project were to be developed under the current Zoning Ordinances of Germantown the likely outcome includes the following:

- ❑ 64 foot tall buildings
- ❑ Large Setbacks Required
 - Front yard setbacks
 - 120 foot building set back line with parking in the front for a maximum building height of 35 feet
 - 80 foot building line with no parking in the front for a maximum building height of 35 feet
 - Buildings that exceed 35 feet in height shall be set back an additional 3 feet horizontally for ever 1 foot vertical
 - Side yard setbacks
 - 80 feet for a maximum building height of 35 feet when adjacent to a residential property
 - 20 feet for a maximum building height of 35 feet when adjacent to other business uses
 - Buildings that exceed 35 feet in height shall be set back an additional 3 feet horizontally for ever 1 foot vertical
 - Rear yard setbacks
 - 80 feet for a maximum building height of 35 feet when adjacent to a residential property
 - 20 feet for a maximum building height of 35 feet when adjacent to other business uses
 - Buildings that exceed 35 feet in height shall be set back an additional 3 feet horizontally for ever 1 foot vertical
- ❑ Large Parking Lots
 - 1 parking space per 200 sq. ft.
- ❑ Low Density
- ❑ Isolation
- ❑ Promotes Automobile Use
- ❑ Minimum 35% pervious area (Green Space)

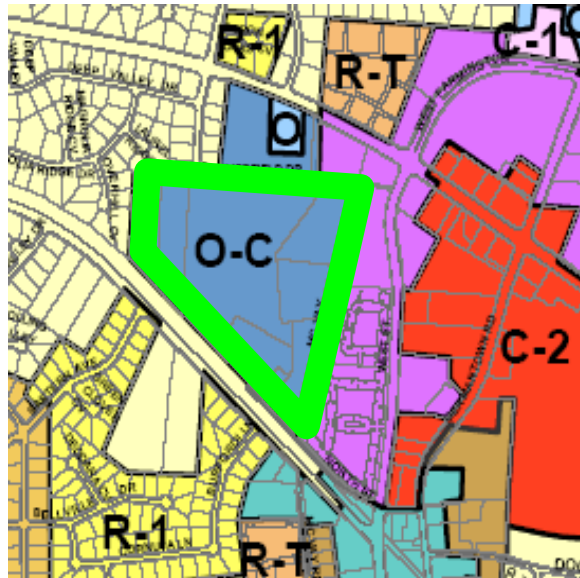


Image: Germantown GIS Data Base 2006

Figure 30 – An enlargement of the current zoning map of the City of Germantown showing the Arthur property, highlighted with green, is zoned “O-C” Office Campus.

5.6 Existing Ordinances

Under the existing conditions, a typical build-out scenario would include large buildings that would be surrounded by parking lots and limited accessibility inside and outside of the development. In addition to the possible outcomes previously listed, the plan shown here as developed by the Lawrence Group as part of the Germantown Smart Growth Plan exhibits features that can be negatively associated with developing the site under the current ordinances as listed below.

- ❑ Limited access points which increase traffic congestion
- ❑ Surface parking lots consume roughly three times more space than the buildings
- ❑ Single-use buildings used only during normal work hours (8:00 a.m – 5:00 p.m.)
- ❑ Affords 500,000 square feet of single-use office space.



Image: Germantown Smart Growth Plan 2006

Figure 31 – The Lawrence Group's illustrations of a conceptual site design under the current zoning regulations for a "O-C" Office Campus.

Table 3 – Concept Plan Data

Current Conditions Plan Net Density¹

- ❑ Retail – 0 Sq. Ft. (0 floor area ratio)
- ❑ Office – 500,000 Sq. Ft. (0.35 floor area ratio)
- ❑ Residential – 0 units (0 dwelling units per acre)

Note:

1. Net Density has the roadway system removed from the overall site area.

5.7 Smart Code Alternative

Smart Code implements the vision of the Germantown Smart Growth Plan and fulfills the Guiding Principles of the Germantown Vision 2020 Strategic Plan (2005).

As a companion document to the Smart Growth Plan, City of Germantown staff and the Lawrence Group are currently developing a set of development regulations called the “SmartCode for the Germantown Smart Growth Plan.” The standards are specifically adapted and tailored for Germantown based on model regulations of the SmartCode created by Duany Plater-Zyberk & Co., “...a model integrated development code that incorporates Smart Growth and New Urbanism principles, Transect-based planning, environmental and zoning regulations, and regional, community, and building-scaled design provisions” (Smart Code, Version 8.0, available from PlaceMakers.com). The code is intended to replace the zoning and subdivision regulations currently in place in the Smart Growth Area. The code may also be considered for application in other commercial and mixed-use nodes in the City. (Lawrence Group, 2006)

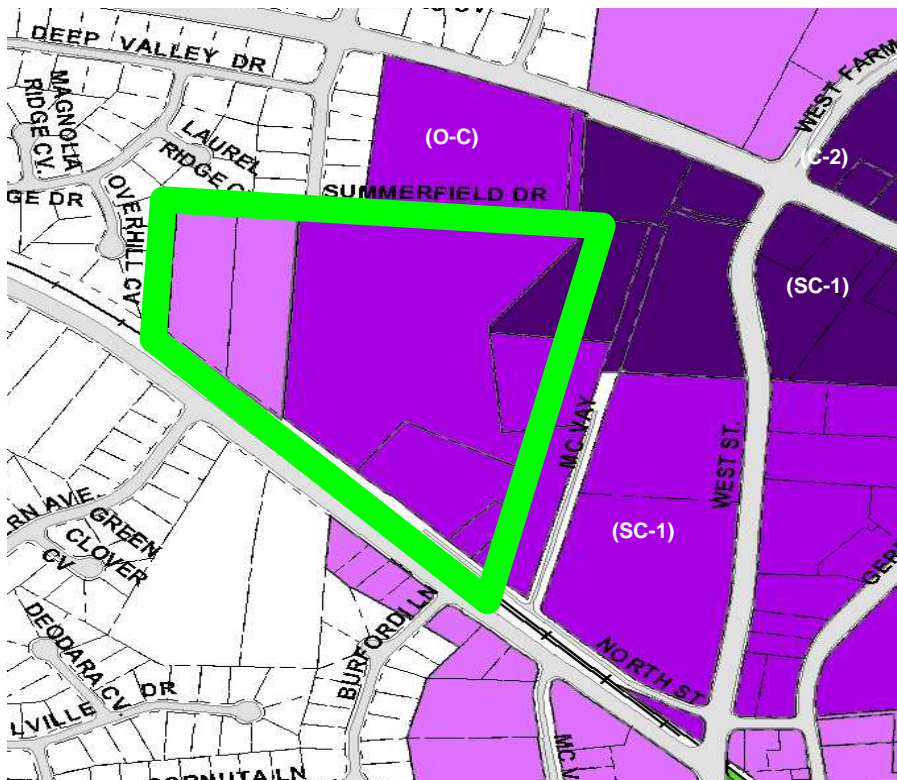


Figure 32 – A portion of the proposed zoning map associated with the SmartCode. The Arthur property, highlighted in green, will contain three proposed zoning districts: T6, T5, and T4.

