TRANSPORTATION

Assessment of the Existing Transportation System

The transportation assessment portion of the Spring Hill Comprehensive Plan provides an overview of the current transportation network within Spring Hill's Urban Growth Boundary (UGB), or the study area. All forms of transportation, including highway, air, rail, and bicycle/pedestrian systems were evaluated to assess the adequacy of the existing transportation network to serve future travel demands. The safety of the transportation system was also a main consideration while assessing opportunities for improvements to transportation in the city.

EXISTING STREET AND HIGHWAY SYSTEM

This section provides an overview of the existing roadway network in Spring Hill, including a discussion of functional classifications, traffic volume, levels of service, and crash data. Traffic volumes obtained from TDOT count stations within the study area and the most recent traffic counts from the City of Spring Hill provided the basis for the existing conditions analysis. Evaluating the existing condition of the City's roadway network helped identify roadway deficiencies and transportation projects to address congestion, safety, and other travel related issues.

The existing conditions analysis was conducted for all functionally classified routes within the city's UGB. Some of the more frequently traveled routes in the study area include I-65, SR 396 (Saturn Parkway), US 31, US 431 (Lewisburg Pike), and SR 247 (Duplex Road). All of these routes provide connections that promote the movement of people, goods, and services between Spring Hill and the rest of the region.

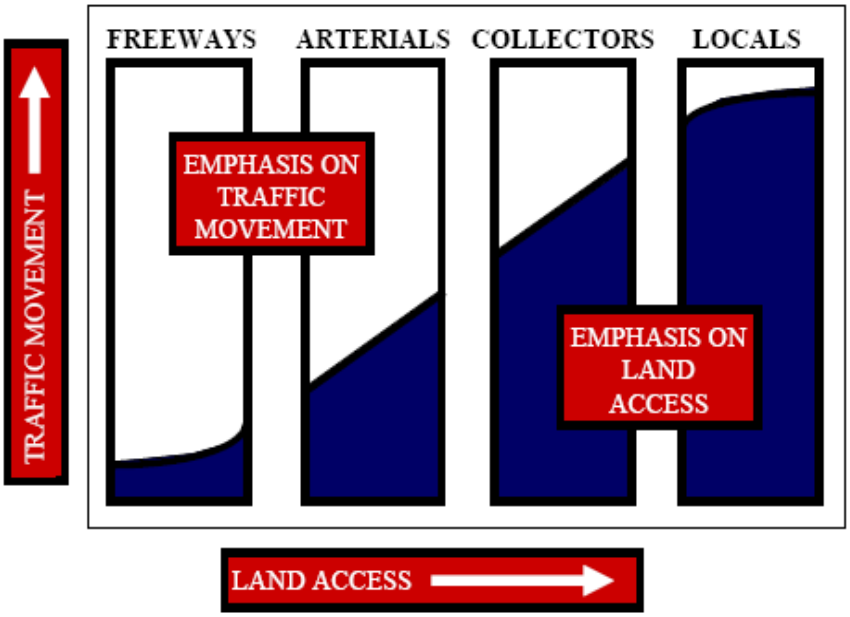
Functional Classification

The existing roadway facilities in Spring Hill are each classified according to the amount of access and mobility they provide, or how the road *functions*. According to the Federal Highway Administration (FHWA), functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. It is a hierarchical organization of streets and highways that facilitates the safe and efficient operation of vehicles along different types of facilities. It then becomes necessary to determine how travel can be channeled within the transportation network in a logical and efficient manner using these facilities. Functional classification defines the nature of this channelization process by defining the role that any particular road or street should play in serving the flow of trips through the highway network.[1]

Figure 4-1 below shows schematically how various street classifications relate to each other in terms of movement and access. As land access increases, traffic movement decreases on the lower classified roadways and vice versa – as land access decreases, traffic movement increases along the higher classified roads.

[1] http://www.fhwa.dot.gov/planning/fctoc.htm

Figure 4-1: Traffic Movement and Land Access



The federal functional classification of existing facilities is required in order for a roadway to be eligible for federal funding under current transportation legislation. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) states that a roadway must be "functionally classified" as a collector or higher to be eligible for federal funds designated for roadway improvement projects. The functional classification of existing facilities is also significant because it specifies the desired amount of access control, or locations where vehicles can enter or leave a roadway. When there is no access control, intersecting roads or driveways may connect to the mainline at any point. Typically, local roads have no access control. With partial control of access there is minimum spacing of access locations. With full access control, connections are only allowed at major crossroads – such as interchanges along an interstate. Full or partial control of access helps reduce traffic conflicts.[2] Following is a brief description of functional classes of roadways and examples of each in Spring Hill.

Freeway

A divided arterial highway for through traffic, with full access control, high speeds, and grade separation at major intersections. I-65 and SR 396 (Saturn Parkway) function as freeways in Spring Hill.

Arterial

A class of road serving major traffic movements (high-speed, high volume) for travel between main points of interest. Arterials emphasize a high level of mobility for through movement. While they may provide access to abutting land, their primary function is to serve traffic moving through the area. Therefore, arterials require a much higher level of access control than collectors or local streets. US 31 and US 431 are examples of arterials in the study area.

Collector

In rural areas, a route that serves intra-county rather than statewide travel. In urban areas, a street that provides direct access to neighborhoods and arterials. As their name suggests, collector roadways have the primary purpose of collecting traffic from local roadways and distributing it to its destination or to an arterial roadway. Collectors offer a compromise between mobility and access. Duplex Road, Buckner Lane, and Buckner Road are examples of Spring Hill collectors.

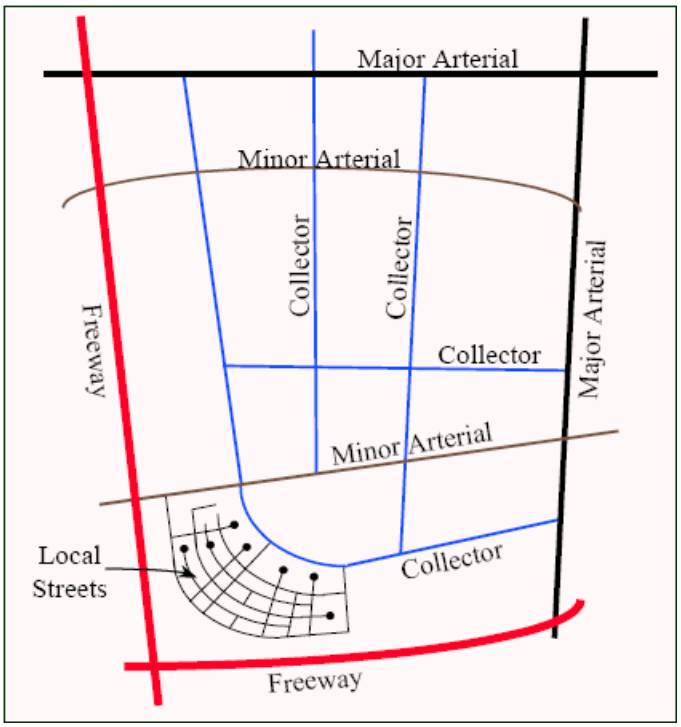
[2] http://www.tdot.state.tn.us/sr475/glossary.htm

Local Street

Local streets are not considered major roadways. Their primary function is to provide direct access to land with little emphasis on the movement of through traffic. Belshire Way, Denning Lane, and Derryberry Lane are examples of local streets in Spring Hill.

This plan focuses on Spring Hill's functionally classified roads. These roadways have the greatest impact on the transportation system, as they are primarily intended to move traffic and have less emphasis on land access than local roads. In contrast, local roads are primarily intended to provide access to land as illustrated above. As indicated in Figure 4-2 below, a functional roadway system facilitates a progressive transition in the flow of traffic from the provision of access to the provision of movement. Freeways and arterial facilities primarily provide the function of moving vehicles while collector and local streets concentrate more on providing access to property.

