Northeast Plant City Area Master Plan

Prepared by:
Carter Burgess

June 2008

Prepared for:
The City of Plant City and its partners;
The Hillsborough County City-County Planning Commission and
The Hillsborough County Metropolitan Planning Organization

FINAL

Northeast Plant City Area Master Plan

Master Plan Report

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The City of Plant City
The Hillsborough Metropolitan Planning Organization

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This project was made possible through the cooperation of the following:

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Vice Mayor Robert P. Brown
Commissioner Mary Yvette Thomas Mathis
Commissioner William D. Dodson
Commissioner Dan D. Raulerson
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Executive Summary

Since 1995, the land area of Plant City has increased by 12 percent with a majority of this growth occurring since the year 2000 in the northeastern area (see Figure 1) as a result of over 30 voluntary annexations that account for more than 1,600 acres. The anticipated trend is for the City's expansion to continue into this northeastern area over the next twenty years. The Northeast Plant City Area Master Plan was undertaken to address this anticipated growth and to ensure that adequate public services and facilities will be provided and that continuity of the City's development pattern is maintained. One of the key elements of this plan is the development of a transportation network that reduces future impacts to I-4 by providing alternative means of east-west connectivity in the area.

An analysis of existing conditions within the Study Area was completed to identify opportunities and constraints for development. Using Geographic Information Systems (GIS), the information was compiled into a development suitability map (Figure 17) that identified areas where development may be more appropriate. Working with members of the community, landowners in the Study Area, the Technical Working Group (comprised of representatives from the City, Hillsborough and Polk Counties, FDOT, and the School District) and the City Commission, a set of Guiding Principles were developed that were used to guide the creation of alternative future land use scenarios for the Study Area.

The development of alternative future land use scenarios was separated into four distinct phases: preliminary alternatives, refined alternatives, long range vision and the initial phase. Two preliminary alternative land use scenarios were created, known as Scenarios A and B (see Figures 18 and 19). Scenario A was more uniform in its pattern and spread development across the study area. Scenario B employed a village or community center where the highest intensity of use occurs with commercial/office/residential mixed use. Along with these future land use alternatives, roadway improvements were identified (referred to as the Preliminary Build Network) and tested to evaluate both preliminary land use scenarios A and B (see Figure 23).

Following the initial transportation model runs, a significant difference in the impact to I-4 was not identified between the two land use scenarios. The greatest difference between the two scenarios was evidenced instead on the local and county roadway networks within the Study Area. Because the transportation analysis did not show a clear distinction between the land use scenarios, a different approach was taken. The two land use scenarios were compared to the Guiding Principles and the scenario that more closely matched these principles, Scenario B, was recommended for further refinement. Scenario B was revised based on comments from the Technical Working Group and consideration of proposed development within the Study Area. The result of these refinements is the Preferred Land Use Vision shown in Figure 21.

Improvements to the transportation network were also considered at this time and similar to the land use scenario development, the development of future transportation alternatives for the master plan were separated into three distinct phases: No-Build, Preliminary Build, and Preferred Build Networks. The Preferred Build Network includes improvements identified in the Preliminary Build Network along with other roadway extensions and capacity improvements (widening). Additional analysis of several specific roadway network links was completed to determine if the proposed roadway improvements were alleviating congestion on I-4. The analysis results indicated that the Preferred Build Network (see Figure 27) in combination with the Preferred Land Use Scenario (the master plan) would reassign 5,000 to 17,000 daily vehicle trips from I-4 and State Road 39 and improve the Level of Service on Knights Griffin Road, Midway Road, and Sam Allen Road.

The Master Plan, represented by the Preferred Land Use Scenario and Preferred Build Network, is the maximum build out of the Study Area. Given current market conditions and historical growth rates, it is unlikely that the land uses contemplated in the Master Plan will be fully developed by the planning horizon of 2035, which was used for the transportation analysis. Therefore, an initial implementation phase of the Master Plan has been established that prioritizes the transportation improvements and modifies the land uses to allow greater market sensitivity. The planning horizon for this initial phase is 2025 and the key master plan transportation improvements included in this phase are the extension of Lampp Road, the extension of Sam Allen Road to Swindell Road, the extension of County Line Road to Knights Griffin Road, and the widening of Knights Griffin Road from two to four lanes.

Other implementation strategies for the Master Plan include:

- Establishment of a Joint Planning Agreement (JPA) between the City and Hillsborough County to ensure that development permitted within the Study Area is consistent with the Master Plan
- Amendments to both the City's and the County's comprehensive plans to implement the JPA and Master Plan
- Further evaluation and consideration of a transportation assessment zone for the Study Area
- Completion of an infrastructure and public facilities needs assessment
- Identification of the Phase 1 roadway improvements in the Long Range Transportation Plan and the County's Corridor Preservation Plan
- Completion of feasibility studies for the Phase 1 roadway improvements
- Completion of a market analysis and concept plan for the proposed Village Center

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1. Introduction

The City of Plant City is located in northeastern Hillsborough County, adjacent to the County's boundary with Polk County. Incorporated in 1885, Plant City was named for Henry B. Plant, a railroad builder. From its beginnings as an agricultural community, Plant City has grown in both population and land area. From 1995 to 2005, the City experienced a 28.5 percent increase in population, reaching an estimated 33,000 people in 2005. The land area of Plant City has increased by 12 percent, growing from 14,502 acres in 1995 to 16,254 acres in 2005. The majority of this growth in land area occurred since 2000 in the northeastern area (see Figure 1), with over 30 voluntary annexations that account for more than 1,600 acres. The anticipated trend is for the City's expansion to continue into this northeastern area over the next twenty years. Therefore, the City decided to complete a master plan for this area as a means to ensure (1) that provisions are made for the anticipated growth, (2) that adequate public services and facilities are provided, and (3) continuity in the development pattern.

The Northeast Plant City Area Master Plan Study Area as shown in Figure 1 is approximately 20 square miles and extends east from State Road (SR) 39/Paul Buchman Highway to the Hillsborough/Polk County line, and north from US-92 (between Park Road and the County Line) and I-4 (between SR 39 and Park Road) to Knights Griffin Road. West of Wilder Road, the Study Area boundary extends north beyond Knights Griffin Road to include the northernmost annexed portion of Plant City. The major north-south roadways within the Study Area are SR 39/ Paul Buchman Highway, and Wilder Road. Major east-west roads include US Highway 92 (US-92), I-4, and Sam Allen Road. The CSX railroad is located in the western portion of the Study Area, and the Amtrak railroad parallels the southern Study Area boundary between Park Road and the County Line.

The majority of the existing land uses are rural/agriculture (see Figure 2). Low density residential is scattered throughout the area, and limited areas of commercial use are located adjacent to SR 39, I-4 and US-92. The adopted future land use designations (see Figure 3) anticipate the expansion of low density residential development throughout the

Study Area, with only the northeastern portion remaining in rural/agricultural use. The adopted future land use map also shows the expansion of the nonresidential areas adjacent to SR 39, I-4 and US-92.

The City's efforts to approve development proposals for properties in the Study Area have been hampered by the degraded level of service on Interstate 4 (I-4), which provides the only major, continuous east-west access to other areas of Hillsborough County and points east. The Department of Community Affairs objected to comprehensive plan amendments (Round 05-2 – FLUM Amendments CPA-2005B-M14, CPA-2005B-M15, and CPA-2005B-M17) for several properties recently annexed into the City. The basis for the objection was the lack of cumulative transportation data and analysis demonstrating the coordination of land use and transportation planning, particularly for I-4, SR 39, and US Highway 92. Therefore, one of the key elements of this master plan is developing a future land use pattern that will minimize additional impacts to I-4 and coordinated roadway improvements that can provide alternate means of east-west connectivity.

The process for completing this master plan included:

- identifying opportunities and constraints within the Study Area,
- coordinating with stakeholders,
- cooperating with a Technical Working Group comprised of representatives from agencies in both Hillsborough and Polk Counties,
- creating alternative future land use visions coordinated with future transportation scenarios,
- hosting a public workshop, and
- presenting the study's findings to key local agencies.

This report details the different steps of this process and concludes with recommended actions to implement the vision contained within.