Table 4 – SmartCode Benefits

- ❑ Form Based Code
- ❑ Allows for Mixed Uses
- ❑ Allows for Buildings Closer to Street
- ❑ Allows Higher Density
- ❑ Allows for High rise Buildings and Structures
- ❑ Encourages Pedestrian Access

Legend



Image: Germantown Smart Growth Plan 2006

The plan shown on the right, also developed by the Lawrence Group as part of the Germantown Smart Growth Plan, illustrates an alternative design that incorporates office space as well as commercial, civic, and residential uses. This plan more appropriately reflects the City's commitment to the implementation of the Smart Code as its regulating tool that results in sustainable developments. The plan encourages mixed-use development, has public space designed into the layout, and includes a range of housing options (Lawrence Group, 2007).



Figure 33 – The Lawrence Group's illustrations of a conceptual site design under the proposed SmartCode and Proposed Transect zoning.

Table 5 – SmartCode Plan Data

SmartCode Plan Net Density¹

- ❑ Retail – 305,000 Sq. Ft. (0.15 floor area ratio)
- ❑ Office – 175,000 Sq. Ft. (0.09 floor area ratio)
- ❑ Residential – 285 units (6 dwelling units per acre)
 - Apartments – 215 Units
 - Town homes – 70 Units

Note:

1. Net Density has the roadway system removed from the overall site area.

5.8 Mixed Use District Transit Oriented Development Alternative

Site and Vicinity: Visual Form – The site inventory is an essential step in establishing the relationship between the physical, biological, and cultural aspects of the proposed site with the surrounding area. By understanding these relationships the design and implementation of the proposed plan can be incorporated with a look and appeal to the surrounding neighbors (LaGro 2001). The data used in inventory of the site can come from various sources. The information is then analyzed in site analysis to formulate the concept development design.

The subject site is a compilation of nine smaller parcels. A Legal description for the individual parcels can be found at the Shelby County Registers Office's website, www.register.shelby.tn.us. The total area of the proposed site is 32.61 acres.

Transportation to and around the site consists of public rights-of-way on the north, east, and south sides of the property in the form of Poplar Avenue, McVay Road, Poplar Pike, and Norfolk Southern Rail Road. There is one public (Miller Farms Road) and one private (Banks driveway) right-of-way that dead end at the north property line

Landform and Suitability – The physical characteristics of a site will establish if the site is appropriate for development based on the development's requirements.

The topography of the site is such that the proposed site has a ridgeline running north and south through the site. A drainage ditch flows through the western portion of the site and on to the property to the north and then under Poplar Avenue in a public drainage system. Drainage ditches run the entire southern boundary of the property along the railroad right-of-way. The slopes on the site are suitable for low density residential, which the current use is. In the southeast portion of the property there are two small ponds located north and south of each other. These ponds have been used to water livestock and pets. The property is not located in a flood hazard area (see FIRM Map Numbers 47157C 0235 E and 47157C 0230 E). It should be noted that both maps indicate the flood study area has stopped just north of the subject site.

Figure 34 – Looking south from Poplar Avenue in front of the bank.



Image: by Author, 2007

Figure 35 – Looking north from the Poplar Pike and Eastern Street.



Image: by Author, 2007

Figure 36 – Existing ditch along east property line of the Arthur Property.