Figure 4-2: Roadway Functional Class System

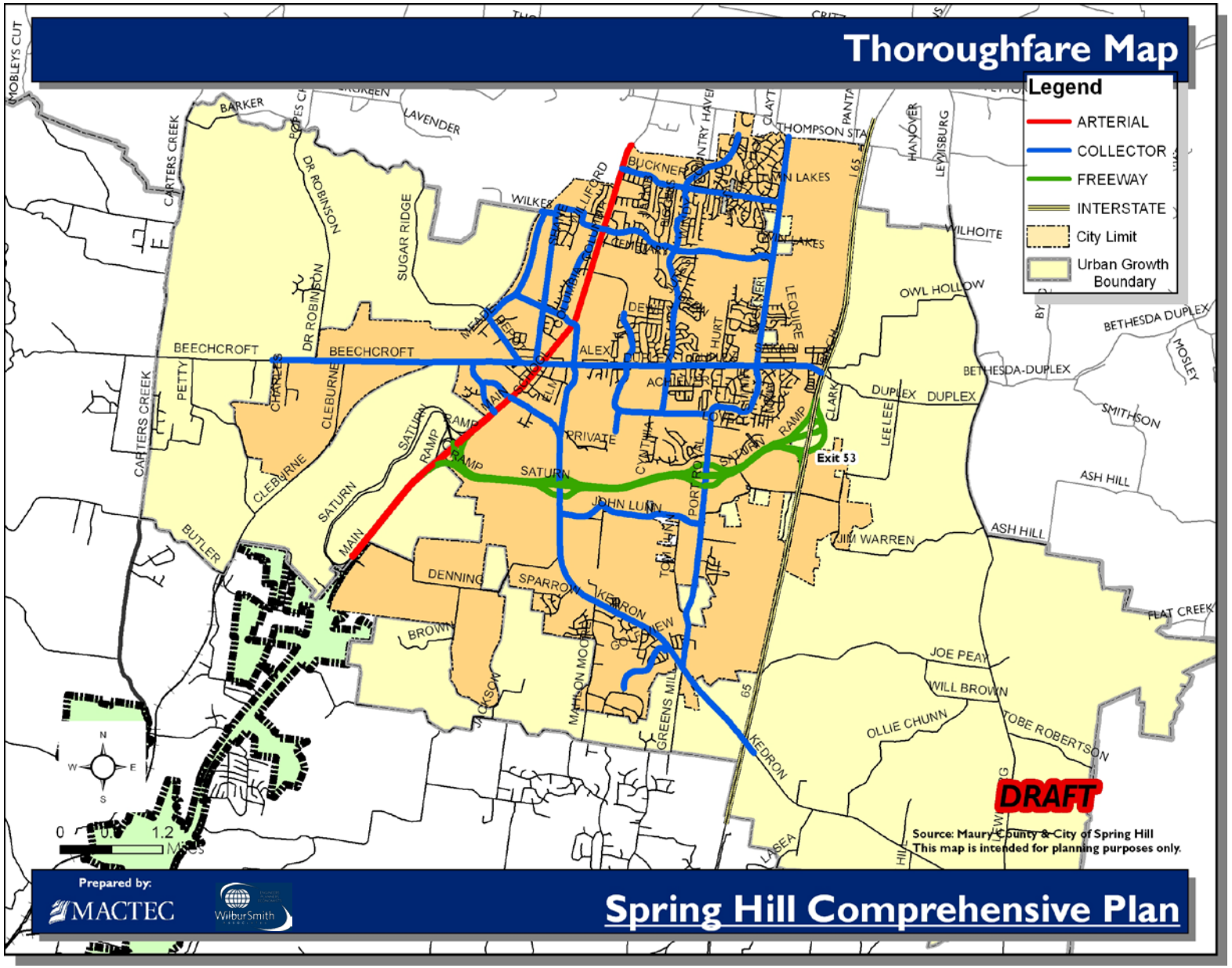


A list of Spring Hill's existing roadway functional class and their existing number of lanes is provided in Table 4-1. Figure 4-3 illustrates Spring Hill's functionally classified roadways.

Table 4-1: Existing Roadway Functional Class & Number of Lanes

SPRING HILL ROADS		
ROUTE	**FUNCITONAL CLASS**	**NUMBER OF LANES**
I-65	Interstate	4
SR 396 / Saturn Parkway	Freeway	4
SR 6 / US Hwy 31 / Main Street / Columbia Pike	Arterial	3 Lanes from county Line to Kedron Road
SR 6 / US Hwy 31 / Main Street / Columbia Pike	Arterial	4 Lanes from Kedron Road to SR 99/US 412
SR 247 / Beechcroft Road / Duplex Road	Collector	2
Buckner Lane	Collector	2
Buckner Road	Collector	2
Campbell Station Parkway / Stewart Campbell Point	Collector	2
Commonwealth Drive	Collector	2
Depot Street	Collector	2
John Lunn Road / Royal Park Boulevard	Collector	2
Kedron Parkway	Collector	2
Meadow View Drive	Collector	2
New Port Royal Road	Collector	2
Old Kedron Road	Collector	2
Old Military Road	Collector	2
Port Royal Road	Collector	4
Ray Williams Drive	Collector	2
Stephen Yokich Parkway / Town Center Parkway	Collector	2
Sunflower Drive	Collector	2
Wilkes Lane	Collector	2

Figure 4-3: Existing Roadway Functional Class Map



Traffic Volumes

Spring Hill's traffic history is provided by the Tennessee Department of Transportation (TDOT) and the City of Spring Hill's Public Works Department. Each year, TDOT publishes Annual Average Daily Traffic (AADT) counts for every county in the state of Tennessee. The counts are supplied by traffic count stations positioned along roadways throughout the state. The location of each station is determined by TDOT. There are currently 19 TDOT traffic counting stations located in the Spring Hill study area with traffic data through 2008. The City also collects traffic counts for 17 different locations throughout Spring Hill. The city's traffic data is available from 2003 through August 2009. Tables 4-6 and 4-7 list each count station within the study area and its respective traffic counts.

Spring Hill and TDOT traffic counts indicate that Interstate 65, Saturn Parkway, and SR-6/US-31 are the most traveled roadways in Spring Hill. Interstate 65 travels north and south through the eastern portion of the study area and connects Spring Hill to the cities of Franklin and Nashville, Tennessee to the north and Columbia, Tennessee to the south. Saturn Parkway provides an east-west connection from I-65 to SR-6/US-31, and SR-6/US-31 provides a north-south connection from the City of Columbia to the City of Franklin. Buckner Road, Kedron Road, and Port Royal Road are also heavily traveled.

The traffic count tables in the appendix also show the percentage of growth in traffic each year for all count stations. A summary of the roads that have seen the greatest increases and decreases in traffic are presented in Tables 4-2 and 4-3 below. Again, some stations have older data available than other locations. As Table 4-2 indicates, Port Royal Road, Kedron Road, and Jim Warren Road have seen the greatest increases in traffic in the last few years with 30.4 and 26 percent average annual growth rates, respectively. US 31 and SR 247 (Beechcroft Road and Duplex Road) have also seen large increases in traffic from 2000 to 2008.

Table 4-3 lists the roads that have seen the greatest decreases in traffic. While Interstate 65, Saturn Parkway, and Kedron Road experience significant amounts of daily traffic, the amount of traffic these routes experience has remained consistent and even decreased from 2000 to 2008 in some instances.

Table 4-2: Top 10 Traffic Growth Rates

Station Number	Route	Location	Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)										Avg. Annual Traffic Growth Rate (%)
			2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	
			-	59.7%	-7.3%	32.2%	6.3%	20.0%	13.1%	-	-	-	30.4%
SH Count		PORT ROYAL ROAD SOUTH OF HAYNES CROSSING	12522	7840	8457	6395	6018	5013	4432	-	-	-	
			-	-3.0%	56.8%	-	-	-	-	-	-	-	26.0%
SH Count		KEDRON ROAD 1 SOUTH OF PORT ROYAL	3414	3521	2245	-	-	-	-	-	-	-	
			-	26.0%	-	-	-	-	-	-	-	-	26.0%
SH Count		JIM WARREN ROAD @ PORT ROYAL	6899	5474	-	-	-	-	-	-	-	-	
			-	24.1%	12.0%	21.8%	10.4%	8.3%	19.0%	-	-	-	23.5%
SH Count		PORT ROYAL 1 @ WATER PLANT	4242	3419	3052	2506	2269	2095	1760	-	-	-	
			-	-	3.00%	9.1%	3.0%	10.8%	73.2%	-14.1%	16.7%	24.0%	22.0%
000010	SR247	DUPLEX ROAD EAST OF SPRING HILL	-	6681	6681	6126	5948	5369	3100	3607	3091	2493	
			-	-	-1.30%	14.7%	9.6%	62.1%	4.6%	4.5%	5.2%	1.3%	16.8%
000170	01907	KEDRON ROAD NEAR WILLIAMSON CO LINE	-	5934	6010	5239	4781	2950	2819	2697	2564	2531	
			-		-2.90%	8.6%	-4.1%	96.2%	11.3%	-3.8%	-2.7%	12.3%	16.5%
000006	SR247	BEECHCROFT - SPRING HILL	-	4591	4729	4353	4541	2314	2079	2162	2222	1978	
			-		-27.40%	35.6%	5.3%	96.1%	3.0%	16.4%	14.7%	-19.6%	15.6%
000126	SR247	DUPLEX ROAD NEAR MAURY CO LINE	-	4647	6399	4718	4482	2286	2219	1906	1662	2067	
			-	25.0%	10.3%	-5.6%	30.5%	6.1%	3.4%	-	-	-	14.4%
SH Count		DUPLEX ROAD @ CHAPMANS RETREAT	5222	4177	3788	4014	3077	2899	2805	-	-	-	
			-	-	-3.50%	8.8%	78.8%	4.7%	0.9%	11.5%	-2.0%	-1.1%	14.3%
000116	SR247	NEAR MARSHALL CO LINE	-	2330	2414	2219	1241	1185	1174	1053	1075	1087	