Figure 1: Northeast Plant City Area Master Plan Study Area

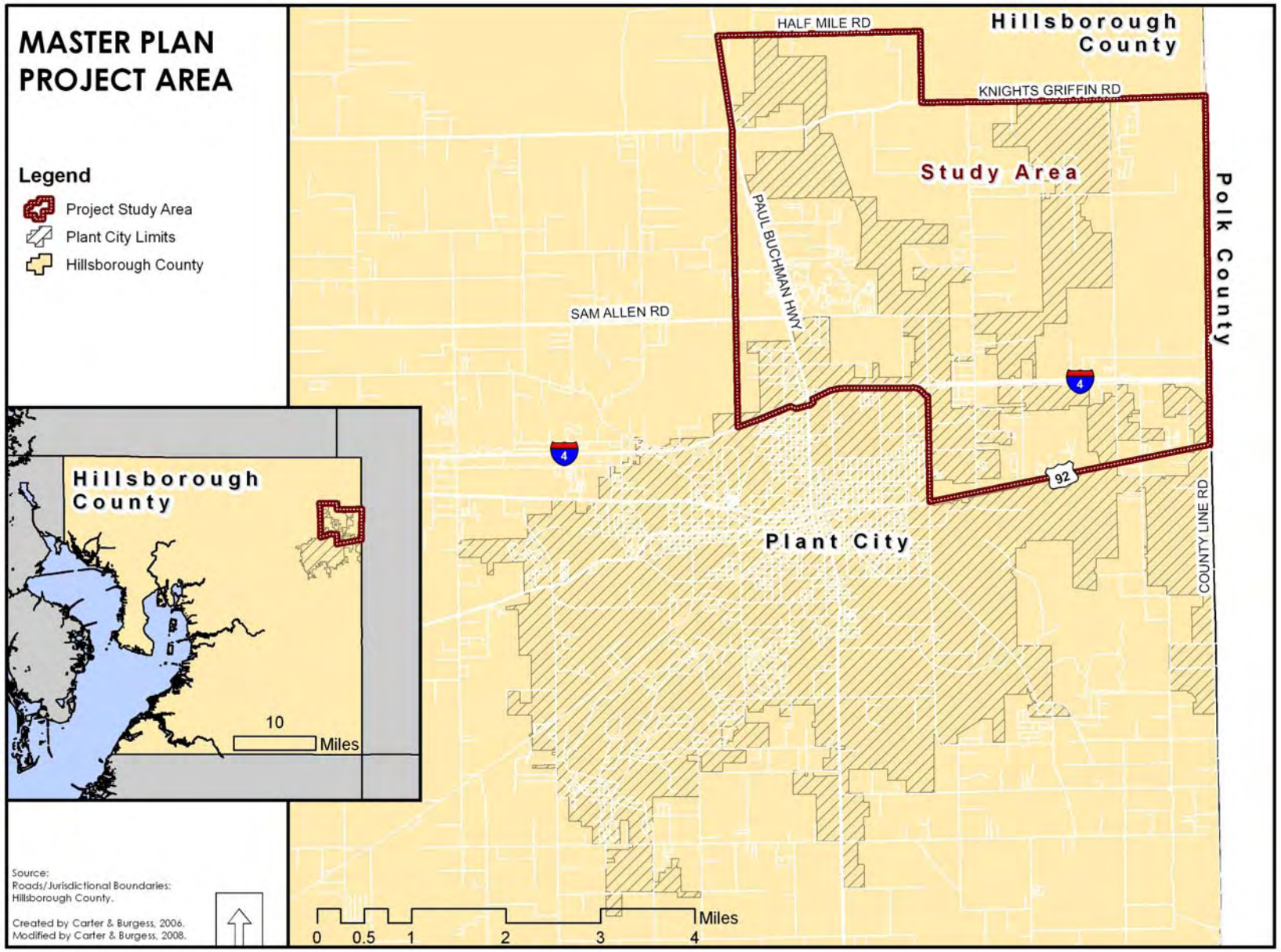


Figure 2: Northeast Plant City Area Existing Land Uses

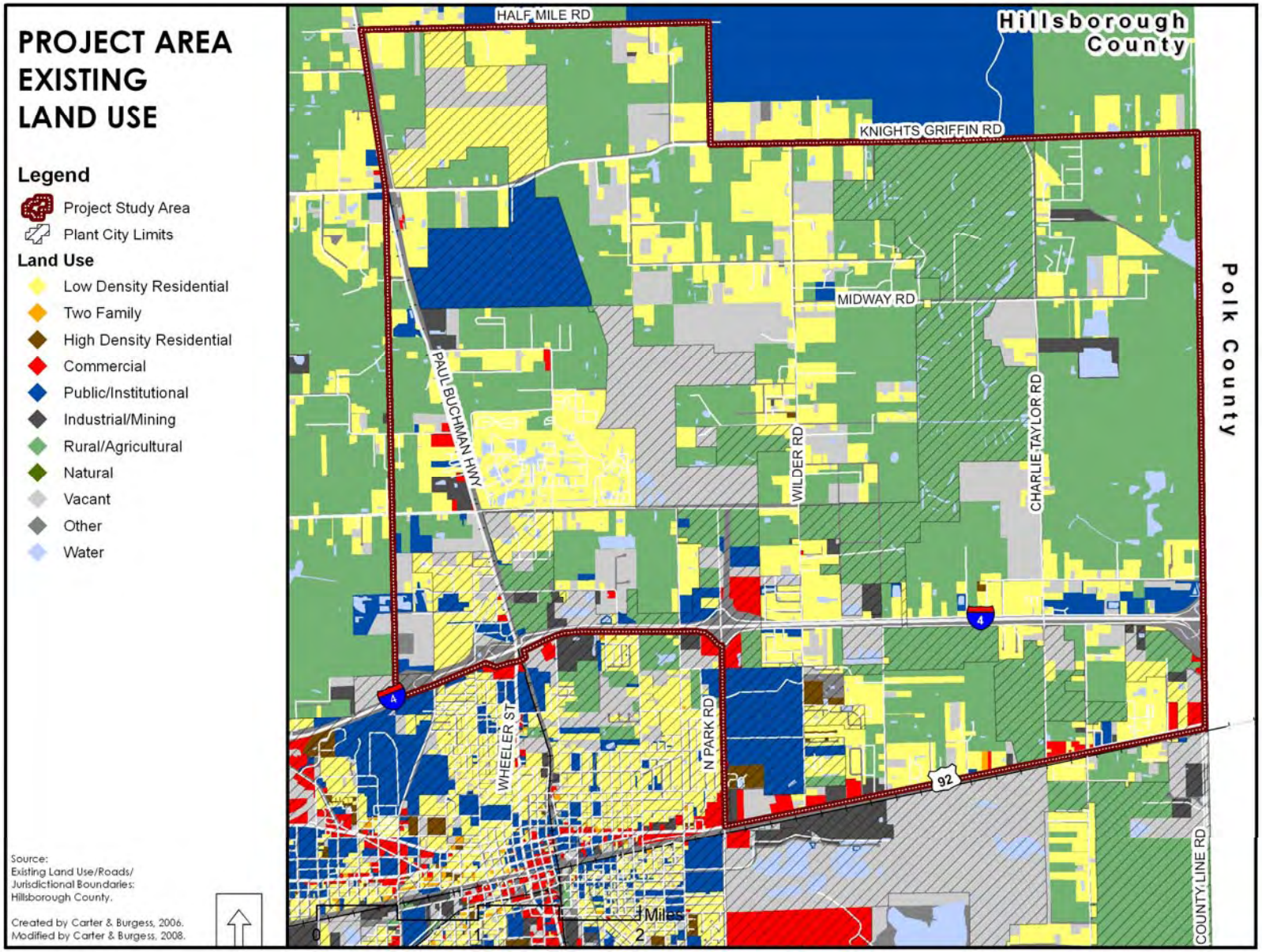
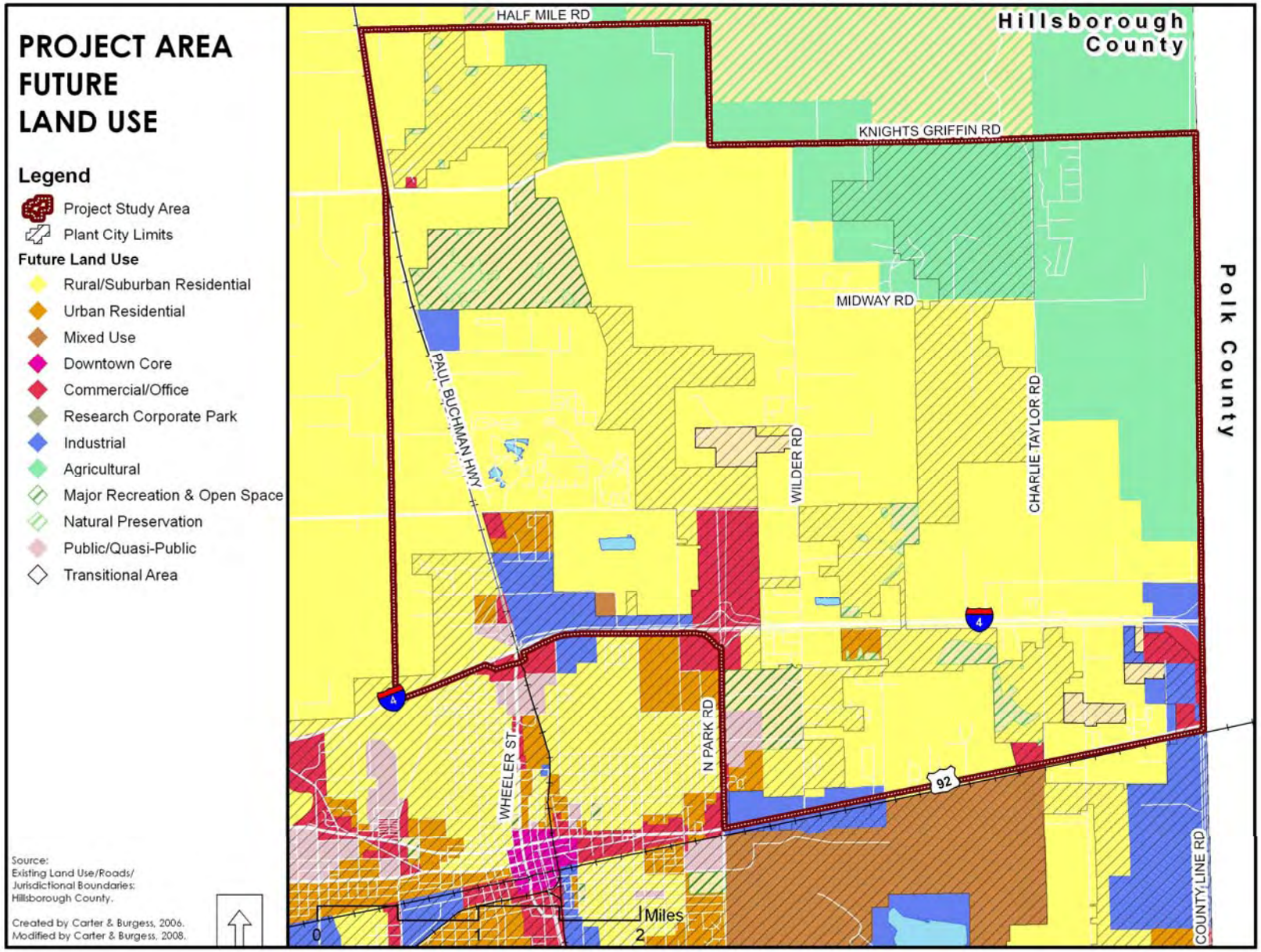


Figure 3: Northeast Plant City Area Future Land Uses



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2. Public Outreach and Coordination

Plans cannot be successful without the support of community leaders and the public. The public outreach and coordination undertaken for the Northeast Plant City Area Master Plan included property owners from the Study Area, staff members from local government agencies and elected and appointed officials from both the City and Hillsborough County. In addition to formal public meetings and working sessions, two newsletters providing information about the study were distributed to interested persons in the Study Area and the City made these documents available on its website. This section of the report briefly reviews each of the key public outreach and coordination events.

2.1. Technical Working Group

The scope of the study required the collaboration of individuals from various disciplines and government agencies. To ensure that effective coordination among these groups was achieved, the City established a Technical Working Group (TWG). Members of this group included representatives from Hillsborough County Metropolitan Planning Organization (Planning Commission), Polk TPO, the School District, the Florida Department of Transportation (Districts 1 and 7), the City of Lakeland, Polk County, and the Engineering and Public Works Departments of Plant City. This group met periodically throughout the process to review documents and provide insight and comments on these materials prior to sharing the information with the public. The following are brief summaries of the content covered during each of these meetings.

- Kick-off Meeting, September 15, 2006: At this meeting the group was introduced to the project and its purpose. Items discussed included the draft Existing Conditions Report, the proposed methodology for the transportation component of the project, the sample interview questions for stakeholders, and the proposed project schedule.

- TWG #2, January 9, 2007: The purpose of this meeting was to review the draft Guiding Principles developed as a result of the stakeholder interviews and to provide the group an update on the transportation methodology development.
- TWG #3, April 20, 2007: The draft alternative future land use visions were presented to the group for discussion at this meeting. Significant discussion centered on the transportation network supporting the proposed land use visions and the location of future school sites.
- TWG #4, July 25, 2007: The results of the initial transportation analysis were shared with the group at this meeting. Prior to the meeting, the City realized that additional information was going to be required and this was discussed with the group members. As a result of this meeting, a preferred future land use vision was recommended for further consideration in the study.

Full meeting summaries from each of the Technical Working Group meetings are included in Appendix A of this report.

2.2. Stakeholder Meetings

As a means to ensure the community's needs and desires were incorporated in the master plan process, the City identified several stakeholders that were interviewed early in the study. The results of these interviews were combined with information from existing planning documents to create a set of Guiding Principles that were ultimately used in the creation of the alternative future land use visions. The interviews were conducted by the City's consultant and representatives from City staff were not involved as a way to foster the free exchange of ideas.

In March 2007 the members of the City Commission changed. Major John Dicks retired, Vice Mayor Rick Lott became the City's Mayor, and Dan Raulerson was elected to the Commission. Commissioner Raulerson was interviewed in August 2007 as a way to acquaint him with the project and allow him to provide comment on the issues. The following is a list of the individuals interviewed and the date of the interviews.

Alvin Futch, Property Owner	October 24, 2006
Plant City Commissioner William Dodson	October 24, 2006
Danny Coton, Plant City Chamber of Commerce	October 24, 2006
Johnny Dean Page, Property Owner	October 24, 2006
Bea Bare, Greater Tampa Chamber of Commerce	October 25, 2006
State Representative Rich Glorioso	October 25, 2006
Robert Chadwell, Property Owner	October 25, 2006
Ron Weaver et. al., Property Owner	October 25, 2006
Plant City Commissioner Robert Brown	October 31, 2006
Ed Verner, Property Owner	October 31, 2006
Plant City Mayor John Dicks	October 31, 2006
Phil Waldron, Property Owner Representative	October 31, 2006
Plant City Vice Mayor Rick Lott	October 31, 2006
Growth & Planning Committee, Plant City Chamber of Commerce	November 7, 2006
Barbara Franques, Hillsborough School District	November 10, 2006
Commissioner Dan Raulerson	August 23, 2007

Appendix B includes the sample interview questions developed in coordination with the Technical Working Group and a summary of the comments gathered during the interviews. During an interim progress report on the study, the City Commission requested a summary of the comments made by fellow Commissioners during the stakeholder interviews. In response to this request, a revised interview summary was generated that included only the comments provided by the Plant City Commissioners. This revised summary is also included in Appendix B.

2.3. Newsletters and Website

Two newsletters were created for the study and distributed to interested persons within the Study Area and the City. The first edition of the newsletter was published in March 2007 and provided information about the study and its goals, the Guiding Principles, and a summary of the Existing Conditions Report. The second edition of the newsletter was published in October 2007 and was used as a means to advertise the public workshop and present information about the preferred land use and transportation vision. Copies of both of these newsletters are included in Appendix C.

The City included copies of both newsletters and information about the study on its website: www.plantcitygov.com. Following the public workshop a copy of that presentation was also posted on the City's website. A separate file transfer site was provided for members of the Technical Working Group that allowed them to access documents and other materials presented during those meetings.

2.4. Public Workshop

On October 23, 2007, a public workshop was held in the John R. Trinkle Center at the Hillsborough Community College campus in Plant City at 6:30 pm. Mayor Rick Lott made opening remarks and introduced the study. Mayor Lott emphasized the importance of having a plan for future growth so that quality of life can be maintained. Assistant City Manager Greg Horwedel reaffirmed the Mayor's statements and assured the audience that the vision being presented was not intended to change their existing uses and rights. Mr. Horwedel explained that the purpose of the vision was to provide a plan for future development undertaken in this area. Mr. Horwedel introduced the City's consultant who presented an overview of the project, the proposed future land use vision, the proposed roadway improvement scenario to support the land use vision, and proposed next steps for the study.

Following the presentation, participants were allowed to ask questions and make comments concerning the study. Concerns expressed focused on specific property designations shown on the vision plan, potential school locations, the widening of Midway

Road to four lanes, potential property takings, the CSX railroad, and the proposed greenway system. Both City staff and the consultant answered questions and encouraged participants to complete written comment forms. A copy of the workshop materials, including the PowerPoint slides, sign-in sheets, comment forms, and summary, are provided in Appendix D.

2.5. Presentations to Local Agencies

At the end of the master plan study, the results of the study were presented to the City Commission, the Planning Commission, and the Metropolitan Planning Organization. The following summarizes each of these presentations.

2.5.1. The Planning Commission

On February 11, 2008, the study was presented to The Planning Commission at a regularly scheduled meeting. Mark Hudson introduced the study and the presentation was given by the Consultant, represented by Jill Quigley and Scott Pringle. The following questions or comments were offered by the Planning Commission members.

- Why was I-4 not used as the Southern Boundary for the Study Area?

  Mr. Hudson answered that it was due to a significant enclave of the very low density land that is still present in Hillsborough County where some annexations were occurring and there was a desire to get some type of vision of how that development should be guided.

- Does the traffic modeling analysis take into account right-of-way that can accommodate future vehicle, bicycle and pedestrian and utility needs such as along Wilder Road, Charlie Taylor Road and CR39 so that it does not have to be created?

  Mr. Pringle responded that the study did not explore that level of detail but that the greenways identified on the plan were identified to address multimodal options.

- Does the plan provide for rail/bus terminals along the I-4 corridor?

  Ms Quigley answered that this was not included since the community leaders requested that the focus be on traffic.

  Commissioner responded by encouraging the consideration of a parallel road plan along I-4 since it has been successfully used in other metropolitan areas that are growing along interstates.

- Has water capacity for the future been considered?

  Ms Quigley noted that this was not included in the master plan but is a recommended next step.

- Was the promotion of high tech or bio-tech considered along the I-4 corridor?

  Ms Quigley responded that this issue arose during the stakeholder interviews and was considered through the planning process but may not be specifically illustrated in the plan.

- The Planning Commission is considering land uses along the I-4 corridor and this master plan should be coordinated with these efforts. Were activity centers considered at SR 39 and Sam Allen Road?

  Ms Quigley noted that coordination with the Planning Commission regarding the I-4 area was part of the process. During the Technical Working Group meetings there was discussion about the use of multiple activity centers within the Study Area. Given the size of the area it was agreed that providing one center was the best approach. Originally the activity center was located more in the middle of the Study Area but due to existing parcelization, it was shifted to its current location at the intersection of Midway Road and Charlie Taylor Road.

- What timeframe is being considered?

  Ms Quigley responded that the transportation model runs were for the Year 2035.

- So that these roads, for instance Sam Allen and Swindell Road, are going to be extending and merging, will they be on a certain timeframe as well? How is it going to be implemented?

  Mr. Pringle responded that the interim analysis was being conducted in order to prioritize the roadway projects and create a first phase of improvements.

- Will the Alexander Extension, from where it ends now at I-4 all the way to Knights Griffin, occur sooner than some of the other roadway improvements?

  Mr. Pringle answered that the extension of Alexander Street is part of the Long Range Transportation Plan, and not something that is prioritized as part of the master plan.

2.5.2. The Plant City City Commission

The final presentation of the Northeast Plant City Area Master Plan to the City Commission was given on Tuesday, May 27, 2008, as part of the regular City Commission meeting. A brief presentation of the project was provided by Jill Quigley and Scott Pringle. The presentation covered the planning process, the preferred land use vision, the transportation analysis, the interim/phase one vision, and implementation strategies.

Following the presentation, Mayor Rick Lott took several minutes to explain to the audience the importance of the master plan. Mayor Lott stressed that the purpose of the plan is not to grow the northeast area but instead ensure that growth, when it does occur, follows a set of standards so that it is not piece meal.

Two members of the public spoke during the public comment period. The comments of these individuals are summarized below.

- Charlotte Butler Nelson – Ms Nelson had several questions about annexation areas and recommendations for roadway improvements and further coordination. Specifically, Ms Nelson asked if recent annexations would be required to follow the plan. The Mayor indicated that they would. Mayor Lott further explained that the hope is for the vision to turn into a viable

plan enforced by a joint planning agreement with Hillsborough County so that even unincorporated areas followed the plan. Ms Nelson also asked if changes would be made to annexation rules since there has been disagreement in the past regarding "substantial abutment". Ken Buchman, City Attorney, responded that there are not any changes anticipated since it is a state rule. Ms Nelson recommended that a one unit per acre zoning designation be considered as it would provide a better transition between suburban and rural land uses. Ms Nelson also suggested that SR 39 be considered for improvements since it is the gateway for the area. Ms Nelson requested that in the future the City include everybody in the area when conducting community interviews. Finally, Ms Nelson expressed skepticism about the plan and strongly encouraged the City to put teeth to it by including it in the comprehensive plan and land development regulations, and then making sure that everybody plays by the same rules.