Image: by Author, 2007

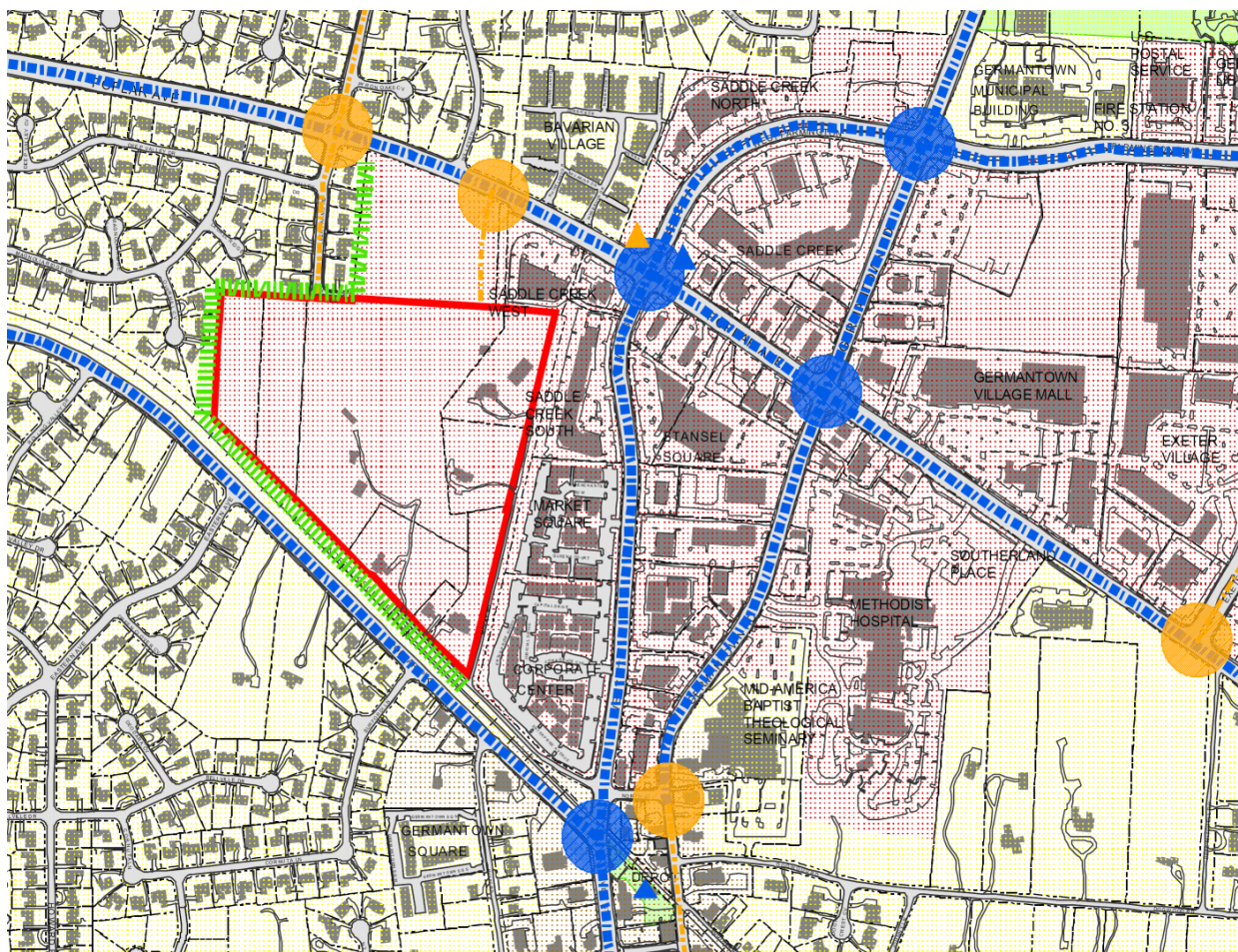


Image: Germantown GIS Data Base

Figure 38 – Fountain at Saddle Creek.



Image: by Author, 2007

Figure 39 – Fountain at Bavarian Village.



Image: by Author, 2007

Site Vicinity: Visual Form (Figure 37)

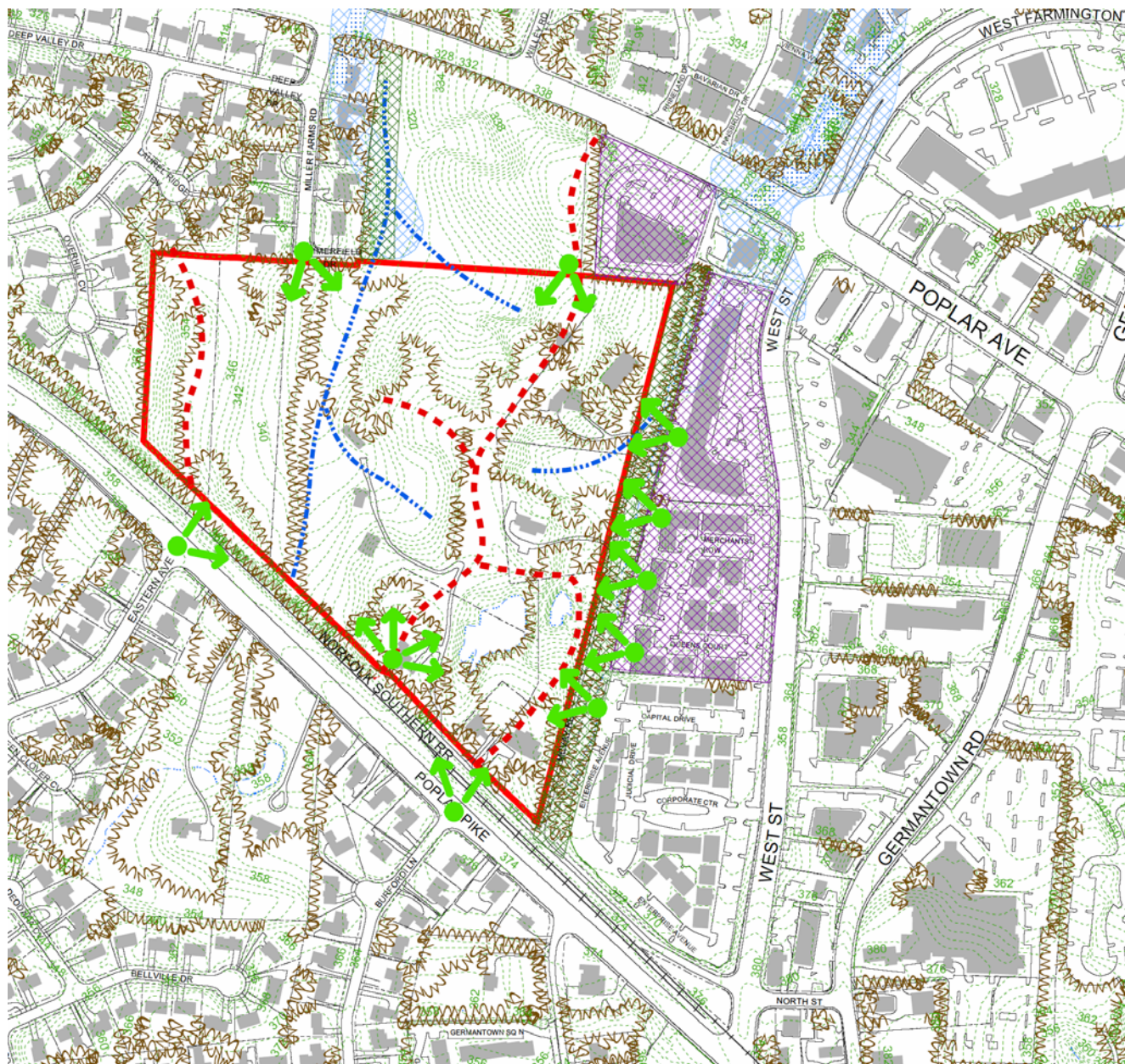
- ■ ■ ■ Major Pathway
 - Poplar Avenue
 - West Street
 - Poplar Pike
 - Germantown Road
 - Farmington Boulevard
- - - - Minor Pathway
 - Millers Farm Road
 - Exeter Road
 - Arthur Road
 - Riverdale Road
- Major Node
 - Poplar Avenue & West Street
 - Poplar Avenue & Germantown Road
 - Poplar Pike & West Street
 - Germantown Rd. & Farmington
- Minor Node
 - Poplar Avenue & Miller Farm Road
 - Germantown Road & North Street
 - Poplar Avenue & Exeter Road
- ||||| Edge
- ▲ Major Landmark
 - Germantown Depot
 - Saddle Creek Fountain
- ▲ Minor Node
 - Bavarian Village Fountain
- ▨ Employment/Commercial District
- ▨ Residential District

Figure 40 – Historic Germantown Depot.