Source: Tennessee Department of Transportation and City of Spring Hill

Table 4-3: Bottom 5 Traffic Growth Rates

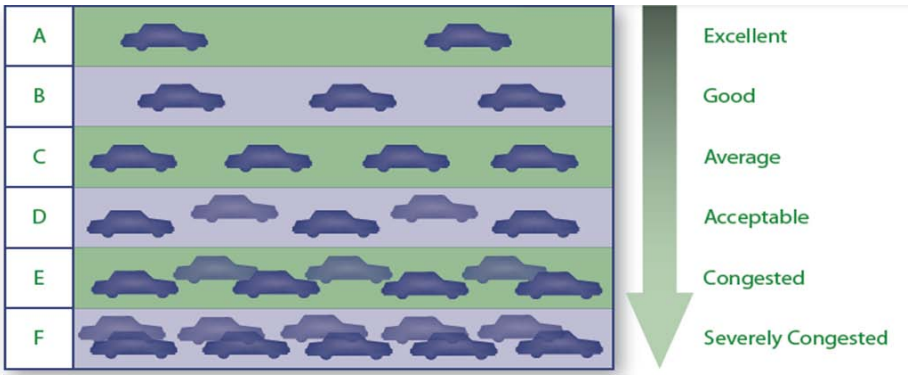
Station Number	Route	Location	Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)										Avg. Annual Traffic Growth Rate (%)
			2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	
			-	-4.7%	13.4%	-10.8%	-	-	-	-	-	-	-1.2%
SH Count		DENNING LANE AT KEDRON ROAD	242	254	224	251	-	-	-	-	-	-	
			-	-	-18.00%	-1.9%	6.3%	-2.8%	4.8%	0.5%	-7.3%	13.2%	-1.0%
000195	I0065	I-65 - SOUTH OF SATURN PKWY	-	24794	30221	30795	28970	29809	28433	28301	30539	26986	
			-	12.7%	-11.3%	-10.8%	11.3%	6.8%	-5.9%	-	-	-	-0.1%
SH Count		KEDRON ROAD AT ROYAL PARK ROAD	9850	8741	9860	11054	9936	9303	9885	-	-	-	
			-	-	-10.30%	7.4%	-7.7%	8.8%	3.6%	3.8%	-	-	0.7%
000237		KEDRON RD	-	1854	2067	1924	2085	1916	1849	1782	-	-	
			-	-	-16.60%	3.3%	8.2%	-1.1%	3.7%	3.4%	11.8%	2.0%	1.6%
000196	SR396	SATURN PKWY - E. OF KEDRON RD.	-	23877	28631	27704	25594	25880	24946	24135	21580	21152	
			-	-	14.50%	5.4%	-11.6%	10.9%	4.4%	-6.8%	-5.2%	9.0%	2.3%
000007	SR006	U.S. 31 - SOUTHWEST SPRING HILL	-	17634	15407	14621	16544	14920	14298	15343	16180	14847	
			-	-	3.60%	0.9%	0.5%	5.4%	2.3%	6.8%	0.3%	-	3.1%
000222	SR396	SATURN PKWY - E. OF PORT ROYAL RD.	-	29233	28212	27972	27826	26389	25792	24151	24076	-	
			-	-	-10.00%	5.8%	8.1%	-4.5%	5.7%	7.4%	10.6%	-	3.4%
000202	I0065	SOUTH OF SR-840	-	50001	55582	52517	48572	50836	48087	44753	40469	-	
			-	-31.1%	4.0%	29.1%	11.7%	1.8%	18.6%	-	-	-	4.1%
SH Count		DUPLEX ROAD - WEST OF MILES JOHNSON	5963	8655	8319	6446	5773	5671	4781	-	-	-	
			-	-	-4.90%	13.9%	0.6%	-1.6%	3.0%	13.8%	15.3%	-8.3%	4.1%
000072	SR106	U.S. 431 - SOUTH OF DUPLEX ROAD NEAR MARSHALL CO LINE	-	3878	4076	3579	3559	3618	3513	3087	2677	2919	
			-	-10.3%	33.8%	-6.0%	-	-	-	-	-	-	4.2%
SH Count		U.S. 31 - SOUTH MAIN @ TARGET SOUTH	9445	10534	7874	8378	-	-	-	-	-	-	

Source: Tennessee Department of Transportation and City of Spring Hill

Level of Service

Level of Service (LOS) is a term that is used to describe how well traffic operates on a roadway segment or at an intersection, and is based on the roadway's capacity and traffic volumes. Roadway capacity is defined by the functional class and number of lanes on a particular roadway. Volume is the actual number of vehicles on a roadway. LOS utilizes a letter system to indicate how well a roadway operates with letters ranging from "A" to "F" – "A" being excellent and "F" failing (see diagram). LOS C is generally acceptable for typical roadway function while LOS D is typically considered to be the minimum acceptable LOS in an urbanized area. Figure 4-4 is a graphic depiction of the Level of Service Concept:

Figure 4-4: Roadway Level of Service Concept



The Highway Capacity Manual generally describes each LOS as follows:

- A=Free flow
- B=Reasonably free flow
- C=Stable flow
- D=Approaching unstable flow
- E=Unstable flow
- F=Forced or breakdown flow

For comparison purposes, Table 4-4 lists the typical traffic volumes that can be accommodated for each LOS based on the roadway functional classification and number of travel lanes.

Table 4-4: Level of Service Threshold by Functional Classification

Typical Daily Service Volumes Related to LOS					
Road Type	**LOS A**	**LOS B**	**LOS C**	**LOS D**	**LOS E**
4 Lane Freeway	31,700	45,300	56,200	68,000	90,700
2 Lane Arterial Urban	6,500	9,400	11,600	14,000	18,700
3 Lane Arterial Urban	8,200	11,600	14,400	17,500	23,300
4 Lane Arterial Urban	10,700	15,400	19,000	23,000	30,700
5 Lane Arterial Urban	12,400	17,600	21,900	26,500	35,300
2 Lane Arterial Rural	8,400	12,000	14,900	18,000	24,000
3 Lane Arterial Rural	10,500	15,000	18,600	22,500	30,000
2 Lane Collector Urban	5,100	7,400	9,100	11,000	14,700

Typical Daily Service Volumes Related to LOS					
Road Type	LOS A	LOS B	LOS C	LOS D	LOS E
3 Lane Collector Urban	6,400	9,200	11,300	13,700	18,300
4 Lane Collector Urban	8,400	12,000	14,900	18,000	24,000
5 Lane Collector Urban	10,700	15,400	19,000	23,000	30,700
2 Lane Collector Rural	6,500	9,400	11,600	14,000	18,700
3 Lane Collector Rural	8,200	11,600	14,500	17,500	23,300

Most of Spring Hill's roadways are operating at a LOS C or better with the exception of US 31 at count station nine near the Duplex Road intersection, which operates at a level of service E. Buckner Road at Main Street and Kedron Road at Port Royal Road operate at levels of service D. A portion of US 31 at count station 7, just north of the Saturn Parkway interchange, I-65 north of the Duplex Road intersection, Kedron Road at the Battlefield, and Port Royal Road south of Hayne's Crossing operate at LOS C. All other roadways operate at LOS B and A. While LOS C is considered acceptable, the segments of US 31 operating at LOS C and worse are a concern as traffic continues to increase almost daily with the completion of new housing and commercial developments. Table 4-5 below provides current LOS data for each count station in the study area.

Table 4-5: Existing Level of Service Data

EXISTING MAURY COUNTY LEVELS OF SERVICE				
Route	TDOT Count Station	2008 AADT	2009 AADT	LOS
I-65	195	24,794	-	A
I-65	202	50,001	-	C
Kedron Rd	237	1,854	-	A
Kedron Rd	90	7,224	-	B
Kedron Rd	170	5,934	-	B
SR 247/Beechcroft Rd/Duplex Rd	6	4,591	-	A
SR 247/Beechcroft Rd/Duplex Rd	10	6,881	-	B
SR 247/Beechcroft Rd/Duplex Rd	116	2,330	-	A
SR 247/Beechcroft Rd/Duplex Rd	126	4,647	-	A
SR 247/Beechcroft Rd/Duplex Rd	169	2,387	-	A
SR 396/Saturn Parkway	196	23,877	-	A
SR 396/Saturn Parkway	222	29,233	-	A
SR 6/US Hwy 31/Main St/Columbia Pk	7	17,634	-	C
SR 6/US Hwy 31/Main St/Columbia Pk	9	19,258	-	E
SR 106/US Hwy 431/Lewisburg Pk	65 (North of Duplex)	5,168	-	A
SR 106/US Hwy 431/Lewisburg Pk	72 (South of Duplex)	3,878	-	A
SR 106/US Hwy 431/Lewisburg Pk	221	3,391	-	A
SR 106/US Hwy 431/Lewisburg Pk	236	3,657	-	A
SR 246/Carters Creek Pk	144	2,378	-	A
SR 246/Carters Creek Pk	4	2,329	-	A
Beechcroft Road at Railroad	-	-	5,033	A
Buckner Lane at Cameron Farms	-	-	6,755	B
Buckner Road at Main Street	-	-	10,403	D
Denning Ln at Kedron	-	-	242	-
Duplex Road at Chapman Retreat	-	-	5,222	B

EXISTING MAURY COUNTY LEVELS OF SERVICE				
Route	TDOT Count Station	2008 AADT	2009 AADT	LOS
Duplex Road west of Miles Johnson Pkwy	-	-	5,963	B
Greens Mill Road at Kedron Road	-	-	3,261	-
Jim Warren Road at Port Royal	-	-	6,899	-
Kedron Road at Battlefield	-	-	7,931	C
Kedron Road at Royal Park Road	-	-	9,850	D
Kedron Road at Water Treatment Plant	-	-	3,784	A
Kedron Road south of Port Royal	-	-	3,414	A
Mahlon Moore at Kedron Road	-	-	3,033	-
North Main at Target north	-	-	9,926	B
Miles Johnson Pkwy south of Duplex	-	-	1,723	-
Miles Johnson Pkwy north of Duplex	-	-	2,282	-
Miles Johnson Pkwy at Main Street	-	-	2,869	-
Port Royal south of Hayne's Crossing	-	-	12,522	C
Port Royal at Water Treatment Plant	-	-	4,242	A
South Main at Target south	-	-	9,445	B

Safety

Safety is a primary goal of all modes of transportation. The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) promotes more efficient and effective Federal surface transportation programs throughout the United States and established a new core Highway Safety Improvement Program (HSIP) that is structured and funded to make significant progress in reducing highway fatalities, incapacitating injuries, and crashes in general. Every year TDOT develops lists to help identify potential improvement projects that meet the intent of the HSIP requirements. One of these lists is an inventory of High Risk Rural Roads (HRRR). The HRRR list identifies sections of rural roads that are functionally classified as local, minor collector, or major collector that have experienced high numbers of severe crashes. HRRR improvements are generally lower cost projects, some of which can be repeated along relatively long sections of highway. There are no roadways in Spring Hill listed on the 2007 HRRR list.

AIR/RAIL

There is no air transport in the Spring Hill study area, and rail service in Spring Hill is strictly for freight transportation and not used for public transportation.

CSX Transportation is the only Class I railroad within Spring Hill. There is one primary rail yard in Spring Hill and it is located at the General Motors plant. CSX has a mainline rail that travels south from Nashville, paralleling US 31, and ends in Columbia, TN. At that point it connects to a short line operated by Tennessee Southern Railroad (TSRR). TSRR operates two tracks that travel south from Columbia. The western line leads from Columbia to a port facility in Florence, Alabama. The eastern line leads from Columbia to Pulaski, Tennessee.

Maury Regional Airport is the closest general aviation airport facility located in Maury County. It is located in Mt. Pleasant so is not within the study area. The airport has two runways, one that is approximately 6,000 feet long by 100 feet wide, and another that is approximately 2,000 feet long by 200 feet wide. It offers charter service for passengers and freight, aircraft maintenance, and car rental and limousine services. There are approximately 30 aircraft based at the airport and an average of nearly 80 aircraft takeoffs and landings per day.