- Rosalind Baker – Ms Baker commended the City for pre-planning. She noted how different areas have their attraction. For Plant City it is agriculture and the Strawberry Festival. Ms Baker stated that agriculture is an important contrast to urban areas and she encouraged maintenance of the agricultural areas in the northeast area.

Vice Mayor Robert Brown moved that the City approve the master plan. The motion was seconded by Commissioner Yvette Thomas Mathis. Commissioner William Dodson commended Ms Nelson for her participation and following the project and clarified that the land use plan currently controls annexed areas. Vice Mayor Brown thanked the Mayor and staff for including this item on the agenda of his last meeting. Mayor Lott commented on the collaborative process and expressed gratitude for the strong leadership his fellow commissioners exhibited through the process. The motion passed 5-0.

2.5.3. The Hillsborough County Metropolitan Planning Organization

The presentation of the Northeast Plant City Area Master Plan to the Hillsborough County Metropolitan Planning Organization (MPO) was given on Tuesday, June 3, 2008, as part of the regular MPO meeting. A brief presentation of the project was provided by Jill Quigley and Scott Pringle. The presentation covered the planning process, the preferred land use vision, the transportation analysis, the interim/phase one vision, and implementation strategies.

Following the presentation, Mayor (and MPO Board Member) Rick Lott took several minutes to explain to the audience the importance of the master plan. Mayor Lott stressed that the purpose of the plan is not to grow the northeast area but instead ensure that growth, when it does occur, follows a set of standards so that it is not piece meal.

There were no public comments on the project and no official action was taken by the MPO at the meeting.

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3. Existing Conditions

The first step in the master planning process was to identify existing conditions within the Study Area. The purpose of the Existing Conditions analysis was to identify the opportunities and constraints for development in the Study Area. The analysis was divided into three major areas: demographic/socio-economic conditions, public facilities, and environmental conditions. The demographic/socio-economic conditions analysis was based on a review of U.S. Census data. Information on public facilities and environmental conditions was based on existing data from the City's Public Works Department, Hillsborough County, and several State of Florida agencies, including the Department of Transportation. This information was compiled into a development suitability analysis using Geographic Information Systems. The results of the analysis were used as a planning tool for the purposes of developing the future land use alternatives. This section of the master plan document provides a brief summary of the existing conditions in the Study Area. More detail is available in the *Existing Conditions and Physical Constraints Report*.

3.1. Existing Conditions Evaluated

The existing conditions analysis considered the following factors, which are discussed below.

- Demographics and Socio-Economic Conditions
- Water Supply
- Sanitary Sewer Collection
- Transportation
- Public Schools
- Wetlands
- Floodplains
- Surface Water Protection Areas
- Wellfield and Wellhead Protection Areas

- Significant Wildlife Habitat
- Topography/Slope
- Environmental Conservation Areas
- Historical & Archaeological Sites

3.1.1. Demographics and Socio-Economic Conditions

Comparisons were drawn between the Study Area and Plant City as a whole for the following factors: population change, age, race, ethnicity, level of education attained and income. In most of the demographic and socio-economic indicators that were evaluated, the Study Area closely resembles the trends experienced by Plant City as a whole. The most significant differences between the two are the substantially older population and the higher percentage of the population with a college degree found in the Study Area. The following were identified as considerations for the master plan as a result of the demographic and socio-economic analysis:

- The population is growing more diverse. The types of goods and services offered should reflect this change. For example, park and recreational facilities should accommodate a wide variety of activities.
- If reducing the average age of the Study Area population is desired, residential development geared towards families should be promoted. Associated with this will be the provision of a higher level of service for public facilities, such as schools, parks and recreation, and other family-oriented goods and services.
- For an economically sustainable area, the development proposed for the Study Area should be attractive to individuals with higher levels of educational attainment and potentially seeking higher income careers. Ideally, these people would live and work within Plant City so as to avoid further overburdening the regional roadway network.

3.1.2. Water

Plant City's drinking water is supplied from the Floridian Aquifer by four wells. Current permitted (South West Florida Water Management District) water supply is 9.852 MGD, Average Annual Daily Flow (11.823 MGD Peak Month). During 2005, the City's Utilities Department treated and distributed 5.8 MGD of drinking water (Public Works Annual Report 2005), well below its permitted and available capacity. Excess potable water capacity will allow additional development to occur in areas that are already served or can easily be served by existing water lines. Therefore, the location of the existing water lines was determined to be an important factor in assessing the opportunities and constraints to development in the Study Area. As shown in Figure 4, the majority of the Study Area is not served by City water, as the existing lines do not cross north of I-4 (east of Wilder Road) or north of Sam Allen Road (west of Wilder Road).

3.1.3. Sanitary Sewer

The Plant City Water Reclamation Facility collected and treated approximately 5.4 MGD of wastewater in 2005. The existing facility has the capacity to treat 8.0 MGD and construction is underway to expand the treatment capacity to 10.0 MGD by April 29, 2008. The locations of existing sanitary sewer lines are shown in Figure 4. The location of sanitary sewer lines is similar to the potable water system, not extending north of I-4 in the eastern portion (east of Wilder Road) of the Study Area and only extending as far as Sam Allen Road in the western portion (West of Wilder Road) of the Study Area.

The City also provides reclaimed water for non-potable uses, such as irrigation. In 2005, the City distributed 2.5 MGD of reclaimed water. While the use of reclaimed water is an important water conservation measure, the ability to develop land does not depend on its presence or absence.

3.1.4. Transportation

Within the Study Area there are two regional roadways that provide access to the local roadway network. Interstate 4 crosses the southern portion of the Study Area with an east-west orientation. This is a regionally significant interstate that connects the City of

Tampa with the cities of Plant City, Lakeland, Orlando, and points east. State Road 39, while not as regionally significant as I-4, connects the City of Zephyrhills in Pasco County and Downtown Plant City. US-92 and Knights Griffin Road are also significant corridors, providing east-west access to the study area, while connecting Downtown Plant City with major employers such as Publix Supermarket's primary distribution complex. US-92 is also a component of the West Central Florida Chairs Coordinating Committee (CCC) regional transportation network.

The existing LOS for Study Area corridors are documented using the 2005 Roadway Level of Service Report, published by Hillsborough County in July 2004. The results of this effort, which reflect the average PM Peak hour of travel, are presented in Figure 5. The average of many congestion indices are the basis for a Level of Service (LOS) determination. LOS A and B indicate good operating conditions with minimal delay and at LOS C, there are some delays, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and conditions at LOS E and F reflect poor service levels, with significant congestion. The data indicates that all corridors operate at LOS C or better during the average PM Peak Period with the exception of the following:

- Within the Study Area SR 39 north of I-4 and Wheeler Street south of I-4 operate at LOS D.
- I-4 between the intersections of SR 39 and Park Road is the most congested with operations at LOS E.
- I-4 between the intersections of Park Road and County Line Road operates at LOS D.

Within proximity to the Study Area are two public transit agencies. The first is the Hillsborough Area Regional Transit (HART) Agency which provides local and express service to the metropolitan areas of the City of Tampa and Hillsborough County. HART provides one express route within the vicinity of the project Study Area. This express route (28x) provides service to Forbes Road and US-92. This stop, while outside of the Study Area, provides Plant City residents express bus service to downtown Tampa, leaving twice

in the AM peak commuter hour (6:15AM and 6:45AM) and returning during the PM peak commuter hour (5:31PM and 6:10PM).

The Strawberry Express is a local bus service operated by Plant City with three routes that directly border the Study Area. These routes connect local destinations with downtown Plant City. These routes are the southeast Plant City Route 71, the Northwest Plant City Route 72, and the Northeast Plant City Route 73 which operate with one hour headways and are shown in Figure 6.

There are two heavy rail lines located within the Study Area: one along the SR 39 corridor and the other along US-92. The rail line running along the SR 39 corridor is owned by CSX and is primarily used to carry freight, whereas, the rail line running along US-92 is owned by Amtrak and used for passenger service. Various studies such as the Tampa Bay Commuter Rail, the Florida Coast-to-Coast Rail, the Strategic Regional Transit Needs Assessment, the Tampa Bay Area Regional Transportation Authority's (TBARTA) Regional Master Plan, and the Florida High Speed Rail are considering the use of the existing Amtrak rail line as a possible location to provide regional transit opportunities in the future.

3.1.5. Public Schools

Enrollment from the 2005 school year was obtained for the elementary, middle and high schools that are assigned to the Study Area (see Figure 7 for the school locations). All of the elementary, middle and high schools are over capacity, and therefore, additional capacity will be required to support any new residential developments in the Study Area.

3.1.6. Wetlands

For the purposes of this evaluation, land was divided into uplands or wetlands. The Study Area has a significant number of wetlands (see Figure 8) that may impact the location of development and related facilities, such as roads. The Study Area consists of approximately 10,711 acres of uplands (85 percent) and 1,902 acres of wetlands (15 percent).

3.1.7. Floodplains

Approximately two thirds, or 9,668 acres, of the Study Area is designated as Zone X or X500 floodplain. Of the remainder, approximately 19 percent (2,423 acres) are designated as AE and 4 percent, or 521 acres, is located within the A zone (see Figure 9). Hillsborough County requires the lowest habitable floor of residential structures to be elevated at or above the base flood elevation (BFE) identified on the Flood Insurance Rate Maps (FIRM). Nonresidential structures are allowed to flood proof (be made water tight) to the base flood elevation or elevate the lowest floor to or above the BFE. If BFE has not already been established, the property owner is responsible for conducting the appropriate analysis to determine the proper elevation. Thus, while location in an A or AE flood zone does not prevent development from occurring, it does add to the cost of construction.

3.1.8. Surface Water Resource Protection Areas

Pursuant to Sec. 3.05.02, Wellhead Resource Protection Area Map, Surface Water Resource Protection Area Map and Potable Water Wellfield Protection Area Map, of the Hillsborough County Land Development Code, "lands located adjacent to or near surface water bodies that are upstream of potable water supply systems are designated as Surface Water Resource Protection Areas (SWRPA) to protect downstream water quality from threats of certain types of land use activities and surface water discharges." These zones include the land area of surface water bodies and watercourses. The County has established regulations that restrict certain activities and types of land uses within SWRPA, such as prohibiting new industrial uses or the injection of stormwater into areas connected with the Floridian Aquifer. Over 2,800 acres of land (or 22 percent) within the Study Area is designated as Surface Water Resource Protection Area. Figure 10 shows the location of water bodies and Surface Water Resource Protection Areas within the Study Area.

3.1.9. Wellheads

Hillsborough County requires a 500 foot protection zone around all potable water wellheads, known as Potable Water Wellfield Protection Areas (PWWPA), and has established specific land use regulations to ensure that recharge areas and water quality are protected. In addition to PWWPAs, the County identifies Wellhead Resource Protection

Areas (WRPA). WRPAs are separated into two zones: Zone 1 is the Potable Water Impact Protection Zone and Zone 2 is Public Potable Water Supply Well Protection Zone. Uses that would adversely affect the water quality, such as dry cleaners, golf courses, sewage treatment are prohibited in the protection zones. More stringent criteria are applied to PWWPAs.

Figure 11 shows the locations of Zone 1 and 2 wellhead protection areas. The only Zone 1 area is located at the northern end of the Study Area and it is a potential public water resource area. The Zone 2 areas located within the Study Area are production wells that currently supply drinking water. Three well sites are identified in Zone 2. Thirty-four potable water wells are located in the study area and each has a 500 foot radius protection area buffer zone. Less than 20 percent of the Study Area is designated as a Zone 2 protection area, and only about six percent of the area is designated as a Zone 1 protection area.

3.1.10. Significant Wildlife Habitat

Significant Wildlife Habitat is defined by the Hillsborough County Land Development Code as, "Contiguous stands of natural plant communities which have the potential to support healthy and diverse populations of wildlife and which have been identified in the Florida Game and Freshwater Fish Commission Natural Systems and Land Use Cover Inventory for Hillsborough County." The County's regulations provide for the on-site preservation of all Significant Wildlife Habitat, and do not permit the construction of new roads through these areas unless no other feasible alternative exists. There is a large area of land (approximately 493 acres) designated as Significant Wildlife Habitat within the Study Area (see Figure 12).

3.1.11. Topography/Slope

While slope is not generally a significant consideration in the development of land in West Central Florida, an assessment of the Study Area's contours (see Figure 13) revealed that there may be the potential for some steep terrain. Using data from the Digital Elevation Model (obtained from the Florida Geographic Data Library), a slope analysis was

conducted. The results indicate that while a majority (65 percent) of the land has slopes of eight percent or less, 35 percent has slopes between eight and 20 percent, and nearly 200 acres are sloped in excess of 20 percent.

3.1.12. Environmental Conservation Areas

Figure 14 shows the areas designated for preservation by the County's Environmental Lands Acquisition and Protection Program (ELAPP). To date, only the 365-acre parcel that is immediately adjacent to Knights Griffin Road has been acquired. This parcel was purchased jointly by Plant City and the Florida Communities Trust and is designated as a preservation area. The other designated area, the Zack Tract, occupies most of the area designated as Significant Wildlife Habitat (see Figure 12), but the owner has not responded to inquiries about potential purchase and has already received a change in zoning from the City and intends to develop the property.

3.1.13. Historical, Cultural and Archaeological Resources

An inquiry with the Florida Master Site File (FMSF) in November 2006 resulted in a finding of 33 previously recorded archaeological sites (site types include: prehistoric mound, artifact scatter, prehistoric burial ground, campsite, Nineteenth century development, and aceramic camp), four cemeteries, and 110 standing structures (structure types include: residence, gate, school, store, barn, hotel, and monument) within the project area. Although there are a large number of historically significant properties located within the Study Area, their inclusion in the FMSF does not necessarily suggest the structures are significant. These sites will continue to be an important factor while the land use scenarios are completed for the Northeast Plant City Master Plan. In particular, the four cemeteries will be taken into consideration, have been located, and are shown in Figure 15.

3.2. Evaluation Methodology

The development suitability of the Study Area was evaluated using a Geographical Information System (GIS) based spatial model, using the Spatial Analyst extension of ArcGIS (version 9.1). The model was intended to identify land suitable for development

within the Study Area based on a set of variables that are appropriate for region-wide analysis. In the case of Plant City, this region covers an area of approximately 20 square miles. The model was intended to be used as a tool for analysis and the model outputs were used as a guide for making informed decisions as they relate to alternative future land use scenarios. The final development suitability scale was established using the built-in statistical analysis tools of GIS.