Image: by Author, 2007

Land Form and Suitability (Figure 41)



- Project Site
- Flow Line
- 2' Contours
- Private Steets
- Property Line
- Public Streets
- 100 Year Flood
- View Shed
- Rail Road
- Existing Buildings
- Tree Line
- Park
- Conservation Area
- Redevelopable

Figure 42 – Looking west toward Arthur Property from the Corporate Center



Image: by Author, 2007

Image: Germantown GIS Data Base

5.9 Site Concept Development

Conceptual design is used to review a project for compatibility of a proposed project with the physical characteristics of a site and with local ordinances.

In the picture on the left a Transit Oriented Development template (Calthorpe, 1993) is overlaid on an aerial photograph of the site. The template is rotated to align the Norfolk Southern Railroad with the templates transit line. The result shows the commercial / office components aligning with the existing commercial / office located on the east side of the site. The residential areas aligned with the existing residential subdivision to the west and on the north side of Poplar Avenue.

In the picture on the right the template is again overlaid on an aerial photograph of the site. The template is rotated to align the eastern property line with Calthorpe's transit line. The rotation selects the commercial / office components located below the templates transit line in alignment with the existing commercial / office located on the east side of the site. The residential areas are also in alignment with the existing residential subdivision to the west and on the north side of Poplar Avenue.

Figure 43 – TOD Template Overlay



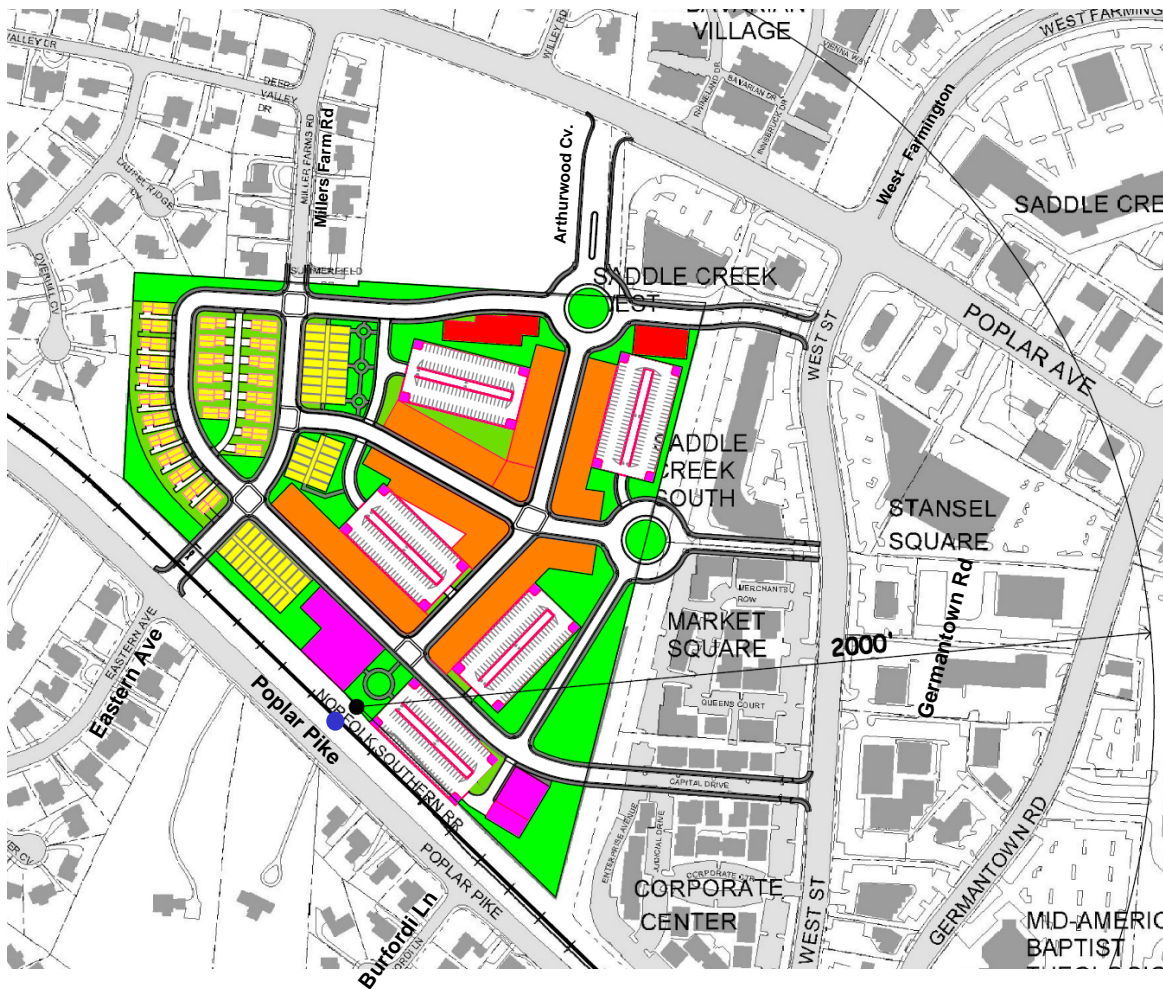
Aerial Photo: Germantown GIS Data Base

Figure 44 – Rotation of TOD Template Overlay



Aerial Photo: Germantown GIS Data Base

Author's Conceptual MUD-TOD Site Plan (Figure 45)



- Residential
- Office Uses
- Mixed Uses
 - Commercial
 - Office
 - Residential
- LRT Stop
- Public Use Structure
- Public Space
- Proposed Streets
- Possible Pedestrian Bridge