BICYCLE/PEDESTRIAN FACILITIES

Bicycling and walking are becoming increasingly important modes of transportation for the City of Spring Hill as transportation costs continue to rise and alternative modes off transportation become increasingly important. To address this need, this plan is intended to help create a comprehensive, multi-modal strategy that includes bicycling and walking as integral parts of the transportation infrastructure. This section provides policy recommendations to take advantage of the many benefits that bicycling and walking can offer, such as greater mobility, less traffic congestion, cleaner air, and lower transportation costs.

Benefits of Bicycling and Walking

Bicycle and pedestrian facilities are great assets to any community. Not only do they enhance the aesthetics of an area, but they also serve as places where people can exercise, spend time with their family, and congregate to get to know their neighbors. The presence of these facilities alone helps to encourage community activity, which, in turn, enhances the safety and security of the community. In addition to these quality-of-life issues, bicycle and pedestrian facilities help meet some of the community's basic transportation needs. There is a growing population (such as children, senior citizens, the poor, the physically active, and the environmentally concerned) that either cannot or chooses not to drive and must rely on other forms of transportation. Spring Hill's population, in particular, is composed of relatively young residents with 11.4 percent under 5 years of age and 10.9 percent age 25 to 29 years.[3] Sidewalks and bikeways can provide safe, convenient, and free travel options for this population, as well as for the rest of the community. Other benefits of bicycling and walking are outlined below.

Greater Mobility

Every trip, regardless of mode, involves some form of pedestrian travel, whether it is walking from home to the grocery store, walking from a parked vehicle to the grocery store, or walking from the bus stop to the grocery store. Many of these types of trips are made out of necessity, so it is important that all citizens are able to access these essential locations even if they do not own an automobile. In fact, according the 2001 National Household Travel Survey (NHTS) one in 12 U.S. households does not own an automobile, and 12 percent Americans 15 years of age and older cannot, or do not, drive.[4] According the Bureau of Transportation, next to the automobile, bicycling is the second-most preferred form of transportation.[5] Providing safe, convenient, and attractive bicycle and pedestrian facilities provides desirable transportation alternatives to the automobile, thereby encouraging these types of trips and meeting the community's basic transportation needs.

Less Traffic Congestion

Traffic congestion is becoming an increasing concern for most communities. Traffic congestion results when the traffic demand on a street or roadway network is greater than the amount of traffic that that street or roadway network was designed to efficiently carry. In addition to interfering with mobility, traffic congestion results in driver frustration, wasted time, wasted energy, and pollution. Traffic congestion, as well as its negative impacts, can be reduced by incorporating bicycle and pedestrian facilities into the transportation network and by encouraging these alternative modes of travel. Converting a portion of motorized trips to bicycling and walking trips is a very realistic goal, especially when one considers that 40% of all trips are less than two miles in length.[6] This distance represents a ten-minute bike ride or a 30-minute walk for most people.

[3] Source: U.S. Census Bureau, 2005-2007 American Community Survey (http://factfinder.census.gov/servlet/STTable?_bm=y&-geo_id=16000US4770580&-qr_name=ACS_2007_3YR_G00_S0101&-ds_name=ACS_2007_3YR_G00_)
[4] http://www.bicyclinginfo.org/why/benefits_transportation.cfm
[5] http://www.bikeleague.org/resources/why/environment.php
[6] http://www.bikeleague.org/resources/why/environment.php

Cleaner Air

Approximately 60% of the pollution created by automobile emissions happens in the first few minutes of vehicle operation, before pollution control devices can work effectively. Because of this, shorter automobile trips are actually more polluting than longer trips on a per-mile basis. By converting a four mile round trip to bicycling, approximately 15 pounds of pollutants can be kept out of the air. These pollutants, which include carbon dioxide, carbon monoxide, and nitrogen oxides, are contributors to respiratory problems, cardiovascular problems, smog, and acid rain.[7]

Lower Transportation Costs

Owning and maintaining an automobile can be very expensive. According to the American Automobile Association (AAA, Your Driving Costs), the average cost of operating a sedan for one year is about $7,800. In contrast, the cost of operating a bicycle for one year is only about $120 (American League of Bicyclists), and walking is free.[8] By converting some automobile trips to bicycling and walking, families can eliminate the need for a car or, at least, a second car.

In addition to saving families money, bicycling and walking can also reduce transportation-related costs for communities. Bicycling and walking trips cause little, if any, wear and tear on roadways, and the infrastructure supporting these travel modes can usually be provided with less impact and at a lower cost than infrastructure for motorized travel. Bicycling and walking also require less space per trip than motorized travel. Converting automobile trips to bicycling and walking can reduce traffic congestion and postpone, or even eliminate, the need for roadway widening and construction projects.

Current Bicycle and Pedestrian Facilities and Planning Efforts

Currently, Spring Hill's bicycle and pedestrian facilities consist of sidewalks, multi-use trails in the City's parks and neighborhoods, and the roadway network. Each of these facility types are briefly described below.

Existing Sidewalks

Spring Hill's *Subdivision Regulations* require that five-foot wide sidewalks be constructed on at least one side of new streets that have 50-foot wide right-of-ways and on both sides of streets that have right-of-ways wider than 50 feet. This practice has resulted in sidewalks being constructed on at least one side of most streets in the City's newer developments. Because the sidewalks are localized within the individual developments, as opposed to connecting to other sidewalk systems, the existing sidewalk network primarily serves recreational users and is primarily intended for pedestrian use. The roadway design guidelines presented in the city's Major Thoroughfare Plan also recommend a five-foot sidewalk for all urban local, collector, and arterial street cross sections. Due to the differences in the traveling speeds of bicyclists and pedestrians, bicyclists should be discouraged from riding on sidewalks.

[7] http://www.bikeleague.org/resources/why/environment.php
[8] http://www.bikeleague.org/resources/why/environment.php

Existing Multi-Use Trails

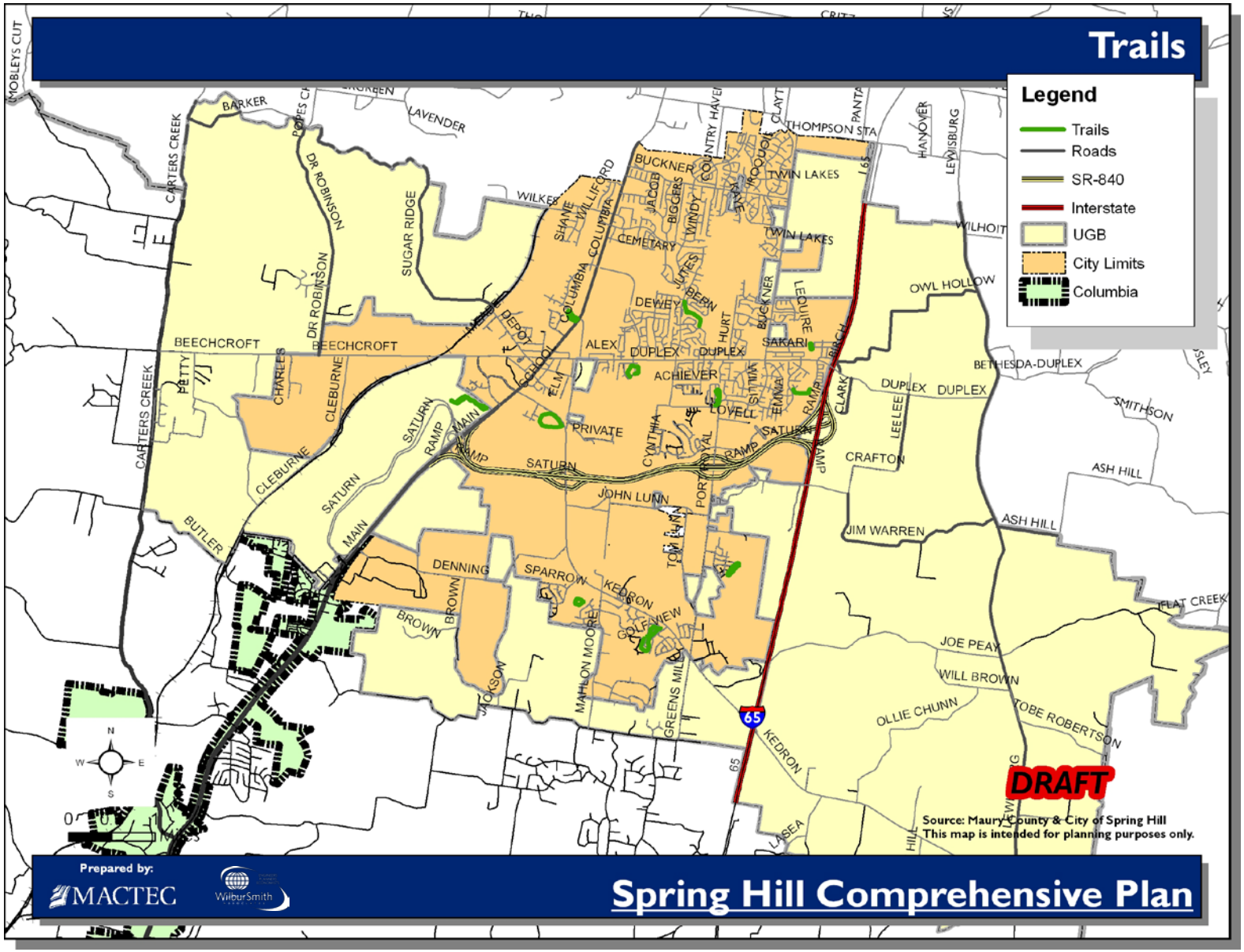
The City of Spring Hill has a significant acreage of parks and open space, and some of these areas include multi-use trails that can be used by bicyclists, pedestrians, and other non-motorized users. Although multi-use trails are excellent for recreational users and novice bicyclists, the City's trails are limited. Also, because the parks are primarily concentrated along US-31 instead of being embedded within the City's residential neighborhoods, many of the trail users must drive to the parks in order to use the trails. This lack of convenience can deter would-be trail users.