The model uses two parameters: environmental constraints to land development and infrastructure availability necessary for land development. Ten different variables were used to evaluate these parameters. The logic for using these variables included readily available data sources, appropriateness to the scale at which the model is applied, and model simplicity. Table 1 shows the variables used and how each was evaluated.

Table 1: Variables and Evaluation Measures

Variable	Measure Evaluated
Water Supply	Proximity
Sanitary Sewer	Proximity
Environmental Conservation Areas	Designated areas
Topography	Percent of slope
Floodplains	Type of flood zone
Wetlands	Proximity
Streams	Proximity
Significant Wildlife Habitat	Designated areas
Surface Water Protection Area	Designated areas
Potable Water Well & Wellhead Resource Protection Areas	Proximity

Source: Carter & Burgess, Inc., 2006

GIS maps of the study area, comprised of data grid-cells representing 90' x 90' land areas, were assembled for each variable. A three-tiered ranking was then applied. First, each variable was divided into its component traits. For example, the floodplain variable has three traits: Zone X/X500, Zone A, and Zone AE. Each trait was then given a rating for its suitability for development. These ratings were assigned on a scale of three, where one (1) equals High Suitability, two (2) equals Limited Suitability and three (3) equals Poor Suitability.

The second tier of analysis was based on the impact the variable has on overall development, and each variable was assigned a weighting factor on a scale of 0 to 100, where 0 represents no constraint to development and 100 represents significant constraint. For example, the absence of water supply lines is not as limiting to development as the existence of wetlands, so the weighting factor assigned for water supply is lower than the factor for wetlands. Considerations in determining an appropriate weighting factor included the impact on the ability to develop the land from a physical standpoint and the financial impacts of the variable.

The third tier of the analysis was determining the relative value of each variable in relation to overall scale. This was determined by totaling the weighting factors and calculating the percent each variable contributed to this total. As an equation, this concept is expressed as: Relative Value = Variable Weighting Factor/Sum of Weighing Factors * 100. Table 2 summarizes the three-tiered analysis for each variable.

Table 2: Variables, Suitability Ratings, Weighting Factors and Relative Values

Variables	Suitability Rating	Weighting Factor	Relative Value
Wetlands		100	18.2%
No	1		
Yes	3		
Floodplain		50	9.2%
X or X500	1		
AE	2		
A	3		
Significant Wildlife Habitat		70	12.7%
No	1		
Yes	3		
Topography		30	5.4%
0 – 8% slope	1		
8 – 20% slope	2		
Greater than 20% slope	3		
Surface Water Protection Area		20	3.6%
No	1		
Yes	3		
Streams		100	18.2%
No	1		
Yes	3		

Variables	Suitability Rating	Weighting Factor	Relative Value
Wellfield & Wellhead Protection Areas		20	3.6%
None	1		
Zone 1	2		
500 ft buffer or Zone 2	3		
Water Supply		30	5.5%
Within 500 feet of existing service	1		
Between 500 and 1,000 feet of existing service	2		
Beyond 1,000 feet of existing service	3		
Sanitary Sewer		30	5.4%
Within 500 feet of existing service	1		
Between 500 and 1,000 feet of existing service	2		
Beyond 1,000 feet of existing service	3		
Environmental Conservation Areas		100	18.2%
No	1		
Yes	3		
	TOTALS	**550**	**100.0%**

Source: Carter & Burgess, Inc., 2006

3.3. Evaluation Results

The composite analysis indicates that a majority (over 60 percent) of the Study Area is suitable (either "High" or "Moderate") for development. The areas with "High" are generally located in the southern portion of the Study Area where existing water and sewer facilities are available. The "Moderate" suitability areas, which represent the largest portion of the Study Area, are located in the center and on the western edge and northern (north of Knights Griffin Road) portions of the Study Area. These are the areas where the environmental conditions were the least restrictive, i.e. there is a greater presence of uplands, land is outside the 100-year floodplain, and is not designated for preservation, as wildlife habitat, or as a surface water resource or wellfield/wellhead protection area. The portions of the Study Area that are less ("Low" and "Very Low") suitable for development, according to this analysis, are those areas designated as Surface Water Resource Protection Areas and within the 100-year floodplain or are comprised of wetlands (orange, "Very Low" areas). The areas that "May Not Be Suitable" for development are shown as red in Figure

16, and these are comprised of the ELAPP preserved site, streams, and areas where streams and wetlands overlap.

As mentioned previously, the results of this analysis were not meant to provide a basis for land use regulation, but rather to act as a planning tool for the creation of the land use scenarios. The results of this analysis combined with existing parcelization patterns, information on approved developments, ownership data, information from the Florida Master Site File, the guiding principles established as a result of the community interviews, and the professional judgment of the project team were used to create the future land use scenarios.

Figure 4: Existing Water, Sewer and Reclaimed Water Lines

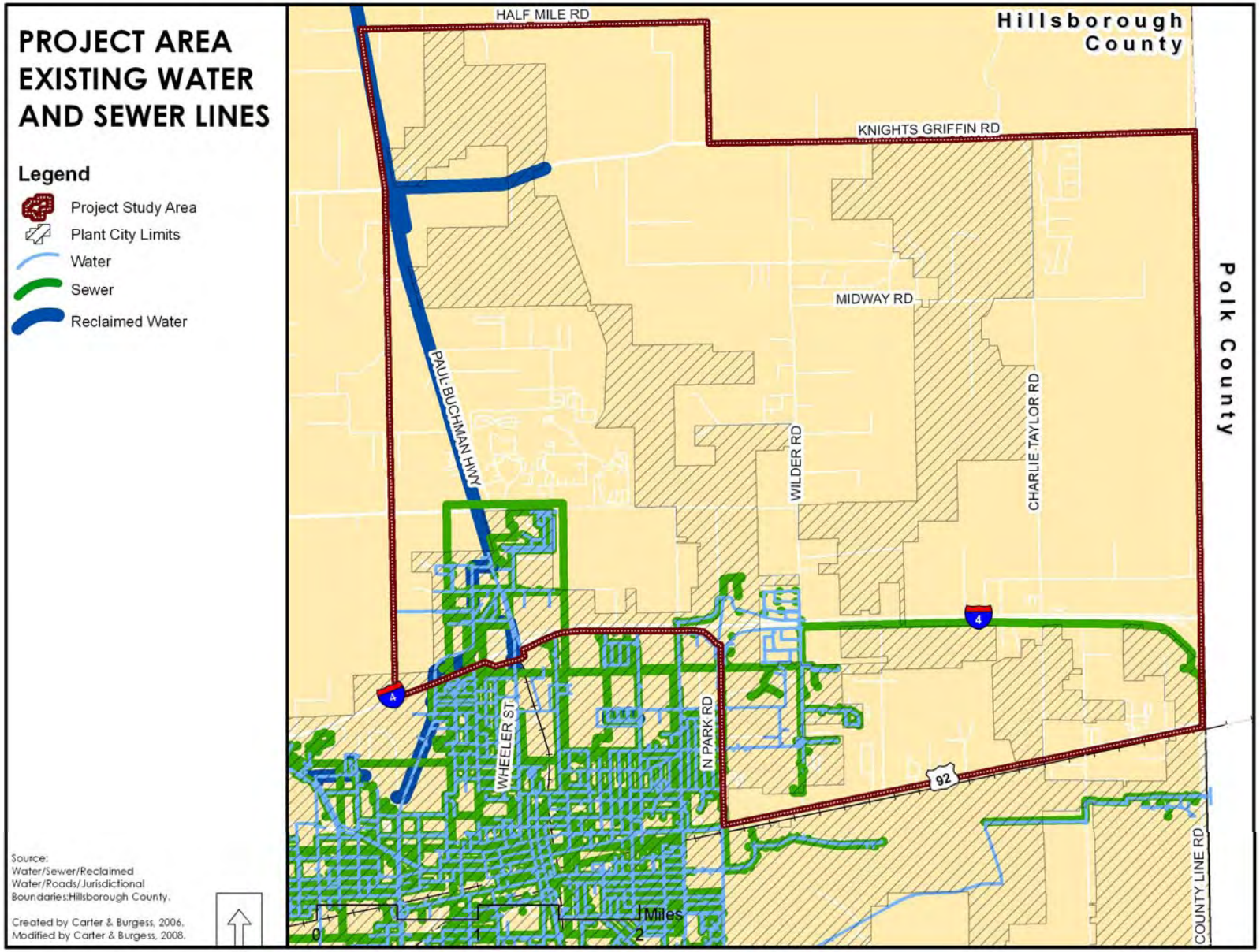


Figure 5: Existing Roadways and Levels of Service (2004)