Table 6 – MUD-TOD Plan Data

MUD-TOD Plan Net Density¹

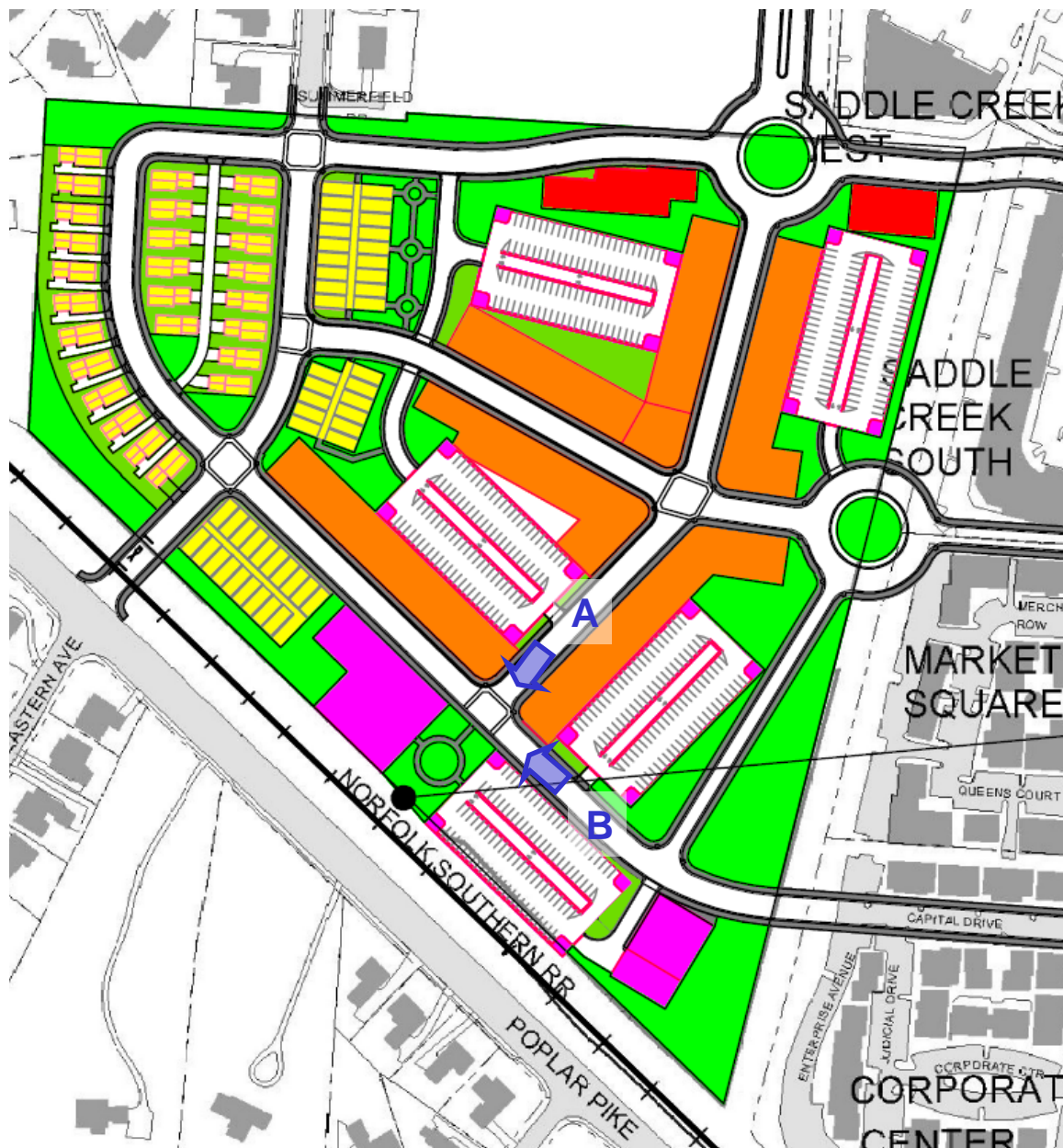
- ❑ Commercial – 229,254 Sq. Ft.
(0.25 floor area ratio)
- ❑ Office – 253,546 Sq. Ft.
(0.27 floor area ratio)
- ❑ Residential – 684 units
(32 dwelling units per acre)
 - Apartments – 580 Units
 - Detached Homes – 26 Units
 - Condominiums – 78 Units

Vicinity Map: Germantown GIS Data Base

Note:

1. Net Density excludes roadway system from the overall site area.

Author's Conceptual MUD-TOD Site Plan
(Figure 46)



Vicinity Map: Germantown GIS Data Base

Figure 47 – View A – Looking south down the proposed extension of Arthurwood Cove and illustrating the following MUD-TOD Guidelines:

- Wide, Well Lit and Protected Paths
- Community Gathering Places
- Plazas
- Trees, Planter, Benches, Awnings, and Architectural Features to Improve the Pedestrian Environment



Figure 48 – View B – Looking west from the proposed street from Corporate Center that provides access to West Street and illustrating the following MUD-TOD Guidelines:

- Good Lighting
- Visible and Easily Accessible Entrances
- Human Scale Architecture
- Residential, Office, Retail, and Public Uses Within Walking Distance
- Building and Entrances Oriented Along the Street



The design of a transit oriented development has the goal of creating a sense of place in that mixed-use development, sustainability, and connectivity are achieved through the selection of a specific site and the implementation of Development Guidelines.

A modification of Calthorpe's Transit Oriented Development template (Calthorpe, 1993) is overlaid on an aerial photograph of the subject site. The template is rotated to align the Norfolk Southern Railroad with Calthorpe's transit line. The transit station is placed on the ridgeline that dissects the property. The site was configured so that it would be a viable and sustainable site even if the transit station were not built in the immediate future. The impact on the surrounding land use will be diverse. The most significant impact on the surrounding area will be in the form of traffic. Construction traffic will have to access the site via existing streets causing potential pavement failures and an increase in heavy-duty vehicular traffic. An increase in traffic is to be expected from people who will work and live in the immediate area and by people that would use the park-and-ride parking garage. A positive impact that traffic will have on the site is that the proposed streets will serve as connector streets to the existing street system that surrounds the site. As the proposed development is connected to the surrounding area by new street connections, pedestrian access will also become easier since the site is designed to be pedestrian friendly.

Mixed Use District Transit Oriented Development Guides allow for flexibility, sustainability, and the incorporation of a potential LRT stop in a development of a project in the area of the major transportation nodes in Germantown. If the site around the major node of Poplar Avenue and West Street were to develop following the Mixed Used District Transit Oriented Development Guidelines a sustainable development would be created until the time Light Rail Transit is instituted and an LRT station is built. The MUD-TOD guidelines provide a means by which the site can be more fully developed to the site's potential. The site's design should allow for the inclusion of an LRT station along the Norfolk Southern Railroad in the southern portion of the property. This can be accomplished by the inclusion of various office/retail buildings and the construction of a public parking facility located in the area around the highpoint of the site at the railroad.

The concept plan that offers the greatest benefit to the City of Germantown is the MUD-TOD concept plan. The MUD-TOD site offers a means by which greater density can be achieved in the development of the site. This advantage can be seen in the comparison of the three conceptual site plans as illustrate in the table below. By developing the site with the greater densities, the site becomes self-sustaining and a thriving development that will draw people to it to live, work, or recreate.