Existing Roadway Network

Although the City of Spring Hill does not have any designated on-street bicycle facilities, the area's roadways can provide safe, convenient, and direct routes for bicyclists. Typically, intermediate and expert cyclists prefer riding on roads instead of trails since these routes are more direct and since the movements of roadway users are more predictable than the movements of trail users. However, without dedicated on-road bicycle facilities, motorists may be less likely to share the road, and this safety concern may discourage some people from bicycling for transportation. Also, other safety issues, such as debris on the streets or inlet grates that are not bicycle-friendly, may discourage on-road bicycling.

Because the presence of well-designed bicycle and pedestrian facilities influences the decision to bike or walk for transport, these facilities help stimulate single-mode trips (such as a biking trip or a walking trip) as well as multi-modal trips (such as walking to a transit stop and then riding the bus for the remainder of the trip). As the recommended roadway projects move toward implementation, it is essential that bicycle and pedestrian facilities be considered as part of those projects in order to provide multiple modes of transportation for people in Spring Hill. It is also important that interconnectivity between residential and commercial areas becomes more prominent. The roadway design guidelines presented in the city's Major Thoroughfare Plan provide cross-section recommendations for four-foot wide dedicated bike lanes for urban collectors, rural collectors, and rural arterials.

Figure 4-5: Existing Trails



Bicycle and Pedestrian Needs

As Spring Hill's population continues to grow, so will its need for a connective network of bicycle and pedestrian facilities. To be proactive in this regard, it is recommended that the City of Spring Hill develop a bicycle and pedestrian plan for the area located within the City's Urban Growth Boundary and that this plan be coordinated with neighboring communities and jurisdictions. This plan should focus on providing connections between destinations, such as connecting residential developments, employment centers, retail centers, parks, and other activity centers.

The pedestrian plan should include recommendations for sidewalks and multi-use trails and should also consider providing safe street crossings that are compliant with the *American's with Disabilities Act*. Pedestrian support facilities, such as benches, pedestrian-scaled lighting, water fountains, restrooms, and information kiosks, should also be addressed in the plan, as well as sidewalk design considerations

The bicycle plan should include recommendations for both on-street facilities (such as bike lanes/shoulders, wide outside lanes, and bike routes) and off-street facilities (such as multi-use trails). Bicycle support facilities, such as bike racks and lockers, showers, lighting, and directional signage, should also be addressed in the plan, as well as bikeway design considerations.

It is anticipated that many of the recommended bicycle and pedestrian facilities can either be constructed as part of the road improvement projects that are identified in the City's Major Thoroughfare Plan or by private developers as development occurs within the area. For this reason, it is important that the City of Spring Hill establish a bicycle and pedestrian plan. Without an adopted plan, it may be difficult to incorporate bicycle and pedestrian facilities in future projects. The bicycle and pedestrian plan is intended to be used as a guide by local and state officials, as well as private developers, in planning and implementing sidewalks and bikeways within the City.

Table 4-6: Spring Hill Traffic Counts

TDOT TRAFFIC COUNTS

Station Number	Route	Location	Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)									Avg. Annual Traffic Growth Rate (%)
			2008	2007	2006	2005	2004	2003	2002	2001	2000	
				7.30%	10.30%	4.20%	21.80%	3.00%	9.90%	4.70%	-6.10%	11.2%
000004	SR246	NORTH OF JAMESON	2329	2171	1968	1889	1551	1506	1370	1308	1393	
				-2.90%	8.6%	-4.1%	96.2%	11.3%	-3.8%	-2.7%	12.3%	16.5%
000006	SR247	BEECHCROFT - SPRING HILL	4591	4729	4353	4541	2314	2079	2162	2222	1978	
				14.50%	5.4%	-11.6%	10.9%	4.4%	-6.8%	-5.2%	9.0%	2.3%
000007	SR006	SOUTHWEST SPRING HILL	17634	15407	14621	16544	14920	14298	15343	16180	14847	
				2.30%	4.6%	3.0%	31.3%	3.0%	8.0%	-7.0%	29.9%	11.8%
000009	SR006	NORTHEAST SPRING HILL	19258	18832	18007	17483	13311	12924	11965	12862	9902	
				3.00%	9.1%	3.0%	10.8%	73.2%	-14.1%	16.7%	24.0%	22.0%
000010	SR247	EAST OF SPRING HILL	6881	6681	6126	5948	5369	3100	3607	3091	2493	
				2.90%	0.6%	6.7%	10.9%	1.2%	6.5%	-7.3%	17.6%	5.5%
000065	SR106	N OF DUPLEX	5168	5021	4992	4680	4220	4170	3916	4226	3595	
				-4.9%	13.9%	0.6%	-1.6%	3.0%	13.8%	15.3%	-8.3%	4.1%
000072	SR106	SOUTH OF DUPLEX NEAR MARSHALL CO LINE	3878	4076	3579	3559	3618	3513	3087	2677	2919	
				-5.0%	7.9%	27.7%	3.0%	-6.2%	5.3%	6.0%	8.8%	6.7%
000090	01907	SOUTHEAST OF SPRING HILL	7244	7624	7068	5533	5372	5727	5437	5127	4714	
				-3.50%	8.8%	78.8%	4.7%	0.9%	11.5%	-2.0%	-1.1%	14.3%

Station Number	Route	Location	Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)									Avg. Annual Traffic Growth Rate (%)
			2008	2007	2006	2005	2004	2003	2002	2001	2000	
000116	SR247	NEAR MARSHALL CO LINE	2330	2414	2219	1241	1185	1174	1053	1075	1087	
				-27.40%	35.6%	5.3%	96.1%	3.0%	16.4%	14.7%	-19.6%	15.6%
000126	SR247	NEAR MAURY CO LINE	4647	6399	4718	4482	2286	2219	1906	1662	2067	
				5.40%	9.5%	6.0%	12.3%	1.7%	8.2%	-36.1%	47.7%	5.3%
000144	SR246	NEAR WILLIAMSON CO LINE	2378	2257	2062	1945	1732	1703	1574	2464	1668	
				11.20%	-8.1%	-0.6%	18.4%	1.0%	11.8%	6.7%	5.6%	6.6%
000169	SR247	NEAR WILLIAMSON CO LINE	2387	2146	2334	2347	1983	1964	1756	1646	1559	
				-1.30%	14.7%	9.6%	62.1%	4.6%	4.5%	5.2%	1.3%	16.8%
000170	01907	NEAR WILLIAMSON CO LINE	5934	6010	5239	4781	2950	2819	2697	2564	2531	
				-18.00%	-1.9%	6.3%	-2.8%	4.8%	0.5%	-7.3%	13.2%	-1.0%
000195	I0065	SOUTH OF SATURN PKWY	24794	30221	30795	28970	29809	28433	28301	30539	26986	
				-16.60%	3.3%	8.2%	-1.1%	3.7%	3.4%	11.8%	2.0%	1.6%
000196	SR396	SATURN PKWY - E. OF KEDRON RD.	23877	28631	27704	25594	25880	24946	24135	21580	21152	
				-10.00%	5.8%	8.1%	-4.5%	5.7%	7.4%	10.6%		3.4%
000202	I0065	SOUTH OF SR-840	50001	55582	52517	48572	50836	48087	44753	40469	0	
				0.233	0.03	0.073	-0.043	-0.108	0.349	-0.051		7.0%
000221		NEAR MARSHALL CO LINE	3391	2750	2670	2489	2601	2915	2161	2276	0	
				3.60%	0.9%	0.5%	5.4%	2.3%	6.8%	0.3%		3.1%
000222	SR396	SATURN PKWY - E. OF PORT ROYAL RD.	29233	28212	27972	27826	26389	25792	24151	24076	0	

Station Number	Route	Location	Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)									Avg. Annual Traffic Growth Rate (%)
			2008	2007	2006	2005	2004	2003	2002	2001	2000	
				6.80%	22.9%	3.0%	-21.3%	7.3%	24.6%			7.1%
000236		S. OF WILLIAMSON CO	3657	3423	2785	2704	3435	3202	2569	0	0	
				-10.30%	7.4%	-7.7%	8.8%	3.6%	3.8%			0.7%
000237		KEDRON RD	1854	2067	1924	2085	1916	1849	1782	0	0	

Table 4-7: Spring Hill Traffic Counts

Location		Annual Average Daily Traffic Volumes (vehicles per day) &Annual Traffic Growth Rates (%)							Avg. Annual Traffic Growth Rate (%)
		2009	2008	2007	2006	2005	2004	2003	
	Growth rate		27.9%	-27.2%	35.3%	-3.9%	-3.8%	8.6%	4.4%
BUCKNER LANE @ CAMERON FARMS	ADT	6755	5282	7260	5364	5584	5807	5347	
	Growth rate		5.2%	29.0%	-10.4%	0.5%	32.3%	0.5%	10.4%
BUCKNER ROAD @ MAIN STREET	ADT	10403	9885	7660	8545	8503	6425	6394	
	Growth rate		25.0%	10.3%	-5.6%	30.5%	6.1%	3.4%	14.4%
DUPLEX ROAD @ CHAPMANS RETREAT	ADT	5222	4177	3788	4014	3077	2899	2805	
	Growth rate		4.9%	0.5%	19.7%	-6.1%	6.9%	-0.7%	4.3%
BEECHCROFT ROAD @ RAILROAD	ADT	5033	4800	4778	3992	4251	3977	4005	
	Growth rate		-5.2%	25.2%	4.5%	25.0%	2.3%	2.0%	10.3%
KEDRON ROAD @ BATTLEFIELD	ADT	7931	8367	6681	6392	5115	4999	4899	
	Growth rate		12.7%	-11.3%	-10.8%	11.3%	6.8%	-5.9%	-0.1%
KEDRON ROAD @ ROYAL PARK ROAD	ADT	9850	8741	9860	11054	9936	9303	9885	
	Growth rate		-20.8%	30.0%	3.7%	12.8%	-7.5%	15.6%	4.8%
KEDRON ROAD 3 @ WATER PLANT	ADT	3784	4778	3674	3542	3139	3392	2933	
	Growth rate		59.7%	-7.3%	32.2%	6.3%	20.0%	13.1%	30.4%
PORT ROYAL SOUTH OF HAYNES CROSSING	ADT	12522	7840	8457	6395	6018	5013	4432	
	Growth rate		24.1%	12.0%	21.8%	10.4%	8.3%	19.0%	23.5%
PORT ROYAL 1 @ WATER PLANT	ADT	4242	3419	3052	2506	2269	2095	1760	
	Growth rate		-4.0%	0.0%	18.0%	2.8%	1.0%	9.2%	4.7%
MAHLON MOORE @ KEDRON ROAD	ADT	3033	3161	3162	2680	2607	2580	2363	
	Growth rate		-4.7%	13.4%	-10.8%				-1.2%
DENNING LANE @ KEDRON ROAD	ADT	242	254	224	251				
	Growth rate		12.2%	6.3%					9.6%
GREENS MILL ROAD @ KEDRON ROAD	ADT	3261	2906	2735					