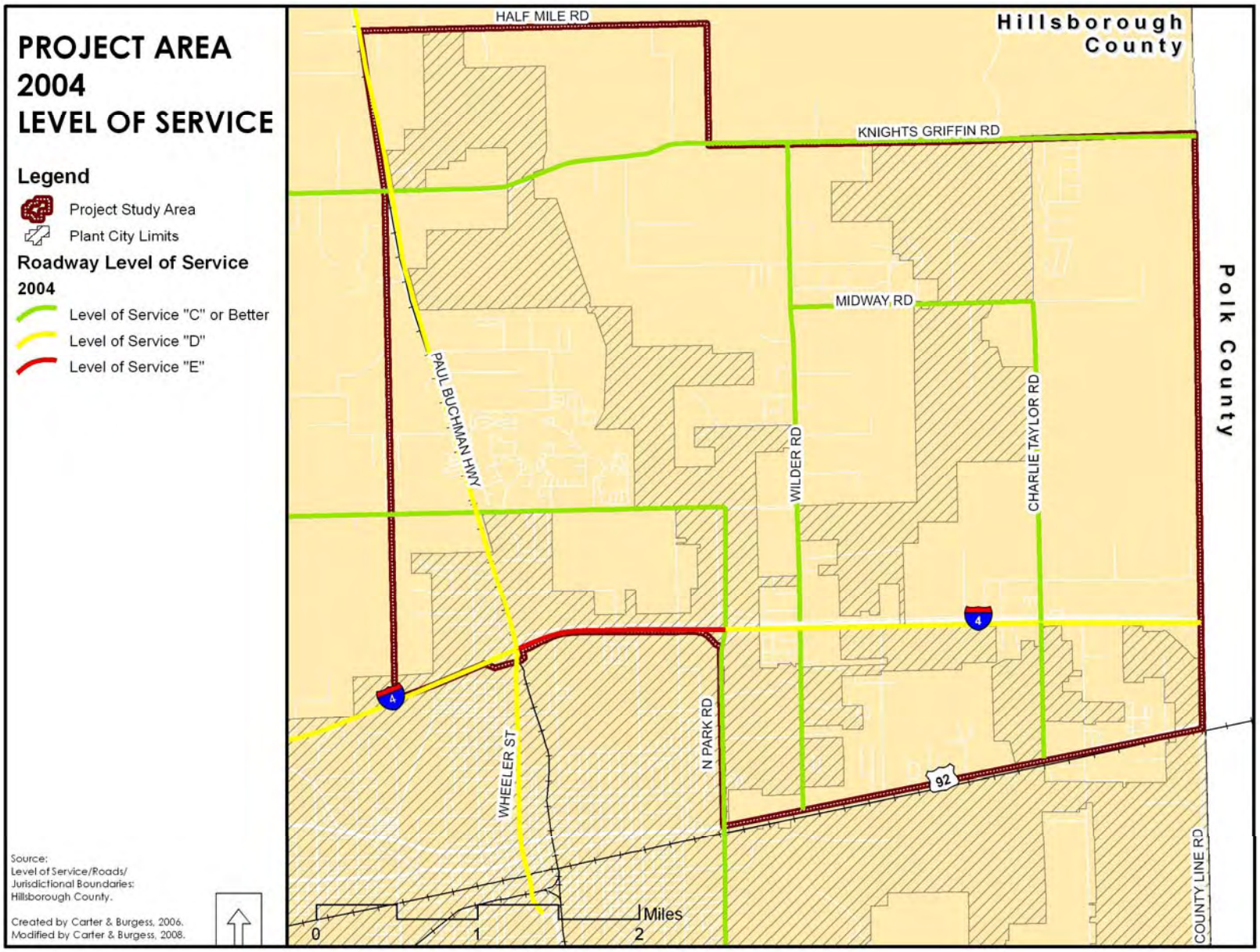


Figure 6: Existing Public Transportation

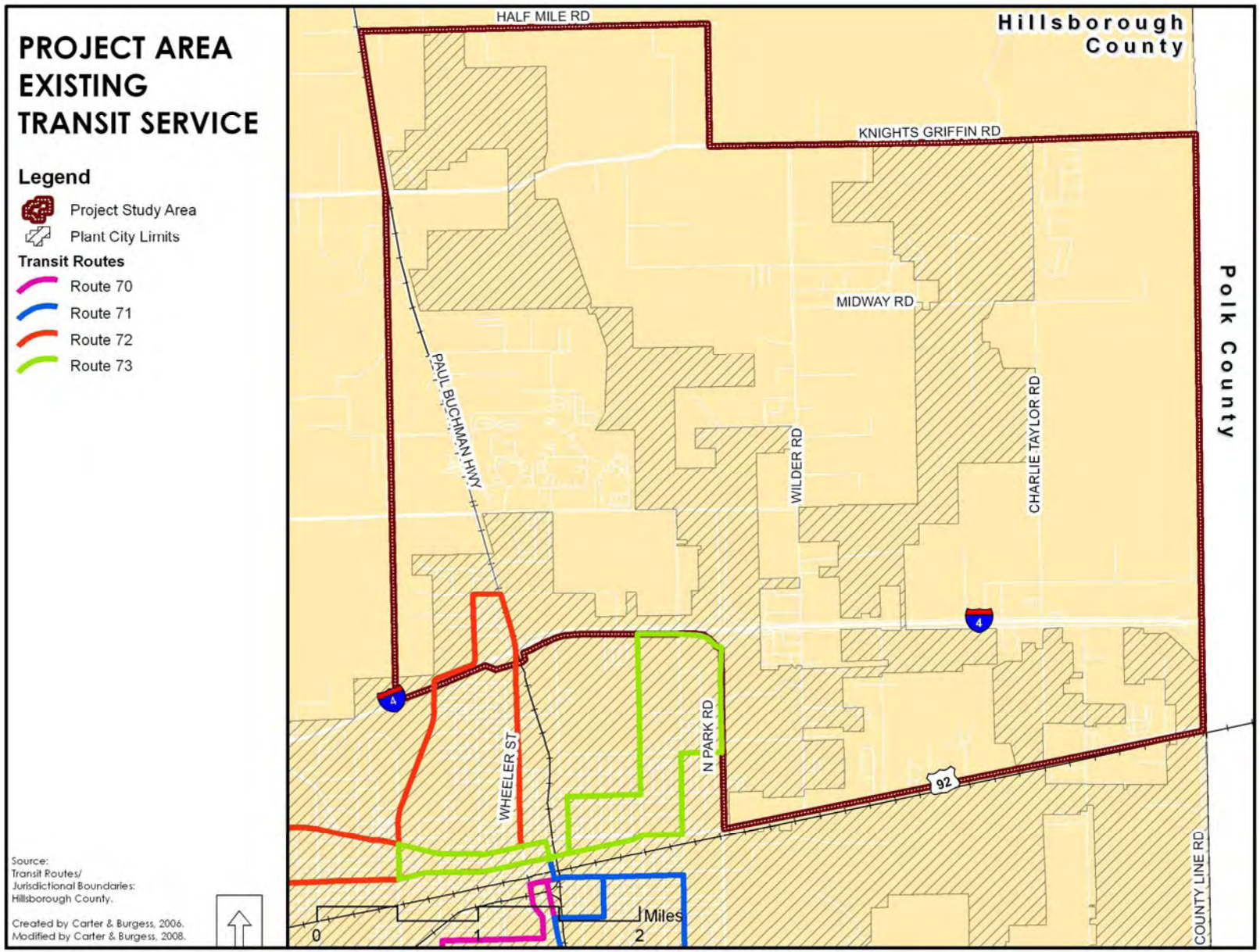


Figure 7: Existing Public Schools

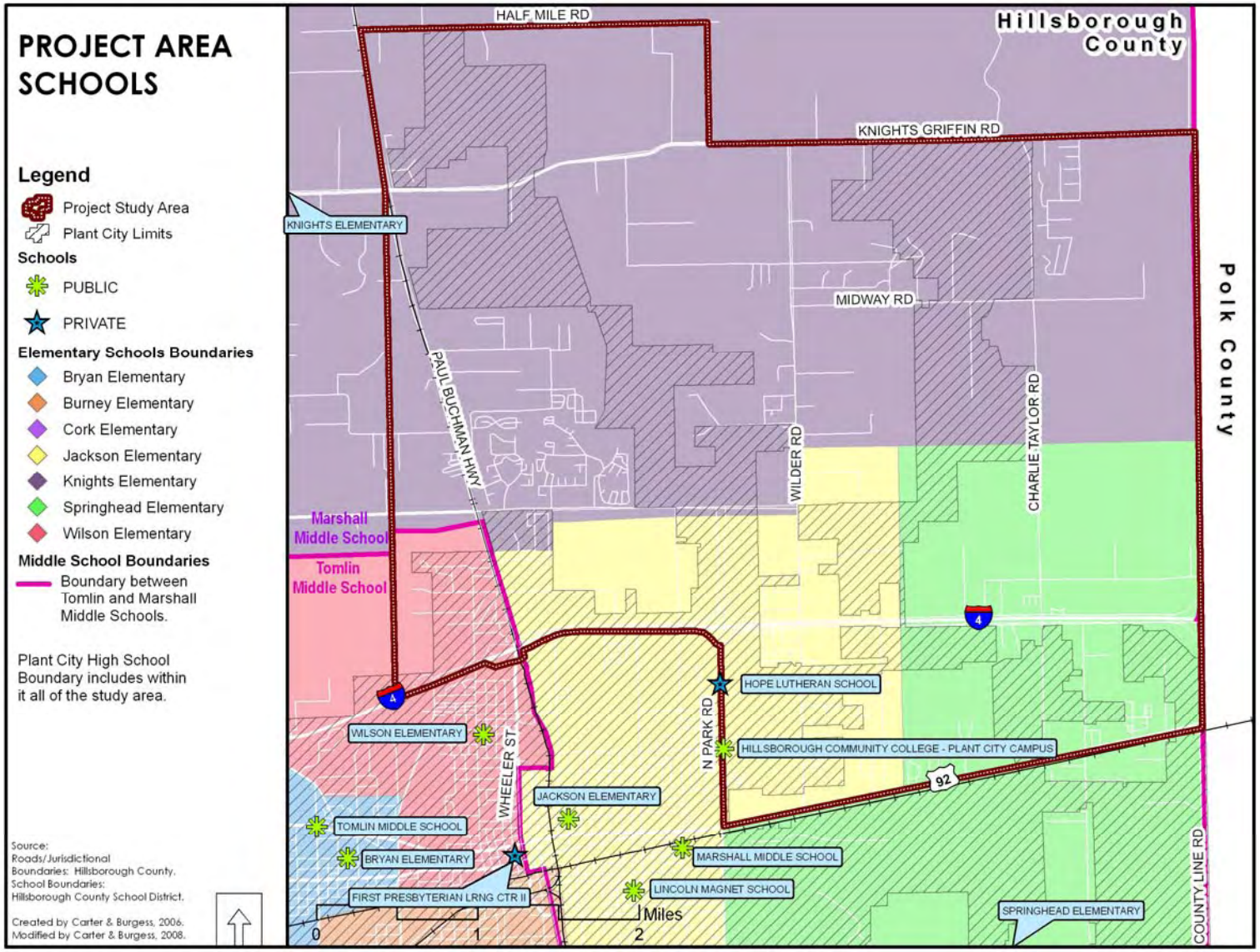


Figure 8: Wetlands

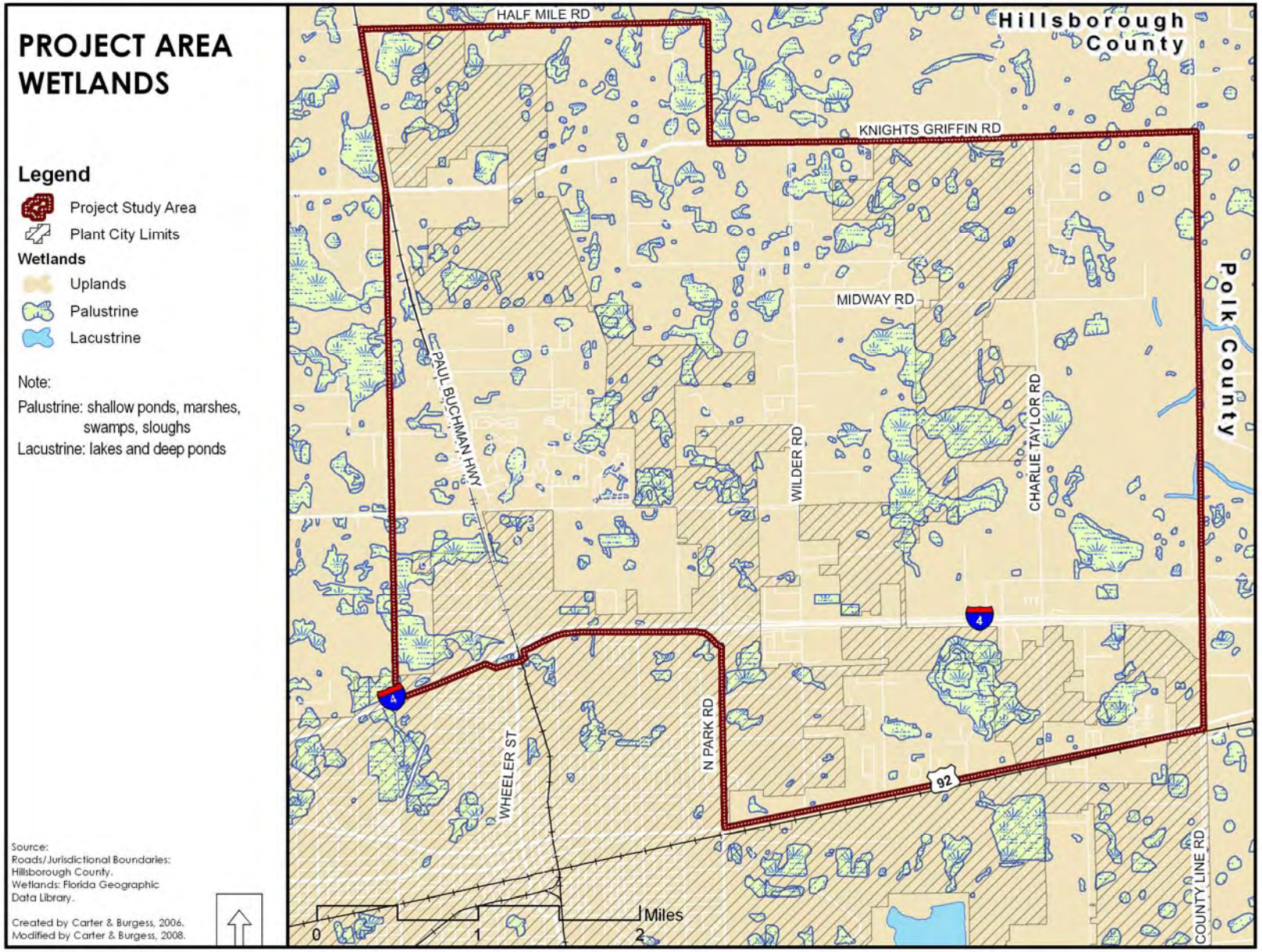


Figure 9: Floodplains

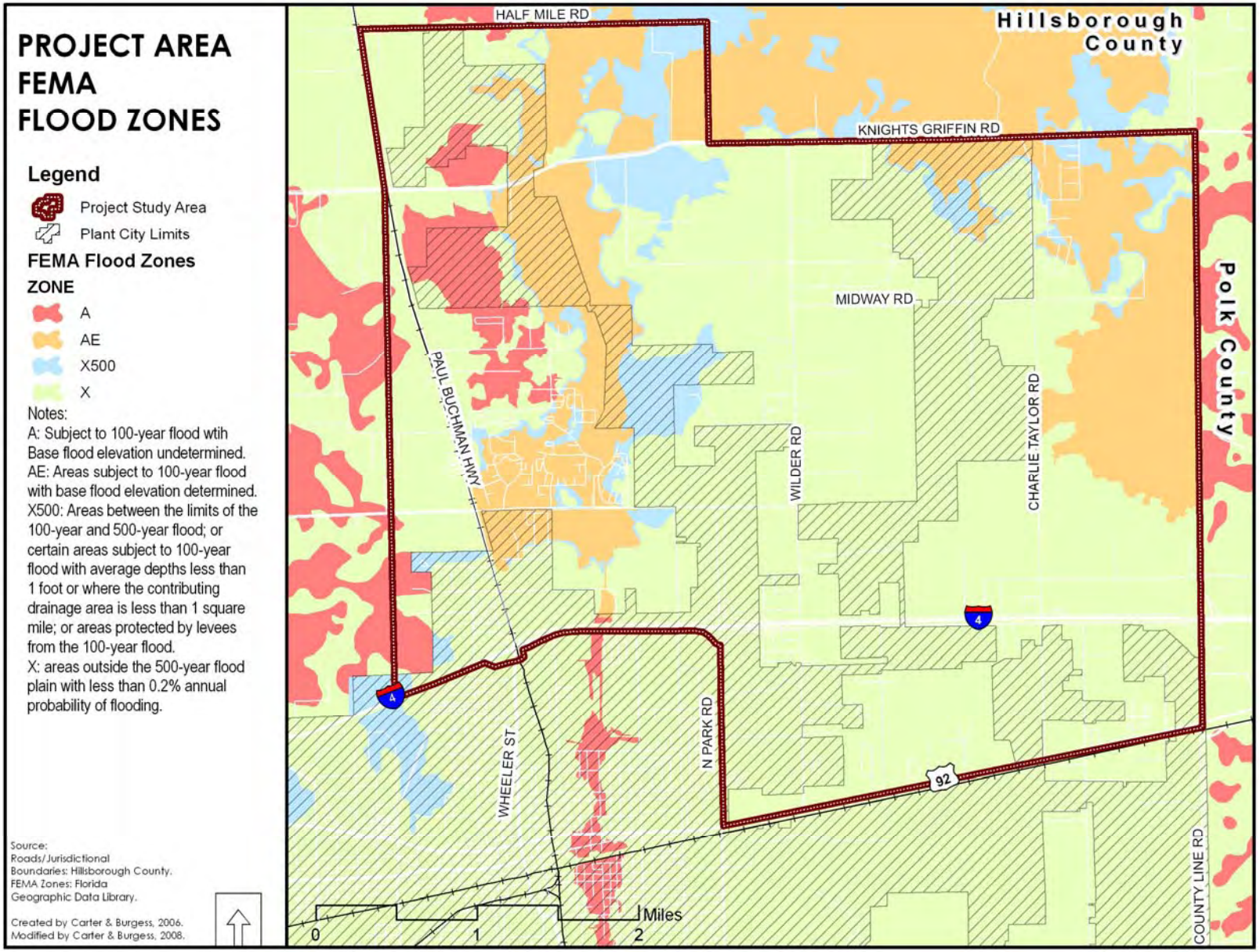


Figure 10: Surface Water Protection Areas

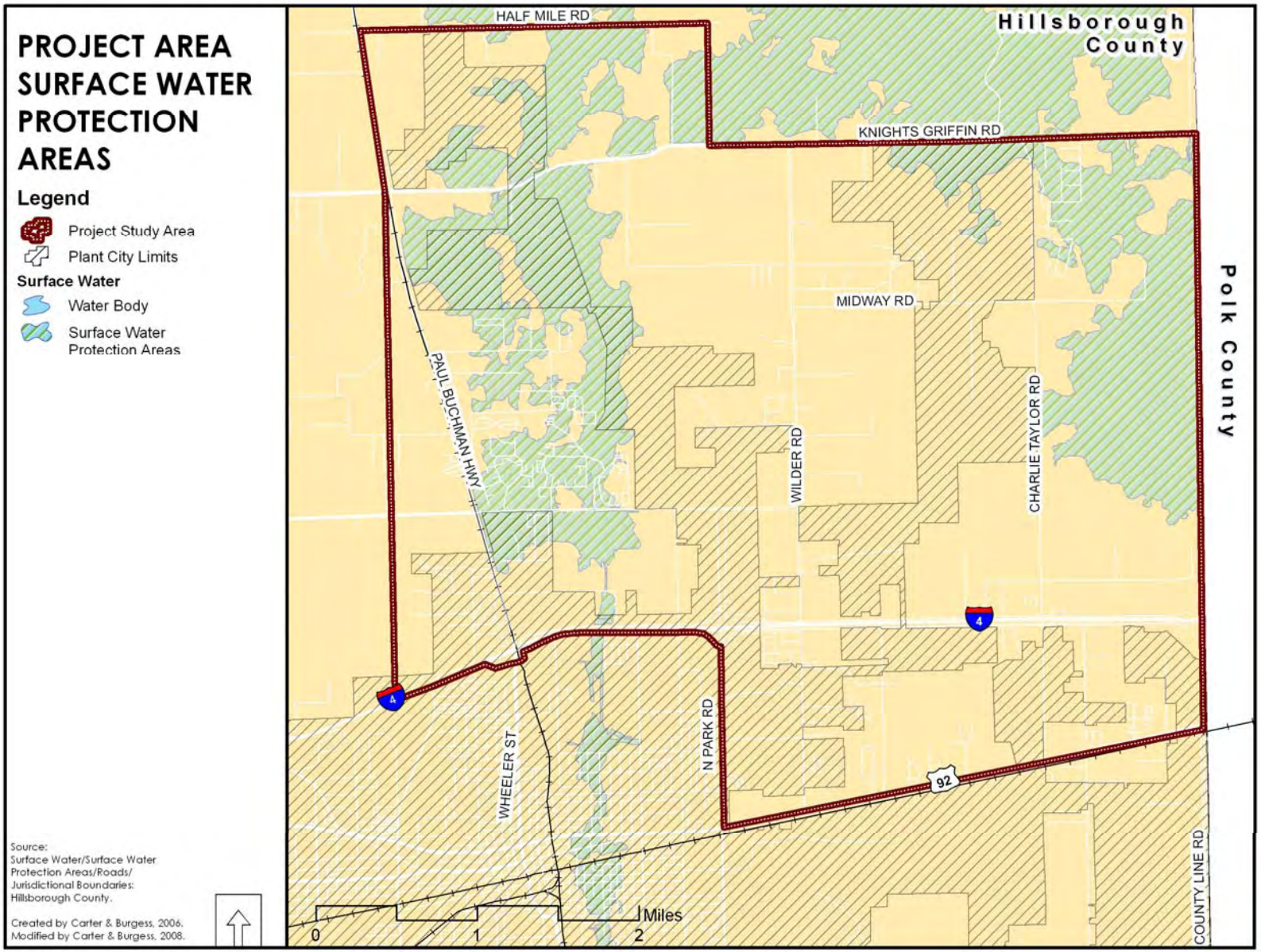


Figure 11: Wellhead Protection Areas

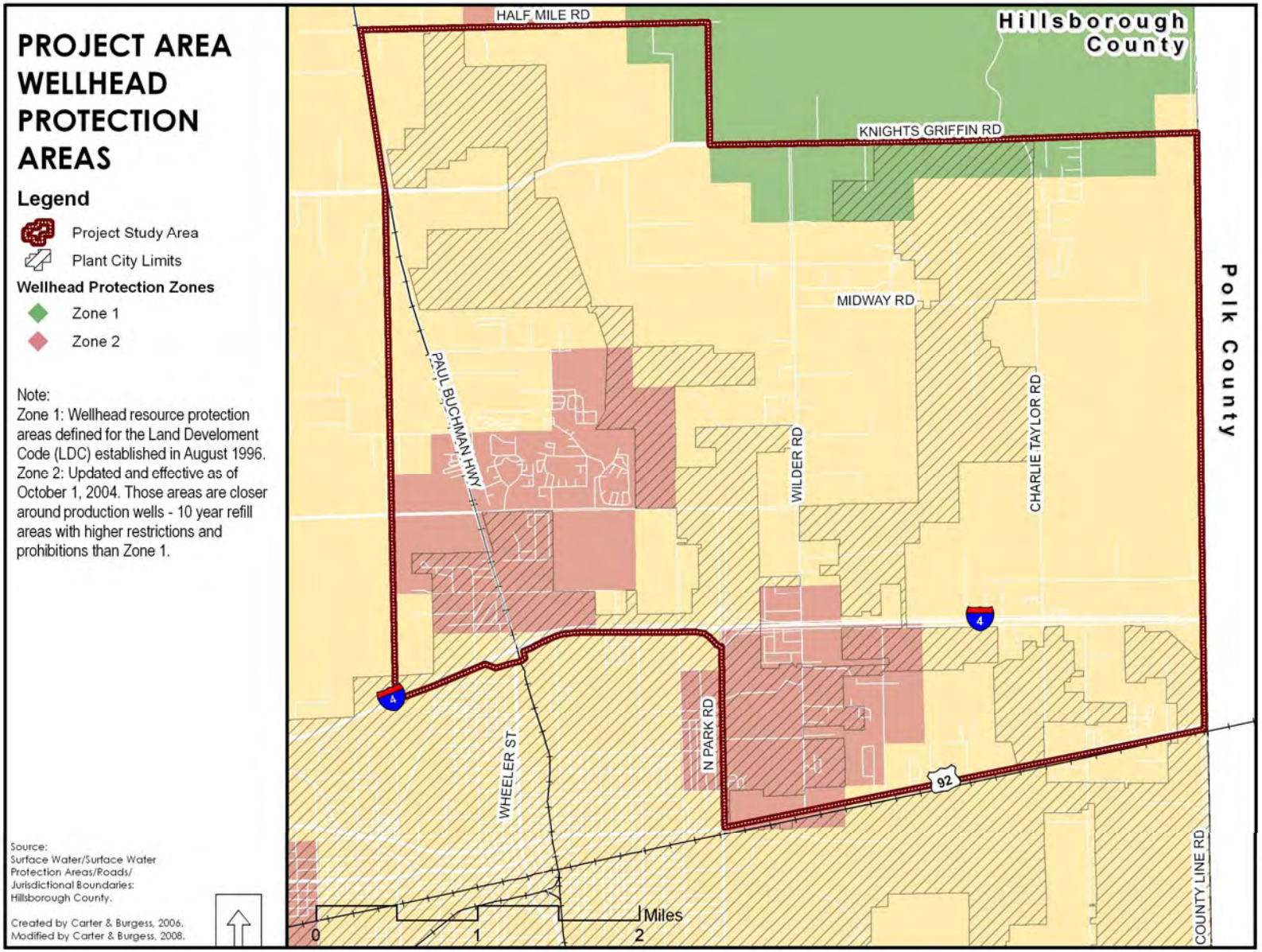


Figure 12: Significant Wildlife Habitat Areas

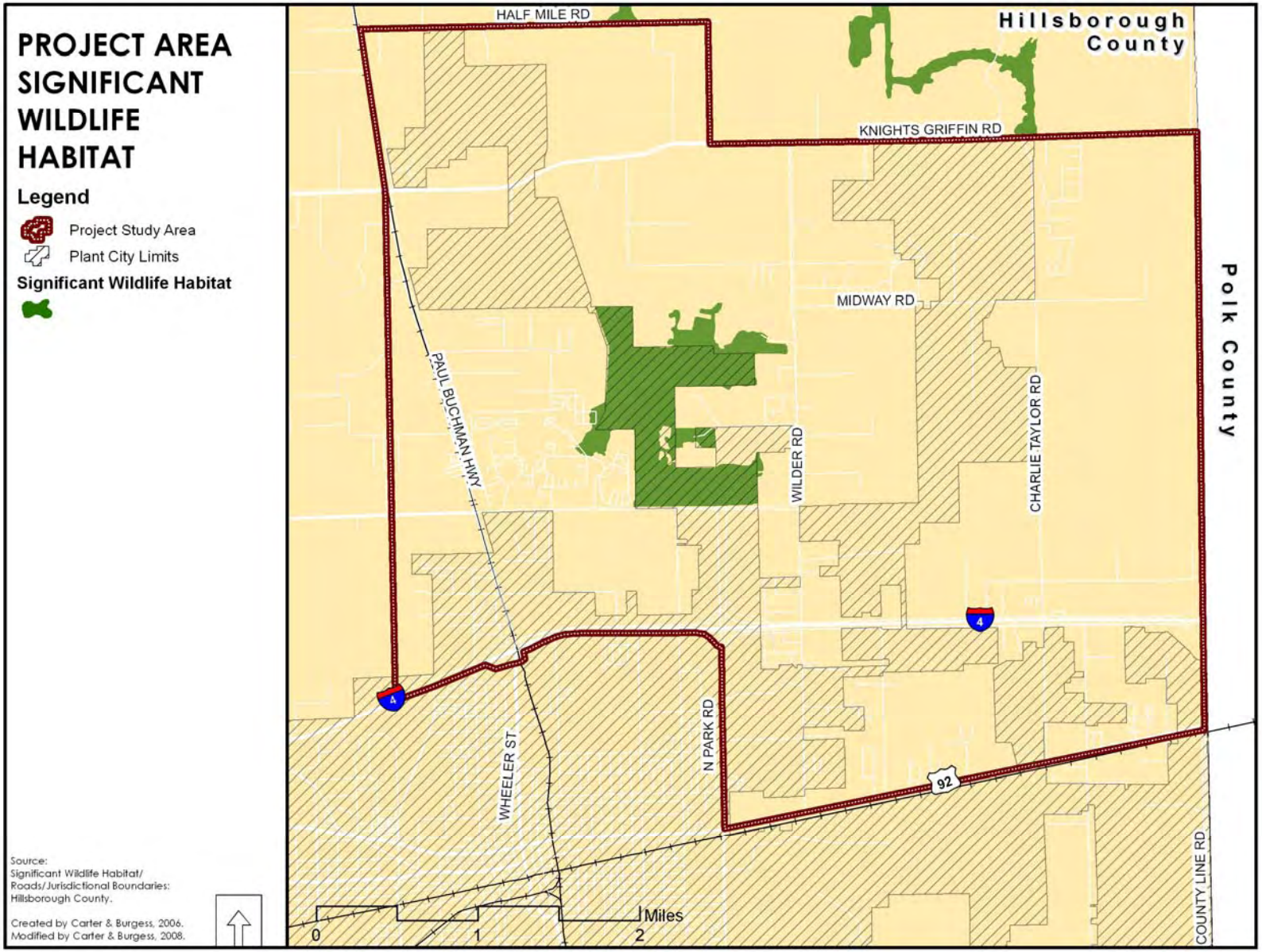


Figure 13: Topography/Slope

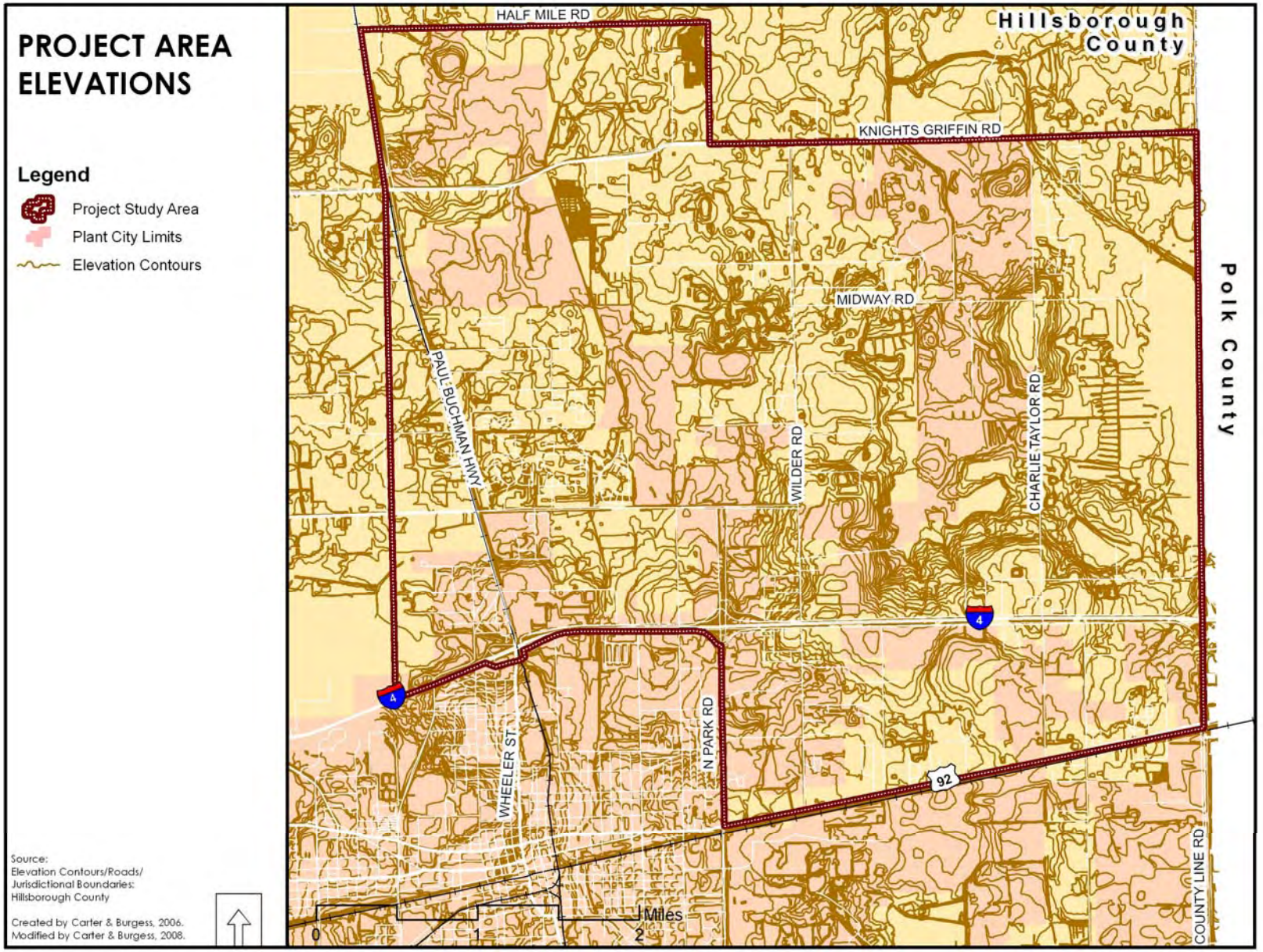


Figure 14: Environmental Conservation Areas

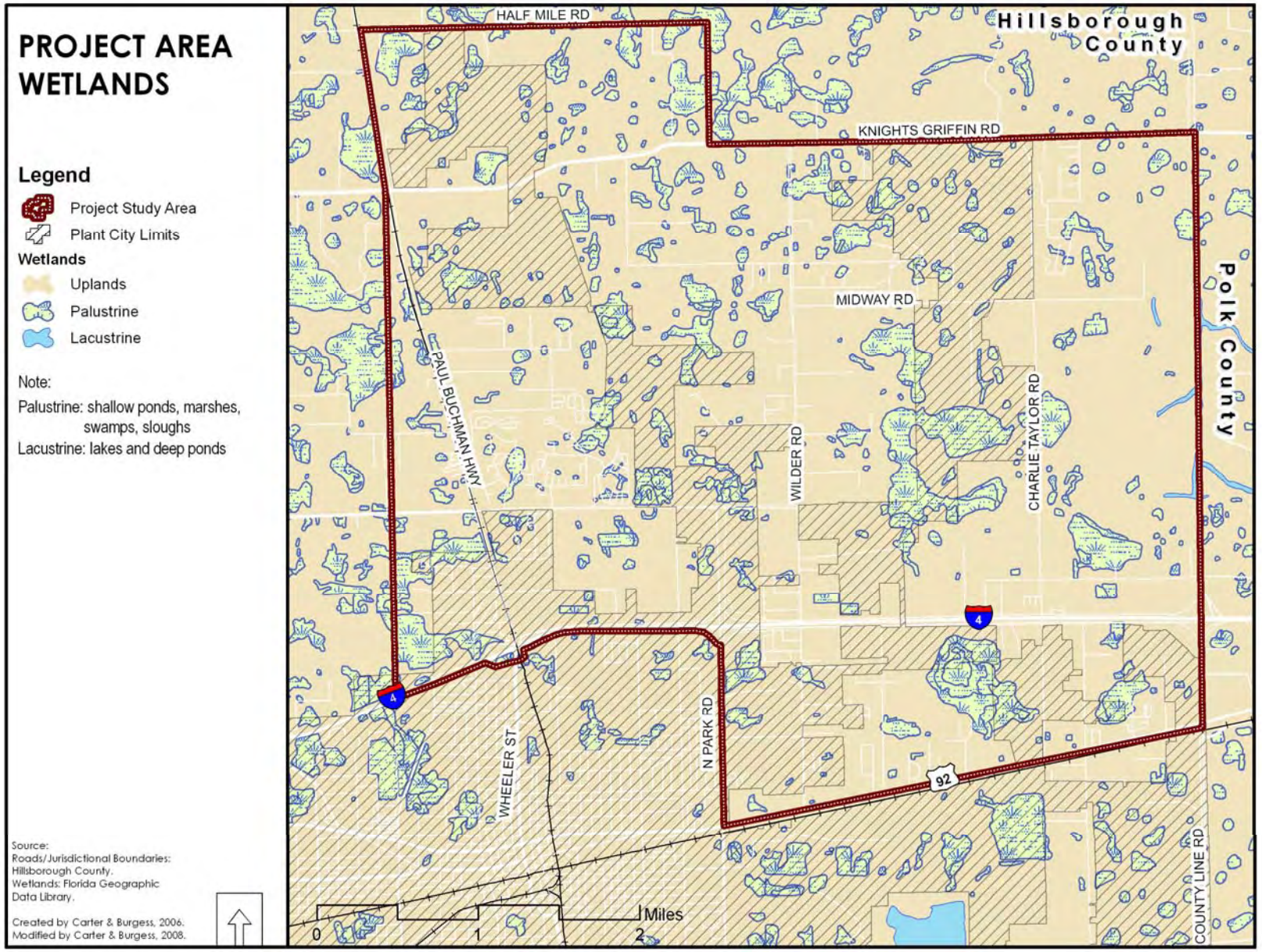


Figure 15: Cemeteries Identified by the Florida Master Site File

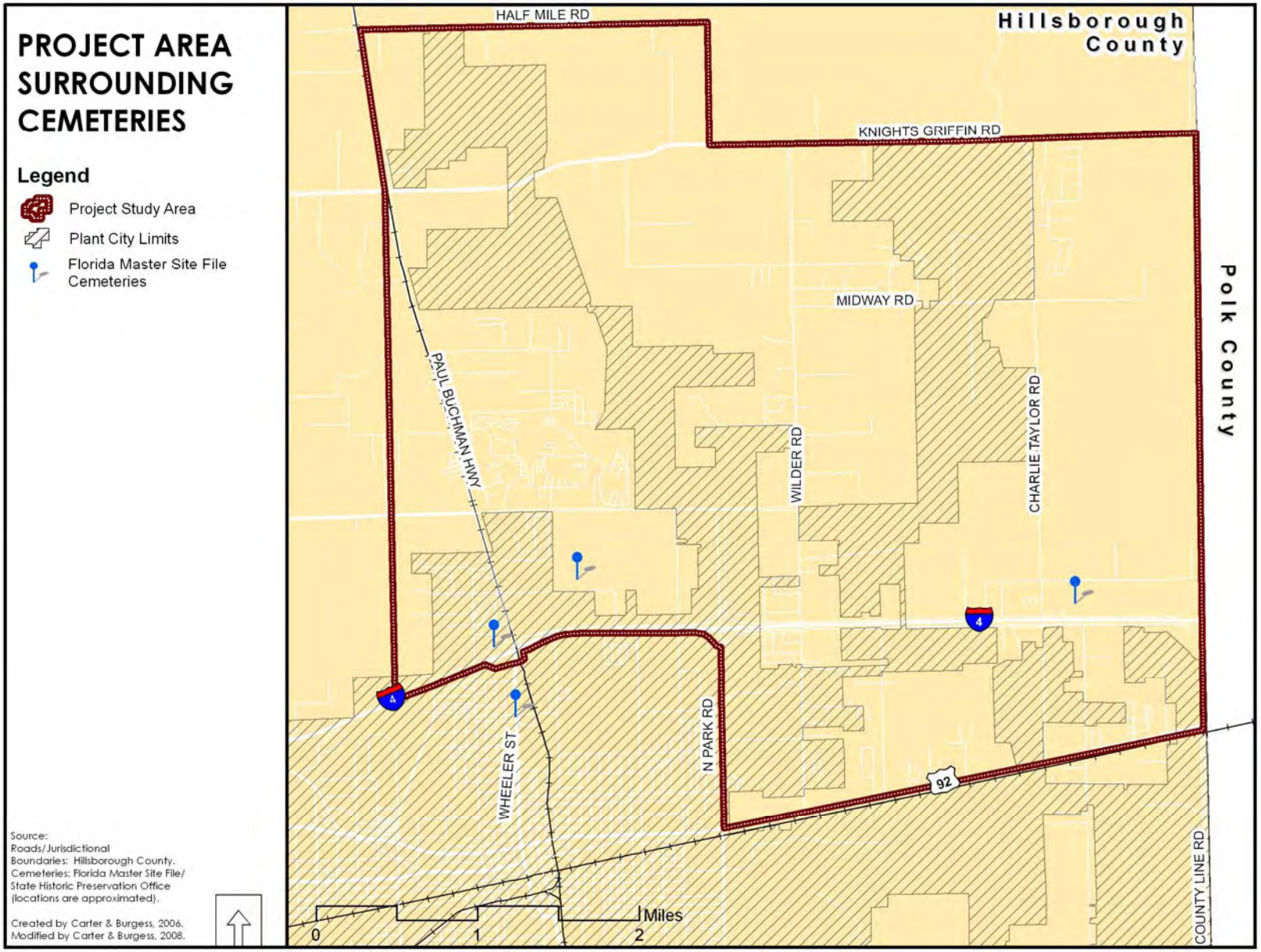
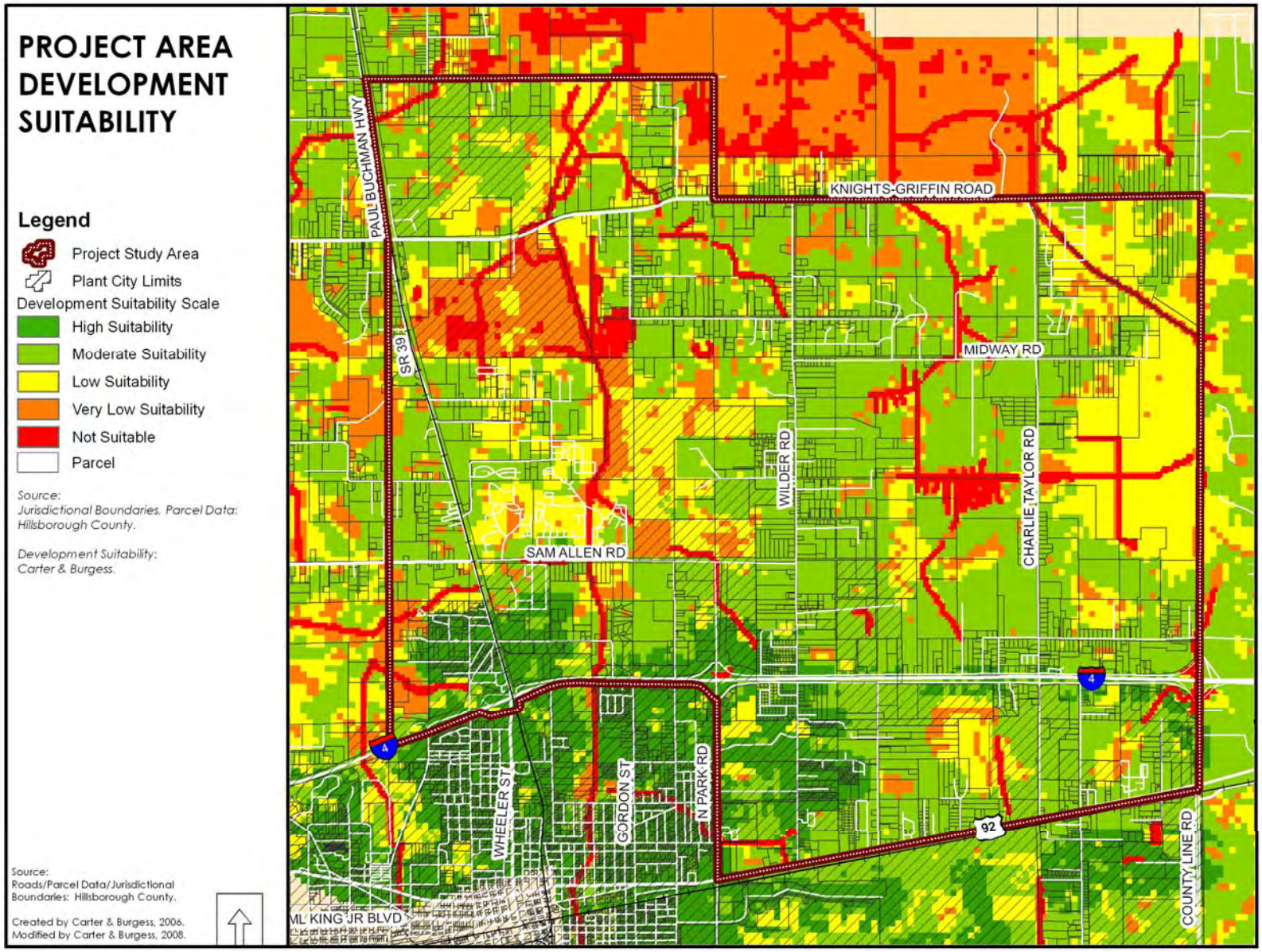


Figure 16: Development Suitability Analysis Results



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4. Guiding Principles

The next step in the master plan process was to develop a set of Guiding Principles that would be used to shape the alternative future land use and transportation scenarios. There were three key ingredients in the creation of these principles:

1. Stakeholder interviews as described in Section 2.
2. Review of the draft set of principles with the Technical Working Group.
3. Review and approval of the principles by the City Commission.

The final result was the set of principles and implementation strategies presented below.

Guiding Principle: Home Town Character

Strategies:

1. Ensure accessibility between neighborhoods.
2. Promote connectivity to Downtown.
3. Encourage compatible residential development (scale and size).
4. Promote a Livable Community.

Guiding Principle: Economic Diversity

Strategies:

1. Consider existing and future development.
2. Provide adequate land area for employment opportunities.
3. Encourage a variety of commercial uses.

Guiding Principle: Adequate Infrastructure

Strategies:

1. Preserve land for civic uses (schools, parks and recreation, etc.).
2. Cluster civic uses.
3. Encourage multimodal transportation.
4. Share infrastructure costs equitably.
5. Encourage local vehicle trips on local roads.
6. Preserve and enhance regional transportation systems and functions.

Guiding Principle: Sustainable Natural and Built Environments

Strategies:

1. Diversity in housing options.
2. Ensure provision of adequate open space.
3. Protect productive agricultural lands.
4. Appropriately locate higher density residential and nonresidential uses.