While not entirely supportive of LRT and MUD-TOD, the SmartCode plan (Lawrence Group 2007) does offer potential as a TOD site. The combined office and commercial uses yield a net density of a 0.27 FAR, which is close to the recommended minimum as established by Calthorpe (1993). The SmartCode plan residential uses require the amount be doubled at a minimum to be in the neighborhood of the recommended minimum density of 15 DUA. The SmartCode plan does provided public space that is at the recommended minimum of 5% of the land used. The SmartCode plan provides an excellent network of connectivity with the street network that is proposed.

Table 7 – Concept Plan Comparison

	Status Quo "OC" Zoning	SmartCode	MUD-TOD	Typical Urban TOD ¹	
				(minimum)	(maximum)
Net Site Area					
Acres	30.65	40.40	21.24	144	288
Square Feet	1,335,114	1,759,824	925,214	6,280,000	12,560,000
Land Use (sq. ft.)					
Office	500,000	175,000	253,546	1,884,000 ⁵	8,792,000 ⁵
Density ² (FAR) ³	0.37	0.10	0.27	0.35	0.70
% of Use	37%	10%	27%	30%	70%
Commercial (sq. ft.)	0	305,000	229,254	1,884,000 ⁵	8,792,000 ⁵
Density ² (FAR) ³	0	0.17	0.25	0.30	0.70
% of Use	0%	17%	25%	30%	70%
Residential (units)	0	285	684	2,163	3,460 ⁶
Density ² (DUA) ⁴	0	7	32	15	24 ⁶
% of Use	0%	17%	48%	20%	60%
Use Area (sq. ft.)				1,256,000	7,5360,000
Public Space (sq. ft.)	0 ⁷	113,750	260,373	314,000	1,884,000
% of Use	0%	6%	28%	5%	15%

Notes:

1. Calthorpe 1993. Range area varies from half circle to full circle. In area provided, the 2000' distance also includes existing residential and commercial uses that are secondary to the proposed commercial core of the MUD-TOD site.
2. Net Density: the total number of units divided by the site area (area for streets and sidewalks excluded)
3. Floor Area Ratio (areas for streets and sidewalks are excluded)
4. Dwelling Units Per Acre (space dedicated to site circulations are excluded)
5. Calthorpe (1993) does not specify between office and commercial land uses. He lists both under the employment land use.
6. Varies based on site conditions
7. Public space is not required of developments in the "OC" Zoning District.

6.0 Conclusion

Guidelines for mixed-use development along the proposed regional rail route along the East Memphis, Germantown, and Collierville route encourage mixed-use development at future transit stops that will emphasize sustainability and connectivity. MUD-TOD guidelines allow for flexibility, sustainability, and the incorporation of a potential LRT stop in a development. Implementation of the guidelines in a development around the major node at Poplar Avenue and West Street prior to the establishment of Light Rail Transit (LRT) station will result in a sustainable development.

The following items are given as a tool to assist in meeting the goals of the MUD-TOD guidelines. First, the additional modifications to the SmartCode need to add MUD-TOD as an allowable use in the Transect Zoning Districts. This will allow the City of Germantown to capture benefit of regional mobility through increased development. Second, illustrations should be placed in SmartCode that reflect the desired outcome of the guidelines.

The implementation strategy for adopting the MUD-TOD guidelines follows a three-step process. The first step is to receive Planning Commission approval for the guidelines at the Planning Commission's monthly meeting. The second step is to receive Design Review Commission Approval at the Design Review Commission's monthly meeting. The final step is to get the Board of Mayor and Aldermen approval through the adoption of the MUD-TOD guidelines as part of the zoning regulations for the Transect Zoning Districts.

Once implemented the guidelines will need to be marketed to real estate developers and to the citizens of the City of Germantown. To encourage the development of the site with the adopted guidelines is to be proactive in anticipation of what MATA will do in the future. By doing so, the City of Germantown can set the president for LRT station design and development for transit stops along the entire LRT system. The development of the site will also encourage residual growth in the central business core area as designate in the Germantown Smart Growth Plan (Lawrence Group 2007), which in turn increase the commercial tax base of the City and helps to minimize residential property tax increases. This creates a scenario where everyone benefits from the finished product.

The final recommendation is that an additional study be performed for the inclusion of the Forest Hill-Irene Road – Poplar Pike node as a future site where MUD-TOD guidelines can be implemented for an LRT station in anticipation of the regional rail East Memphis, Germantown, and Collierville route installation. LRT station and transit development can impact the City of Germantown in many ways. MUD-TOD Guidelines will assist the community in making the impact of LRT on the community a positive one. The analysis illustrating a mixed use district transit oriented development in Germantown reveals that MUD-TOD guidelines will promote and support various forms of transportation, economize the land use, create a sense of place, and provide for mixed uses.

In a best-case scenario, all of the recommendations would be implemented allowing the community to learn, grow and thrive. With the MUD-TOD incorporated into the transit stop at the Arthur Property, the entire community can be strengthened as a result and ease the concerns of the neighborhood. Safety would be promoted by a stronger sense of belonging and community. This sense would come from the vacant properties being occupied and contributing to the stability of the community. Rundown property would be renovated through revitalization. Both will result in a stabilized if not an increase in property values because the area will then become a desired place to live, work, and play.

7.0 References

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Appendix A – Regional Transit Plan

With the suburbanization of Memphis, East Shelby County traffic congestion has increased causing frustration on the part of commuters during the morning and evening rush hours. The connecting of Downtown Memphis with the rest of Shelby County via Light Rail Transit (LRT) has been examined in four reports given to the city of Memphis and Memphis Area Transit Authority (MATA) since 1994. Proposals made over the past nine years to develop a plan of action by MATA. In addition to the four reports the published map showing the Memphis MPO plan for future transportation was developed (Briley, 2003).

From a planning perspective, if Memphis continues to grow in a manner that promotes sprawl, there will be a need for investment in roadway construction and maintenance. As traffic congestion increases so will the air pollution problems. This will result in higher emission standards increasing the cost of transportation and encourage the use of a non-polluting transportation system such as LRT.

For the long term success of an LRT system the Task Force found that transit system friendly land use planning must be implemented. Three steps were established to achieve this. First, identify where special Transit-Oriented Development (TOD) zoning is required. TOD is a concept where high and moderate density housing, complimentary public uses, jobs, retail, and services are concentrated in mix-use developments along the transit system a strategic locations. Second, enhance infill development in the existing city. Third, in suburban areas guide the development toward future use of transit systems.