	Growth rate		-3.0%	56.8%					26.0%
KEDRON ROAD 1 SOUTH OF PORT ROYAL	ADT	3414	3521	2245					
	Growth rate		-6.9%	22.9%	5.5%				6.9%
NORTH MAIN @ TARGET NORTH	ADT	9926	10667	8678	8222				
	Growth rate		-10.3%	33.8%	-6.0%				4.2%
SOUTH MAIN @ TARGET SOUTH	ADT	9445	10534	7874	8378				
	Growth rate		26.0%						26.0%
JIM WARREN ROAD @ PORT ROYAL	ADT	6899	5474						
	Growth rate		-31.1%	4.0%	29.1%	11.7%	1.8%	18.6%	4.1%
DUPLEX ROAD WEST OF MILES JOHNSON	ADT	5963	8655	8319	6446	5773	5671	4781	

Future Conditions

This section identifies future levels of service based on capacity analysis and provides proposed improvements for roadways in the Spring Hill study area. Improvements to the city of Spring Hill's transportation system will help to accommodate forthcoming increases in traffic and offer a safe and connected transportation system. The short and long-term transportation improvements presented in this section will work in conjunction with the comprehensive land use plan recommendations to meet the present and future needs for mobility and access as the city continues to grow.

FUTURE STREET AND HIGHWAY SYSTEM

This section provides an overview of the future roadway network for Spring Hill's Urban Growth Boundary (UGB), including a discussion of future traffic volumes and levels of service. Historic traffic volumes obtained from the Tennessee Department of Transportation (TDOT) and the City of Spring Hill provided the basis for the existing conditions analysis and helped identify roadway deficiencies. These deficiencies led to the development of transportation projects meant to address congestion and mobility issues. The future conditions analysis was conducted for all functionally classified roads within the study area.

Future Traffic Volumes

Spring Hill's traffic history is presented in the existing transportation section above and contains traffic counts from 19 TDOT traffic counting stations in the Spring Hill study area and 17 Spring Hill count stations. This information provides the basis for the traffic projections presented in this chapter (see Tables 4-12 and 4-13). Future year traffic volumes were derived out to the year 2030 by assuming an average annual growth rate from 2000 and 2001 to 2030. Annual growth rate values varied between .15 and 2 percent and assume a maximum 2 percent growth rate. Historic traffic counts from 2000 to 2008 are presented in Chapter X. Appendix X provides a traffic projections table that lists all of the count stations in the study area and the respective traffic counts showing the interim years of 2010, 2015, 2020, and 2025. This table also shows the percentage of growth in traffic projected each year to 2030. The roads that are projected to experience the greatest increases in traffic by 2030, based on the projected average annual traffic growth rate, are listed in Table 4-8 below.

SR 247, Port Royal Road, Kedron Road, and Jim Warren Road are expected to experience the greatest increases in traffic by 2030, with expected percent increases of 2.0 percent. This is a similar pattern to the historic traffic counts and suggests continued growth in these areas. Table 4-9 lists the roads that are projected to see the smallest increases in traffic – no routes were expected to see a decrease in traffic. Again, like the historic traffic counts indicate, even though Interstate 65, Saturn Parkway, and Kedron Road experience significant amounts of daily traffic, the amount of traffic these routes are expected to experience is projected to remain consistent through 2030.

Table 4-8: Top 10 Spring Hill Projected Traffic Growth Rates

Station Number	Route	Location	Projected Annual Average Daily Traffic Volumes (vehicles per day)							Projected Avg. Annual Traffic Growth Rate (%)
			2009	2008	2010	2015	2020	2025	2030	
000126	SR 247	NEAR MAURY CO LINE	- -	4647	4835	5338	5894	6507	7184	2.00%
SH Count		PORT ROYAL SOUTH OF HAYNES CROSSING	12522	- -	12772	14102	15570	17190	18979	2.00%
SH Count		PORT ROYAL 1 @ WATER PLANT	4242	- -	4327	4777	5274	5823	6429	2.00%
SH Count		KEDRON ROAD 1 SOUTH OF PORT ROYAL	3414	- -	3482	3845	4245	4687	5174	2.00%
SH Count		JIM WARREN ROAD @ PORT ROYAL	6899	- -	7037	7769	8578	9471	10457	2.00%
000006	SR 247	BEECHCROFT - SPRING HILL	- -	4591	4772	5256	5788	6375	7021	1.95%
000010	SR 247	EAST OF SPRING HILL	- -	6881	7152	7877	8676	9555	10524	1.95%
000116	SR 247	NEAR MARSHALL CO LINE	- -	2330	2422	2667	2938	3235	3563	1.95%
000170	1907	NEAR WILLIAMSON CO LINE	- -	5934	6168	6793	7482	8240	9075	1.95%
SH Count		BUCKNER ROAD @ MAIN STREET	10403	- -	10601	11647	12796	14059	15446	1.90%
SH Count		DUPLEX ROAD @ CHAPMANS RETREAT	5222	- -	5321	5846	6423	7057	7753	1.90%
SH Count		KEDRON ROAD @ BATTLEFIELD	7931	- -	8082	8879	9755	10718	11776	1.90%
000004	SR 246	NORTH OF JAMESON	- -	2329	2418	2657	2919	3207	3524	1.90%

Source: Tennessee Department of Transportation and City of Spring Hill

Table 4-9: Bottom 10 Spring Hill Projected Traffic Growth Rates

Station Number	Route	Location	Projected Annual Average Daily Traffic Volumes (vehicles per day)							Projected Avg. Annual Traffic Growth Rate (%)
			2009	2008	2010	2015	2020	2025	2030	
000195	I-65	SOUTH OF SATURN PKWY	- -	24794	24842	24964	25085	25208	25331	.10%
SH Count		DENNING LANE @ KEDRON ROAD	242	- -	242	244	246	248	250	.15%
000144	SR 246	NEAR WILLIAMSON CO LINE	- -	- 2378	2387	2408	2430	2452	2475	.18%
000222	SR 396	SATURN PKWY - E. OF PORT ROYAL RD.	- -	29233	29934	31761	33700	35757	37939	.19%
SH Count		KEDRON ROAD @ ROYAL PARK ROAD	9850	- -	9869	9967	10065	10164	10264	.20%
000237		KEDRON RD	- -	- 1854	1870	1910	1951	1992	2035	.42%
000007	SR 6	SOUTHWEST SPRING HILL	- -	17634	17852	18409	18983	19574	20185	.62%
000196	SR 396	SATURN PKWY - E. OF KEDRON RD.	- -	23877	24203	25037	25900	26793	27716	.68%
000065	SR 106	N OF DUPLEX	- -	5168	5295	5627	5980	6355	6754	1.22%
000202	I-65	SOUTH OF SR-840	- -	50001	51297	54687	58301	62153	66260	1.29%

Source: Tennessee Department of Transportation and City of Spring Hill

Level of Service

Level of Service (LOS) describes how well traffic operates on a roadway segment or at an intersection, and is based on the roadway's capacity and traffic volumes. Based on 2030 projections, four routes will fall to Level of Service (LOS) D or worse. These are in addition to the routes that will remain at these levels, as discussed in the existing conditions section. Interstate 65, north of the Saturn Parkway interchange, will fall from a current LOS C to LOS D in 2030. A portion of US 31will fall from a current LOS C to LOS D while its current LOS D will fall to LOS F. Kedron Road and Port Royal Road will both fall from a current LOS C to LOS E in 2030. This is all due, in large part, to the growth in the Spring Hill area. In some instances, only a slight increase in traffic is projected, but the current LOS for some routes is nearly LOS D. Therefore, even a small amount of growth in traffic will result in a LOS D. Table 4-10 below provides projected LOS data for all of the functionally classified routes in Spring Hill based on projected traffic counts.