The following is provided to better explain the reasoning behind the Guiding Principles and their associated strategies.

Principle: Preserve Home Town Character

When asked what made Plant City unique, nearly every interviewee responded with "small town charm" or character. The follow up question asked the respondent to identify what was responsible for creating this character. While many of the elements that were cited are not related to land development patterns, the strategies associated with this principle are the translations of how the physical environment affects the social fabric of a community.

Strategy 1. Ensure accessibility between neighborhoods.

This means that the majority of the new residential development in the Study Area should allow for interconnections. An example of how this strategy may be illustrated on the land use scenarios is residential areas with more than one access point and with internal interconnections.

Strategy 2. Promote connectivity to Downtown.

Similar to the first strategy, this refers to both a physical connection to Downtown and the areas of the City located south of I-4, as well as to preserving the role of Downtown. In the physical regard, this may be demonstrated on the land use scenarios by enhancing existing connections under I-4 and to Downtown with pedestrian and bicycle paths or greenways. From the perspective of preserving the

role of Downtown, this means that proposed development within the Study Area will not compete with Downtown.

Strategy 3. Encourage compatible residential development (size and scale).

This strategy refers primarily to ensuring that new residential areas in the Study Area are compatible with the existing residential and/or appropriately buffered. On a larger scale, it also suggests that the residential development pattern in this area should not be drastically different from residential patterns existing in the City.

Strategy 4. Promote a Livable Community.

Livable Communities is a planning concept that encourages a return to pre-World War II development patterns of compact, walkable communities. The principles of Livable Communities include human scale buildings that create a sense of place and community; an interconnected system of streets and paths that encourage bicycle and pedestrian use; narrow streets (where appropriate) to help slow traffic and create a safer environment for pedestrians.

Principle: Economic Diversity

A majority of the interviewees recognized the need for a mixture of uses within the Study Area. In addition to providing for support services such as grocery stores and other retail and service uses, many interviewees recommended that employment opportunities be provided.