The Task Force recommended that it be turned into a Steering Committee to begin working on the preparation of a detailed program in line with the Federal Transit Administration (FTA) guidelines. The Task Force estimated a five to eight year time frame to be ready for construction and an additional 3 years for construction. The Task Force turned Steering Committee would begin assembling the necessary local and regional political support, applying for a Congressional appropriation to begin system planning, and overseeing the efforts of OPD and MATA in the study of ridership and the preparation of a Regional Transportation Plan (1994).

There were three growth forecast alternatives prepared in the study (Kaiser 1997).

1. Stable City/Expanding Suburbs Alternative – This alternative features a low-density urban setting with dispersed development.
2. Neighborhood Renewal Alternative – Existing developed areas would be stabilized and increased infill would be used to foster a deduction of approximately 20% in the amount of land consumed around the urban fringe.
3. Light Rail Corridor Development Alternative – Intensive development would be supported in the urban core and along the corridors of a light rail system.

The following all hold an influence over the growth patterns in the city: Households, Employment, Major Activity Centers, Transit Dependant Households, and High Density Neighborhoods.

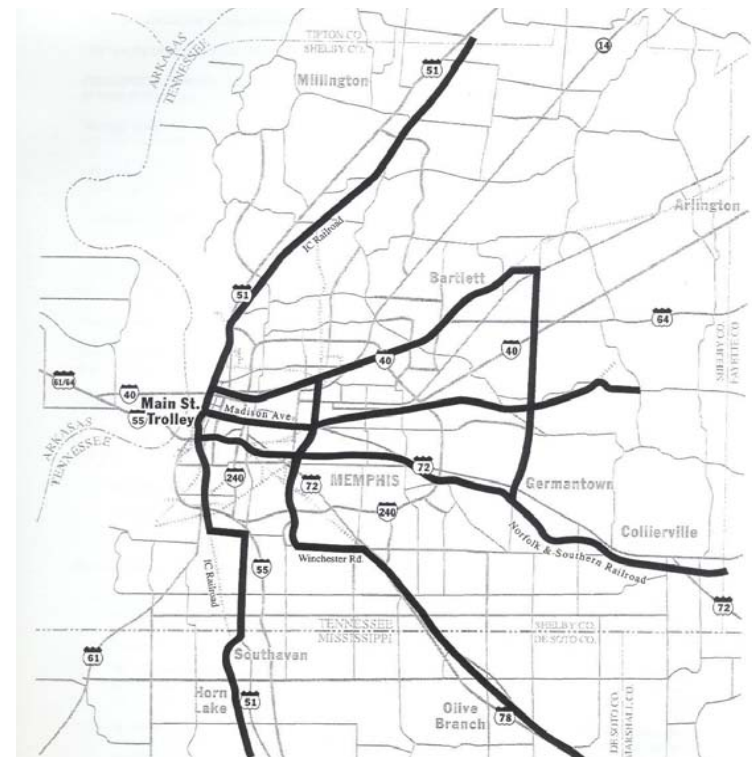


Image: Memphis Area Transit Authority

Of the seven corridors studied, the East Memphis / Germantown / Collierville, Frayser / Millington, and Whitehaven / Mississippi corridors were determined to have investment potential for LRT by 2020. A Major Investment Study (MIS) is the next step required in the development process. Locally Preferred Alternative (LPA) will result from the MIS. As a federal requirement an Environmental Impact Statement (EIS) must be prepared.

Kaiser recommends the incorporation of park-and-ride lots at appropriate center locations. The recommended transit centers are Central Station, North End Transit/Parking Facility, Southeast Memphis, Raleigh, East Memphis, Southwest Memphis, Cordova, Frayser, and Medical Center. The Medical Center is to be connected to the Medical Center Rail Extension. It is also recommended MATA's bus services be expanded to compliment the LRT system. Increased service is recommended for East Memphis, Cordova, Bartlett, Collierville, Raleigh, Millington, West Memphis, Southaven, Horn Lake, and Olive Branch.

Transit Oriented Development (TOD) is recommended to encourage development around proposed station areas. TOD has a centrally located station/stop at a core commercial area and is surrounded by residential development with employment opportunities readily available. The TOD depends mainly on private sector interest to develop properly.

Seven preliminary alignments were conceptualized. The seven alignments signified a series of potential solutions that were trying to achieve the following six objectives (Parsons 2002):

1. Connect the Downtown to the Airport;
2. Connect major activity centers, including the rail line in the Medical Center;
3. Serve residential areas including transit dependent enclaves;
4. Use existing rights-of-way, including privately held railroads and utility alignments;
5. Identify the most direct route between the major destinations: and
6. Provide a path suitable for the three competing transit modes: BRT, LRT, and Monorail.