Table 4-10: Projected Level of Service Data

PROJECTED SPRING HILL LEVELS OF SERVICE			
Route	**TDOT Count Station**	**Projected 2030 AADT**	**LOS**
I-65	195	25,331	A
I-65	202	66,260	D
Kedron Rd	237	1,854	A
Kedron Rd	90	10,842	C
Kedron Rd	170	9,075	C
SR 247/Beechcroft Rd/Duplex Rd	6	7,021	B
SR 247/Beechcroft Rd/Duplex Rd	10	6,881	B
SR 247/Beechcroft Rd/Duplex Rd	116	3,563	A
SR 247/Beechcroft Rd/Duplex Rd	126	7,184	B
SR 247/Beechcroft Rd/Duplex Rd	169	3,573	A
SR 396/Saturn Parkway	196	27,716	A
SR 396/Saturn Parkway	222	37,939	B
SR 6/US Hwy 31/Main St/Columbia Pk	7	20,185	D
SR 6/US Hwy 31/Main St/Columbia Pk	9	28,824	F
SR 106/US Hwy 431/Lewisburg Pk	65 (North of Duplex)	6,754	B
SR 106/US Hwy 431/Lewisburg Pk	72 (South of Duplex)	5,804	A
SR 106/US Hwy 431/Lewisburg Pk	221	5,075	A
SR 106/US Hwy 431/Lewisburg Pk	236	5,474	A
SR 246/Carters Creek Pk	144	2,475	A
SR 246/Carters Creek Pk	4	3,524	A
Beechcroft Road at Railroad	-	6,989	B
Buckner Lane at Cameron Farms	-	9,443	B
Buckner Road at Main Street	-	15,446	F
Denning Ln at Kedron	-	250	-
Duplex Road at Chapman Retreat	-	7,753	B
Duplex Road west of Miles Johnson Pkwy	-	8,172	C
Greens Mill Road at Kedron Road	-	4,792	-
Jim Warren Road at Port Royal	-	10,457	-
Kedron Road at Battlefield	-	11,776	E
Kedron Road at Royal Park Road	-	10,264	D

PROJECTED SPRING HILL LEVELS OF SERVICE			
Route	**TDOT Count Station**	**Projected 2030 AADT**	**LOS**
Kedron Road at Water Treatment Plant	-	5,431	B
Kedron Road south of Port Royal	-	5,174	B
Mahlon Moore at Kedron Road	-	4,325	-
North Main at Target north	-	14,587	B
Port Royal south of Hayne's Crossing	-	18,979	E
Port Royal at Water Treatment Plant	-	6,429	A
South Main at Target south	-	13,030	B

By 2030, many of Spring Hill's roadways are still operating at a LOS C or better. However, there are a few routes that are projected to function poorly. The following routes and portions of these routes are projected to operate at LOS D, E, or F by 2030:

- I-65 north of Saturn Parkway
- SR 6/US 31
- Buckner Road at Main Street
- Kedron Road
- Port Royal Road

The next section provides recommendations to improve these poorly operating segments of roadway among other transportation improvements.

Recommended Improvements

The information presented in the existing transportation section of this document helped determine the future year 2030 traffic projections and Level of Service for the roadways within the Spring Hill study area. Using this information along with the existing roadway functional classification and laneage, as well as input from the public charrettes, locations for future improvements have been identified. In addition, each proposed project has been assigned a priority of either long term or short term. Short term projects are projects to be constructed within 0 to 10 years, and long term projects are to be built within a timeframe of 10 or more years. Because the presence of well-designed bicycle and pedestrian facilities influences the decision to bike or walk for transport, it is important that as these recommended roadway projects move toward implementation, that bicycle and pedestrian facilities be considered as part of these projects. Table 4-11 below is a list of proposed transportation projects for Spring Hill. Exhibit X provides a graphical depiction of these projects.

Table 4-11: Spring Hill Proposed Transportation Improvements

Spring Hill Proposed Transportation Improvements						
Project Number	Location	Termini From	Termini To	Length in miles	Recommended Improvement	Priority
1	I-65	SR-840	SR-396/ Saturn Pkwy.	2.68	Widen from 4 to 8 lanes	Short-Term
2	SR-6/US-31	Kedron Rd.	Miles Johnson Pkwy	1.12	Reconstruct existing 3 lanes including streetscape improvements	Short-Term
3	SR-6/US-31	Miles Johnson Pkwy.	Buckner Rd.	1.88	Widen to 4 lane median divided roadway	Short-Term
4	Duplex Rd.	SR-6/US-31	I-65	3.33	Widen from 2 to 3 lanes and correct vertical alignment issues	Short-Term
5	John Lunn Rd./ Royal Park Blvd.	Kedron Rd.	Port Royal Rd.	1.71	Reconstruct to provide 3 lanes and correct horizontal and vertical alignment issues	Short-Term
6	Port Royal Rd.	Saturn Pkwy.	Kedron Rd.	2.13	Widen to provide a standard 2-lane cross-section with turn lanes at warranted locations	Short-Term
7	Buckner Ln.	Duplex Rd.	Thompson Station Rd.	2.65	Widen from 2 to 3 lanes	Short-Term
8	Buckner Rd.	SR-6/US-31	Buckner Ln.	1.94	Widen from 2 to 3 lanes	Short-Term
9	Buckner Rd. Ext.	Buckner Ln.	Just west of I-65	0.86	Extend as 3-lane road	Short-Term
10	Buckner Rd. Ext./ Thompson Station Rd. Connector	Buckner Rd. extension	Thompson Station Rd.	0.75	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
11	Reserves Blvd. Ext.	SR-6/US-31 north of Saturn Pkwy.	Kedron Rd.	1.23	Construct new 3-lane road	Short-Term
12	Common-wealth Dr. Ext. N.	SR-6/US-31	Duplex Rd.	1.45	Extend as 2-lane road with turn lanes at warranted locations	Short-Term
13	Kedron Rd.	SR-6/US-31	Port Royal Rd.	4.12	Widen from 2 to 3 lanes	Short-Term

Spring Hill Proposed Transportation Improvements						
Project Number	Location	Termini From	Termini To	Length in miles	Recommended Improvement	Priority
14	Miles Johnson Pkwy.	SR-6/US-31	Duplex Rd.	0.49	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
15	Commonwealth Dr. Ext. S.	Southern terminus	Port Royal Rd./ Commonwealth Ext. (P.25)	0.84	Extend as 2-lane road with turn lanes at warranted locations	Short-Term
16	Port Royal Rd./ Reserves Pkwy. Conection	Port Royal Rd.	Reserves Pkwy.	0.67	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
17	New Port Royal Rd. Ext.	Northern terminus	Thompson Station Rd.	0.25	Extend as 2-lane road with turn lanes at warranted locations	Short-Term
18	Campbell Station Blvd.	Eastern terminus	Buckner Ln.	0.66	Extend as 2-lane road with turn lanes at warranted locations	Short-Term
19	Hurt Rd.	Duplex Rd.	Bunbury Dr.	1.61	Extend as 2-lane road with turn lanes at warranted locations	Short-Term
20	Miles Johnson Pkwy. Ext. N.	Northern terminus	Wilkes Ln.	1.07	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
21	Wilkes Ln.	Western terminus	SR-6/US-31	0.62	Widen to provide a standard 2-lane cross-section with turn lanes at warranted locations	Short-Term
22	Port Royal Rd.	Saturn Pkwy.	Duplex Rd.	1.69	Widen from 2 to 3 lanes and correct horizontal and vertical alignment issues	Short-Term
23	Long Hunter Chase Dr.	Port Royal Rd.	Derryberry Ln./ Kedron Rd. Connection (P24)	0.78	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
24	Rice Road	Jim Warren Rd.	Rice Rd.	2.44	Construct new 2-lane road with turn lanes at warranted locations	Short-Term
25	Miles Johnson Pkwy/Port Royal Connection	Miles Johnson Pkwy	Port Royal Rd.	1.31	Construct new 2-lane road with turn lanes at warranted locations	Short-Term

Spring Hill Proposed Transportation Improvements						
Project Number	**Location**	**Termini From**	**Termini To**	**Length in miles**	**Recommended Improvement**	**Priority**
26	Crossings Circle Ext.	Current terminus at Crossings Circle	Reserves Blvd. Ext. (P11)	.74	Construct new 3-lane road	Short-Term
27	Tom Lunn Road Ext.	Port Royal Rd.	Rice Rd.	.75	Construct new 3-lane road	Short-Term
28	Beechcroft Rail Crossing	Rail Crossing		N/A	Construct bridge over CSX railway	Mid-Term
29	SR-247/ Beechcroft Rd. E.	Dr. Robinson Rd.	SR-6/US-31	2.65	Widen from 2 to 3 lanes and realign the intersection of Beechcroft Rd. and SR-6/US-31 with Duplex Rd.	Mid-Term
30	Duplex Rd. E.	I-65	US-431/ Lewisburg Pk.	1.91	Widen from 2 to 3 lanes and correct horizontal and vertical alignment issues	Mid-Term
31	Duplex Rd. Interchange	I-65	I-65	N/A	Construct interchange at I-65 and Duplex Rd.	Mid-Term
32	Denning Ln.	SR-6/US-31	Kedron Rd.	2.80	Widen to provide a standard 2-lane cross-section and correct horizontal and vertical alignment issues	Mid-Term
33	Buckner Rd. Ext. 2	Just west of I-65	US-431/ Lewisburg Pk.	1.15 +inter-change	Extend as 3-lane road and construct interchange at I-65 and Buckner Rd.	Mid-Term
34	I-65	SR-396/ Saturn Pkwy.	Kedron Rd.	3.62	Widen from 4 to 6 lanes	Mid-Term
35	SR-247/ Beechcroft Rd. W.	Carters Creek Pk.	Dr. Robinson Rd.	1.86	Widen to provide a standard 2-lane cross-section with turn lanes at warranted locations.	Mid-Term

Spring Hill Proposed Transportation Improvements						
Project Number	**Location**	**Termini From**	**Termini To**	**Length in miles**	**Recommended Improvement**	**Priority**
36	Rice Rd. Ext.	Port Royal Rd.	Derryberry/ Kedron Rd. Connection (P.24)	0.78	Extend as a 2-lane road with turn lanes at warranted locations	Mid-Term
37	Cleburne Rd.	Beechcroft Rd.	Petty Ln.	2.17	Widen to provide a standard 2-lane cross-section with turn lanes at warranted locations and correct horizontal and vertical alignment issues	Mid-Term
38	Petty Rd.	Beechcroft Rd.	Cleburne Rd.	2.20	Widen to provide a standard 2-lane cross-section with turn lanes at warranted locations and correct horizontal and vertical alignment issues	Mid-Term
39	Kedron Rd.	Port Royal Rd.	US-431/ Lewisburg Pk.	4.71 +inter-change	Widen from 2 to 3 lanes and construct interchange at I-65 and Kedron Rd.	Long-Term
40	Kedron Rd. Connection	Buckner Rd. extension east of I-65	Kedron Rd. east of I-65	6.90	Construct new 3-lane road	Long-Term
41	SR-396/ Saturn Pkwy. Ext.	I-65	US-431/ Lewisburg Pk.	1.75	Extend as 4-lane freeway & construct interchange at SR-396/Saturn Pkwy. and US-431/Lewisburg Pk.	Long-Term
42	Town Center Pkwy. Ext.	Beechcroft Rd.	Buckner Rd.	3.50	Extend as a 2-lane road with turn lanes at warranted locations	Long-Term