Strategy 1. Consider existing and future development.

This strategy refers to the need to consider existing and proposed developments within the Study Area, other areas of the City, such as Midtown or the Lakeside Station DRI, as well as adjacent communities like Polk County, Lakeland, Brandon, and Tampa. The point is to prevent planning for the Study Area in isolation when other the activities and plans for nearby communities impact the market in Plant City and the Study Area. How this translates into the land use scenario plans is that the plans should not show an excess of any particular non-residential use if there is

already a sufficient supply of that use in a nearby area and the proposed growth of the region will not support additional development. Since a market analysis is not included as part of this project, the Consultant will make use of the best available existing data.

Strategy 2. Ensure adequate land areas for employment opportunities.

Closely tied to the first strategy, this means that sufficient land area should be included in the land use scenarios to accommodate employment areas. There was significant discussion during the interviews as to the types of employment opportunities to provide. This is another issue that is best addressed following a market analysis and policy discussion. For the land use scenarios, a variety of employment opportunities will be considered as a means to diversify the economic base of the City and to address the transportation goals of the project. As a result the City may determine that additional distribution facilities may not be the best and highest use in this area.

Strategy 3. Encourage a variety of commercial uses.

The purpose of this strategy is to ensure that a range of commercial uses, in terms of size and type, be considered for the Study Area. Commercial uses are distinguished from employment opportunities in their focus on providing goods and services to residents of the area. Thus, while they may offer employment opportunities, their primary purpose is to provide for the everyday needs of the community.

Principle: Adequate Infrastructure

A critical component of this project is ensuring that there is adequate infrastructure available to support proposed growth. From a land use perspective, the provision of adequate infrastructure relates to ensuring sufficient land is available and the efficiency of providing the infrastructure is directly related to the development pattern.

Strategy 1. Preserve land for infrastructure and civic uses.