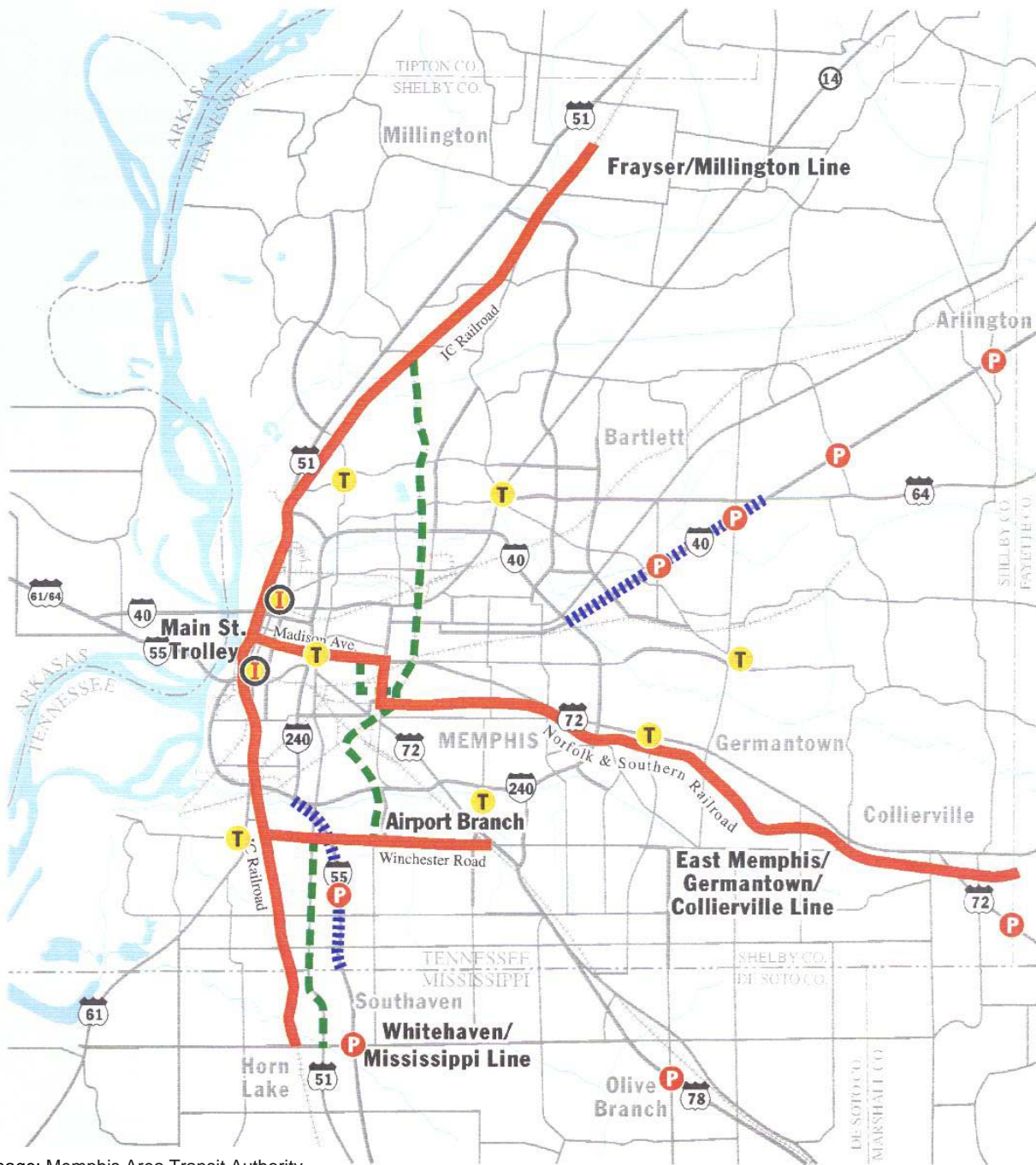
At a technical workshop, a committee took the seven alignments, a set of combined alignments, and the transit technologies and reduce the choices to LRT and four alignments. The four alignments are Alternative 1, Alternative 2A, Alternative 2B, and Alternative 3. Each of the alignments uses existing rights-of-way from streets and rail.

To help alleviate the congestion and pollution caused by the congestion, MATA began a process ten years ago to introduce a more reliable form of mass transit in the Memphis area: LRT. Through the four studies examined, it has been found that MATA is progressing on schedule with their desire for an LRT system to connect the entire county to downtown Memphis. This action on MATA's part is a vision gained by visiting other metropolitan areas with similar LRT systems. It was found that MATA is currently in the Phase 3 study to finalize the route selection for the first leg of LRT in Memphis. This report is not yet published. There are, however, lingering questions as to whether or not Memphis can produce the ridership to fully support an LRT system that should be answered in the Phase 3 study (Briley, 2003).



Image: Memphis Commercial Appeal

LRT passenger cars similar to the proposed train to be used for MATA's Downtown-Airport route.



Light Rail

Light Rail Alternatives

HOV Lanes



Intermodal Terminals

Transit Centers

Park and Ride Lots

Memphis Regional Transit Plan

Appendix B – The Germantown Vision 2020

The Germantown Vision 2020 Plan is made up of twenty-six (26) goals. Each goal has several objectives. The goals are broken into different sections depending on which city department it falls under. Of the 26 goals, five were chosen to serve as the foundation for the City's recent Smart Growth Plan for the Central Business District. The goals chosen and associated objectives are listed below.

GOAL 7

Redevelopment of the Heart of Germantown Objectives

1. Mixed-use (residential and nonresidential) development in the heart of the City area
2. Strong retail businesses and office development for professional services
3. People living in the heart of the City area lofts, above business condos, townhouses
4. Pedestrian friendly layout linked to Citywide path/trail system
5. Mid-rise buildings with mixed uses that are attractive and inviting for people
6. Creating a sense of place for the community

GOAL 8

Vibrant Quality Retail Economy Objectives

1. Shopping centers that are attractive, safe and are inviting to customers
2. Competitive and distinctive retail businesses with convenient store hours tailored to Residents and attracting shoppers from other cities
3. No empty storefronts (100% occupancy rate)
4. Retail businesses generating revenues for the City helping to balance our tax base
5. Minimal sales tax leakage to other cities and states with residents shopping in Germantown
6. Retail businesses contributing to the Germantown community through resources and partnerships

GOAL 14

Connectivity and Ease of Movement Objectives

1. Effective road system for automobiles
2. Traffic design management and control facilitating movement within and through Germantown
3. Well maintained major roads and collector streets
4. Readable, attractive regulatory signs and street name signs
5. Safe streets through effective enforcement of traffic and speed laws (zero tolerance)
6. Adherence to the Major Road Plan in development plans and policy decisions

GOAL 19

Recreation and Entertainment Opportunities for an Active Lifestyle Objectives

1. City programs and services responsive to changing leisure time and recreational activity trends and residents' needs
2. Top-quality recreation and athletic venues, programs, and services offered by Parks and Recreation and by private institutions and schools
3. Team sports available to all residents with quality athletic fields and practice facilities for recreational leagues, competitive leagues and tournaments
4. Quality restaurants and outlets for all residents for social interaction and connecting with people
5. Variety of choices for recreation and entertainment offered by the City and private sector
6. Evening entertainment venues offering music and live performances
7. Recreational and athletic venues for all ages offered by the Germantown Centre

GOAL 20

Cultural and Arts Enrichment

Objectives

1. Germantown Performing Arts Centre – an entertainment venue providing year-round programs, performances, and events for Germantown residents and the region
2. Range of comprehensive cultural arts performances, programs, and services offered by the Germantown Performing Arts Centre, Library and Parks and Recreation
3. Residents having improved access to arts and cultural performances, programs, and venues in the region
4. Individuals, businesses and organizations donating to support arts and culture
5. The City through the Library, Germantown Performing Arts Centre and Parks and Recreation, partnering and supporting arts and cultural organizations
6. Visual public art throughout the City, City facilities and public spaces

Source: Germantown Vision 2020