Figure 4-6: Spring Hill Proposed Transportation Improvements

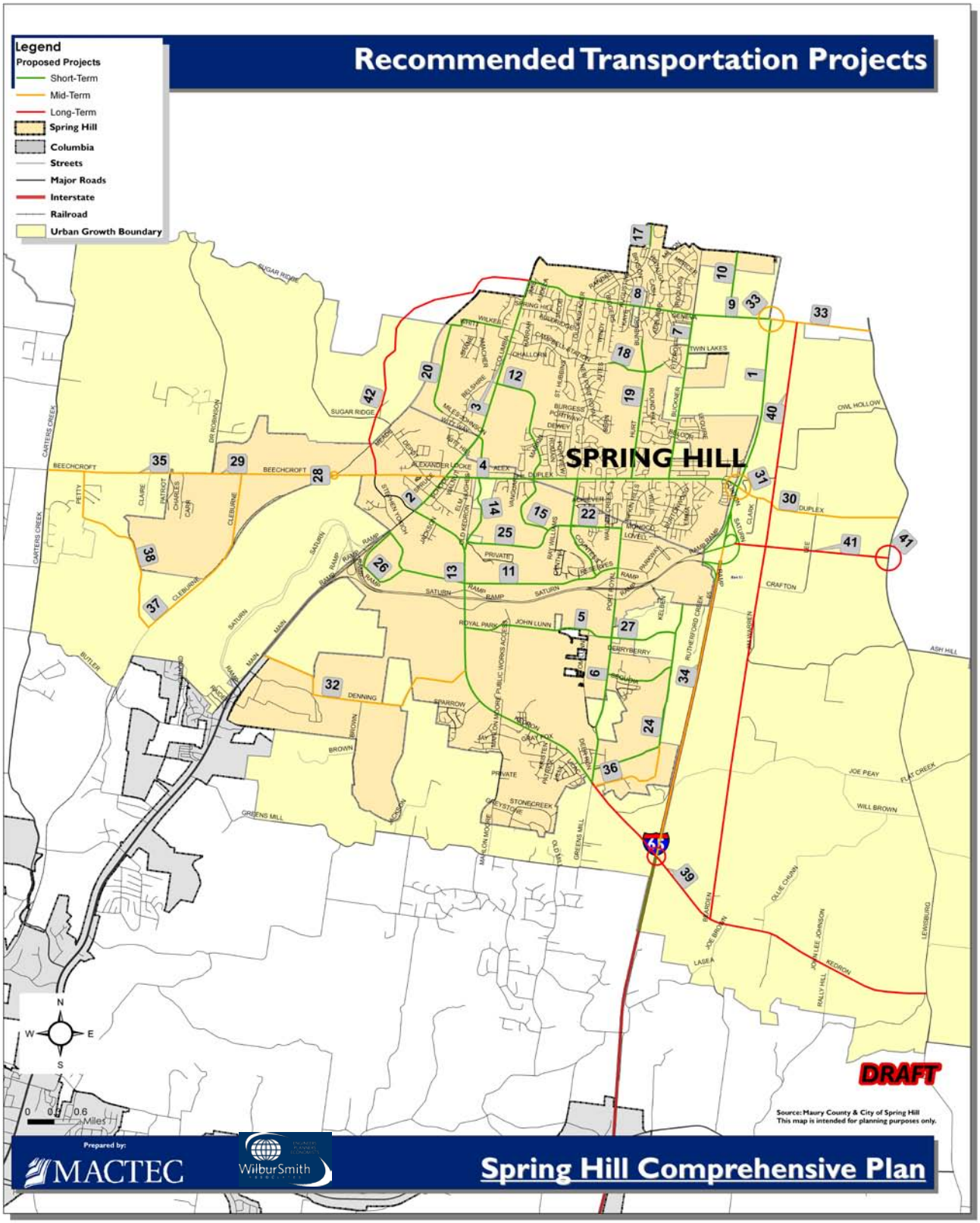


Table 4-12: Spring Hill Traffic Counts, Projected

Station Number	Route	Location	Projected Avg. Annual Traffic Growth Rate (%)		2008	2010	2015	2020	2025	2030
000004	SR246	NORTH OF JAMESON	Growth rate	1.90%						
			ADT		2329	2418	2657	2919	3207	3524
000006	SR 247	BEECHCROFT - SPRING HILL	Growth rate	1.95%						
			ADT		4591	4772	5256	5788	6375	7021
000007	SR 6	SOUTHWEST SPRING HILL	Growth rate	0.62%						
			ADT		17634	17852	18409	18983	19574	20185
000009	SR 6	NORTHEAST SPRING HILL	Growth rate	1.85%						
			ADT		19258	19977	21895	23996	26300	28824
000010	SR 247	EAST OF SPRING HILL	Growth rate	1.95%						
			ADT		6881	7152	7877	8676	9555	10524
000065	SR 106	N OF DUPLEX	Growth rate	1.22%						
			ADT		5168	5295	5627	5980	6355	6754
000072	SR 106	SOUTH OF DUPLEX NEAR MARSHALL CO LINE	Growth rate	1.85%						
			ADT		3878	4023	4409	4832	5296	5804
000090	1907	NEAR MAURY CO LINE	Growth rate	1.85%						
			ADT		7244	7515	8236	9026	9893	10842
000116	SR 247	NEAR MARSHALL CO LINE	Growth rate	1.95%						
			ADT		2330	2422	2667	2938	3235	3563
000126	SR 247	NEAR MAURY CO LINE	Growth rate	2.00%						
			ADT		4647	4835	5338	5894	6507	7184
000144	SR 246	NEAR WILLIAMSON CO LINE	Growth rate	0.18%						
			ADT		2378	2387	2408	2430	2452	2475

000169	SR 247	NEAR WILLIAMSON CO LINE	Growth rate ADT	1.85%	2387	2476	2714	2974	3260	3573
000170	1907	NEAR WILLIAMSON CO LINE	Growth rate ADT	1.95%	5934	6168	6793	7482	8240	9075
000195	I-65	SOUTH OF SATURN PKWY	Growth rate ADT	0.10%	24794	24842	24964	25085	25208	25331
000196	SR 396	SATURN PKWY - E. OF KEDRON RD.	Growth rate ADT	0.68%	23877	24203	25037	25900	26793	27716
000202	I-65	SOUTH OF SR-840	Growth rate ADT	1.29%	50001	51297	54687	58301	62153	66260
000221		NEAR MARSHALL CO LINE	Growth rate ADT	1.85%	3391	3518	3855	4225	4631	5075
000222	SR 396	SATURN PKWY - E. OF PORT ROYAL RD.	Growth rate ADT	1.19%	29233	29934	31761	33700	35757	37939
000236		S. OF WILLIAMSON CO	Growth rate ADT	1.85%	3657	3794	4158	4557	4994	5474
000237		KEDRON RD	Growth rate ADT	0.42%	1854	1870	1910	1951	1992	2035

Table 4-13: Spring Hill Traffic Counts, Projected

Location	Projected Avg. Annual Traffic Growth Rate (%)		2009	2010	2015	2020	2025	2030
BUCKNER LANE @ CAMERON FARMS	Growth rate	1.61%						
	ADT		6755	6864	7433	8051	8719	9443
BUCKNER ROAD @ MAIN STREET	Growth rate	1.90%						
	ADT		10403	10601	11647	12796	14059	15446
DUPLEX ROAD @ CHAPMANS RETREAT	Growth rate	1.90%						
	ADT		5222	5321	5846	6423	7057	7753
BEECHCROFT ROAD @ RAILROAD	Growth rate	1.58%						
	ADT		5033	5112	5528	5978	6464	6989
KEDRON ROAD @ BATTLEFIELD	Growth rate	1.90%						
	ADT		7931	8082	8879	9755	10718	11776
KEDRON ROAD @ ROYAL PARK ROAD	Growth rate	0.20%						
	ADT		9850	9869	9967	10065	10164	10264
KEDRON ROAD 3 @ WATER PLANT	Growth rate	1.74%						
	ADT		3784	3850	4196	4573	4984	5431
PORT ROYAL SOUTH OF HAYNES CROSSING	Growth rate	2.00%						
	ADT		12522	12772	14102	15570	17190	18979
PORT ROYAL 1 @ WATER PLANT	Growth rate	2.00%						
	ADT		4242	4327	4777	5274	5823	6429
MAHLON MOORE @ KEDRON ROAD	Growth rate	1.70%						
	ADT		3033	3085	3357	3653	3974	4325
DENNING LANE @ KEDRON ROAD	Growth rate	0.15%						
	ADT		242	242	244	246	248	250
	Growth rate	1.85%						

GREENS MILL ROAD @ KEDRON ROAD	ADT		3261	3321	3640	3990	4372	4792
	Growth rate	2.00%						
KEDRON ROAD I SOUTH OF PORT ROYAL	ADT		3414	3482	3845	4245	4687	5174
	Growth rate	1.85%						
NORTH MAIN @ TARGET NORTH	ADT		9926	10110	11080	12144	13309	14587
	Growth rate	1.54%						
SOUTH MAIN @ TARGET SOUTH	ADT		9445	9591	10354	11179	12069	13030
	Growth rate	2.00%						
JIM WARREN ROAD @ PORT ROYAL	ADT		6899	7037	7769	8578	9471	10457
	Growth rate	1.51%						
DUPLEX ROAD WEST OF MILES JOHNSON	ADT		5963	6053	6525	7033	7581	8172