The proposed land use scenarios should ensure that adequate land is set aside for rights-of-way, public schools, parks and recreational facilities, government buildings, and other civic uses.

Strategy 2. Cluster civic uses.

Whenever feasible, co-locate civic uses to more efficiently use land area; for example co-locate schools and parks.

Strategy 3. Encourage multimodal transportation.

This refers to ensuring that appropriate facilities are provided for bicycles and pedestrians, as well as vehicles. As an example, the land use scenarios may show a series of greenways connecting residential and non-residential areas as a means to encourage other forms of transportation.

Strategy 4. Share infrastructure costs equitably.

The equitable distribution of infrastructure costs depends upon the placement of development and the phasing or timing of development. The proposed land use scenarios will seek to locate development in areas already served by infrastructure or where required expansion is limited. The scenarios will not address phasing/timing, but this may be addressed as part of the follow up activities.

Strategy 5. Encourage local vehicle trips on local roads.

To protect the function of regional and intrastate roadways, the proposed land use scenarios and accompanying transportation improvements should provide adequate facilities and connectivity to encourage local trips (e.g. trips within Plant City) to use local roadways.

Strategy 6. Preserve and enhance regional transportation systems and functions.

As a complement to strategy 5, this strategy seeks to preserve regional transportation functions. Translating this to the land use scenarios, implementation of this strategy

could include identification of a park-n-ride facility and/or extensions or improvements to roadways that provide regional connections.

Principle: Sustainable Natural and Built Environments

This means that the proposed land use scenarios will strive to achieve a development pattern that meets the needs of the projected population while ensuring that adequate provision is made for the natural environment. The development pattern should also recognize and allow for the continued growth of the area.

Strategy 1. Diversity in housing options.

Key to any sustainable community is the provision of housing options that allows for a mix of economic cohorts. The land use scenarios will reflect a variety of housing types to accommodate both renters and owners.

Strategy 2. Ensure provision of adequate open space.

Open space, whether urban (e.g. plaza) or green, is important to the health of a community. Through the land use scenarios, adequate land areas will be reserved for open space. The reservation of this land does not imply that it will be publicly acquired, but rather that residential density and non-residential uses will not be assigned to the entire land area.

Strategy 3. Protect productive agricultural lands.

The Study Area includes some land that is currently in active agricultural production. The land use scenarios will identify those parcels that could be preserved for agricultural use and ensure that an appropriate buffer is provided between these parcels and adjacent development. These agricultural parcels will not be recommended for inclusion in the City's boundaries. To the extent feasible, the land use scenarios will discourage the leapfrogging of residential development over agricultural lands.

Strategy 4. Appropriately locate higher density residential and nonresidential uses.

Specifically, the land use scenarios will identify corridors and nodes that are appropriate locations for higher density residential development and nonresidential uses. During the interviews, some specific corridors were suggested. Through collaboration with the transportation analysis, the most appropriate locations that preserve regional roadway function will be identified.

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5. Future Land Use and Transportation Scenarios

Once the Guiding Principles were established, the focus turned to the creation of alternative future land use scenarios and supporting roadway improvements for the Master Plan. This was a coordinated and iterative process where the land use and transportation planners worked together. For ease of reading, the process for each of these scenarios is separated, focusing on land use and then transportation. Within each section coordination between the two processes is highlighted.

5.1. Alternative Future Land Use Scenarios

The land use planning process started with the first task, Existing Conditions. As part of the Existing Conditions Report, a Development Suitability Map was created (see Figure 16). The purpose of this map was to identify the areas within the Study Area that are appropriate for development from the perspective of physical conditions, such as slope, floodplains, wetlands, etc. In examining the Development Suitability Map, it was apparent to the planning team that the Study Area could be subdivided into four planning areas, divided by significant environmental resources. Figure 17 shows the planning areas that were created for this study.

Information on approved development within the Study Area was provided to the consultant and overlaid on the base map created for the future land use scenarios. This base map included the natural features identified through the development suitability analysis, existing roadways, and the approved development information. One of the largest properties within the Study Area, referred to as the Cone Graham property, initiated an amendment to the Future Land Use Map at roughly the same time as the master plan study began. Throughout the planning process, the consultant and City staff met with representatives of the Cone Graham property to discuss their plans for the property and how the master plan may affect them.

The first step in establishing the land use scenarios was creating the linkages between environmentally sensitive and open space areas. These linkages are shown on the

land use scenarios as dashed green lines that are identified as possible greenways. Continuing with the linkages concept, a preliminary roadway network was developed that improved east-west connectivity throughout the area and created a grid network to the greatest extent practical. The future land use alternatives development was separated into three distinct phases: preliminary alternatives; refined alternatives; and preferred alternative.

5.1.1. Preliminary Future Land Use Alternatives

Two preliminary alternative land use scenarios were created by separate planning teams with different focuses. One alternative, known as Scenario A (see Figure 18), was more uniform in its pattern and spread development across the study area. This scenario yielded a higher level of development in terms of both residential and nonresidential uses because more land was being consumed for development. The other alternative, known as Scenario B (see Figure 19) employed a village or community center where the highest intensity of use occurs with commercial/ office/residential mixed use. The intensity of development decreases as it moves away from the village center. The one constant in both of these scenarios was the land use plan for the southern planning area, that portion of the Study Area located south of I-4, which focused on supporting Downtown Plant City and the Study Area's connection to Downtown.

5.1.1.1. Scenario A Description by Planning Area

In the West planning area the existing intensity of development in built-out areas was recognized and density was increased in non built-out areas around roadways, such as at nodes along Alexander Street, Sam Allen and SR 39. The industrial land uses were maintained and the commercial areas near Park Road were extended.

In the Central area, the development proposed on the Cone Graham property (per the information available at that time) was duplicated. A larger area of commercial was created near the interchange of Park Road at I-4 to concentrate nonresidential use in this area.

For the Eastern area, low density residential was assigned (R-4, which is higher than current designation). The following table provides some details about the land uses within Scenario A.

Table 3: Land Use Breakdown within Scenario A

Type of Use	Land Area Utilized
Residential (37,000 dwelling units)	7,100 acres
Recreation & Open Space	3,700 acres
Commercial	778 acres
Industrial	650 acres

Source: Carter & Burgess, Inc., 2007

5.1.1.2. Scenario B Description by Planning Area

In the Western area, the residential densities were increased from R-1 to R-4 and additional density added along SR 39 at the intersections with Sam Allen, Joe McIntosh and Knights Griffin.

In the Central area, the majority of the development was focused in the center of the Study Area at the proposed Village Center located on the east side of Wilder Road, equidistant between Sam Allen Road and Midway Road. Densities were scaled down away from the Village Center, but the proposed scenario represents an increase over current permitted densities. The existing commercial area along Park Road was extended to the east side.

In the East area, the existing agricultural land use patterns were mostly maintained. Some intensification in the area between Swindell Road and I-4 is proposed, as well as a slight increase in residential density on the east side of Charlie Taylor Road south of Midway. Additional commercial areas were identified at intersections along Charlie Taylor Road and on the south side of Knights Griffin (as identified in the Cone Graham proposed development at that time).

The South area was maintained as closely as possible to the existing development patterns and is the same in both Scenarios A and B. The following table shows some details about Scenario B.

Table 4: Land Use Breakdown within Scenario B

Type of Use	Land Area Utilized
Residential (33,000 dwelling units)	7,400 acres
Recreation & Open Space	3,850 acres
Commercial	505 acres
Industrial	750 acres

Source: Carter & Burgess, Inc., 2007

Once prepared, these scenarios were discussed with staff from the City's Planning and Zoning Department and the Planning Commission. Recommendations resulting from those discussions included:

- Changing all of the areas identified as R-1 to R-4, since this is the minimum density for the City.
- Relocating the proposed Village Center in Scenario B since the current location is an area with many small parcels.
- Reducing the amount of Recreation & Open Space areas and indicating the proposed greenway system in a different manner.

Due to time constraints, not all of these issues and those raised by the Technical Working Group were incorporated into the land use scenarios prior to the first transportation model analysis. It was agreed that these changes would be incorporated into the revised land use scenario and reflected in the second transportation analysis.

Up to this point, the preparation of land use and transportation scenarios proceeded in isolation. Prior to completing the first set of transportation model runs, the proposed roadway improvements identified in the two alternative future land use scenarios were included in the preliminary roadway scenario as appropriate (e.g. new local roadways were not included in the No Build Network model analysis). Further, socio-economic data (numbers of households, employees, and students) from each of the future land use alternatives had to be generated by Traffic Analysis Zone (TAZ) and provided to the transportation modelers. (Note: There are other categories of uses and factors that were

used in the model, such as hotel rooms, vacancy rates and seasonal rates for dwelling units that were assumed from the existing model data.)

Generation of the TAZ data was a complex and repetitive process. Starting with spreadsheets that identify the number of acres within each TAZ and identifying the acreage of different land uses within these zones, the total number of households was calculated by multiplying the permitted density of each land use designation by the number of acres available. Student generation rates were then determined using information from the Hillsborough School District that applies generation rates to different types of residential units. For example, a detached single family home is expected to generate 0.188 elementary school student, 0.117 middle school student, and 0.133 high school student. The generation rates are different for attached single family homes and multifamily homes. For the study's purposes it was assumed that residential units developed in the Residential-4 land use designation or lower were detached single family. Residential units developed in either the Residential-6 or Residential-12 categories were assumed to be attached single family, or townhouses. Any residential development in the Residential-20 or Mixed Use categories were assumed to be multifamily, or apartments.

The number of schools required was then determined by dividing the number of students generated at each level by the median number of student stations provided district wide. For elementary schools the median number of student stations used was 956, for middle schools it was 1,550, and for high schools it was 2,507. Since the number of residential units in both Scenario A and B was close, the number of school facilities required for each scenario was the same: five elementary schools, two middle schools and one high school. The next step was to identify locations for these facilities on the future land use alternatives.

Using average school site sizes obtained from the School District, it was assumed that an elementary school requires a minimum of 15 acres, middle schools require a minimum of 25 acres, and high schools require a minimum of 40 acres. Following School District policy of locating schools on either arterials or collectors, locations within each

future land use scenario were identified by considering the student generation rates for each school level in a given area and finding an appropriate location[1]. Once these locations were identified, the land use spreadsheet was revised by adding the appropriate acreage of institutional land and subtracting acreage from the appropriate land use designation where the school was located. These amendments to land use acreages resulted in changes to the student generation rates; however, the changes were not significant enough to require a change in the number of school facilities required. Finally, the TAZ where the school facility was located (for planning purposes only) was identified as having student enrollment and the appropriate number of students were assigned.

With land use acreages for residential, institutional and nonresidential resolved, the focus then turned to estimating the number of employees in each TAZ. A correlation between trip generation rates per 1,000 square feet and number of employees per 1,000 square feet was determined using the Institute of Traffic Engineers' *Trip Generation* manual. The following table provides the results of this research.

Table 5: Number of Square Feet per Employee by Land Use

Land Use Category	Number of Square Feet per Employee
Industrial	500
Commercial	500
Institutional	300

Source: Carter & Burgess, Inc., 2007

The total square feet for each type of use was calculated by determining the number of square feet of land area in each category in each TAZ and applying an appropriate floor area ratio factor. For commercial uses, a floor area ratio (FAR) of 0.25 was used, for industrial an FAR of 0.35 was used and for institutional an FAR of 0.25 was used. The resulting square feet were then divided by the appropriate factor to determine the number

[1] When comparing the maps to the text, the total number of school sites identified on the maps does not equal the eight facilities identified in the text. It was assumed that some of the school locations may be outside of the Study Area to support changes in population occurring in these adjacent areas. Also, in Scenario B, it was assumed that there would be co-location of an elementary and middle school within the Town Center.

of employees within each TAZ. Spreadsheets containing this detailed TAZ information are provided in Appendix E.

5.1.2. Refined Future Land Use Scenarios

Following the initial transportation model runs, a significant difference in the impact to I-4 was not identified between the two land use scenarios. The greatest difference between the two scenarios was evidenced instead on the local and county roadway networks within the Study Area. The initial intent was for the transportation analysis to show a clear distinction between the land use scenarios, enabling the Technical Working Group to select a preferred scenario for further analysis. Since this did not occur, a different approach was taken.

The two land use scenarios were compared to the Guiding Principles and an evaluation system was developed that determined which scenario more closely met the established Guiding Principles. A copy of this evaluation is included as Table 6 below. The results of this evaluation indicated that Scenario B was most appropriate for achieving the Guiding Principles, and the issue was taken before the City Commission for approval. At their August 13, 2007, City Commission Workshop, the Commissioners agreed to move forward with Scenario B, as revised in Figure 20 to address the comments of the City and Planning Commission staff.

Table 6: Assessment of Alternative Future Land Use Scenarios by Guiding Principle

Guiding Principle & Strategies	Scenario A	Scenario B
Home Town Character		
Strategy #1: Accessibility between neighborhoods	–	+
Strategy #2: Connectivity to Downtown	O	O
Strategy #3: Compatible residential development	O	+
Strategy #4: Livable Community	O	+
Economic Diversity		
Strategy #1: Existing and future development	+	O
Strategy #2: Adequate land for employment	O	O
Strategy #3: Variety of commercial uses	+	O

Guiding Principle & Strategies	Scenario A	Scenario B
Adequate Infrastructure		
Strategy #1: Land for civic uses	O	✚
Strategy #2: Clustering of civic uses	—	✚
Strategy #3: Multimodal transportation options	O	✚
Strategy #4: Share infrastructure costs equitably	O	O
Strategy #5: Local trips on local roads	—	—
Strategy #6: Preserve regional transportation functions	—	—
Sustainable Natural and Built Environments		
Strategy #1: Diversity of housing options	—	✚
Strategy #2: Provision of open space	O	✚
Strategy #3: Protect productive agricultural lands	O	✚
Strategy #4: Appropriately locate higher density and intensity	✚	✚
Total Points	**15**	**25**
Legend: ✚ = 2 points; O = 1 point; and — = 0 points		
Note: Scenarios are ranked based on the extent to which they meet the adopted guiding principles and strategies.		

Source: Carter & Burgess, Inc., 2007

5.1.3. Preferred Land Use Alternative

Coordination with the Cone Graham representatives continued throughout the land use development process and prior to completing the revised Scenario B (the "preferred alternative"), the most recent version of the Cone Graham plan was obtained. On this version of the Cone Graham plan, some changes to the proposed roadway network were noticed that led to additional changes for the selected alternative. In particular, instead of the "S" shaped roadway that provided a connection through the property from Charlie Taylor Road to Wilder Road, a "T" intersection was created by straightening the "S" curve and ending it at Lampp Road. Lampp Road was then extended east to County Line Road and west to Wilder Road. This change in the roadway network along with the relocation of the Village Center inspired some additional changes in the land use scenario, primarily

increasing the density and intensity of uses south of the proposed Village Center along Charlie Taylor Road. This preferred alternative is shown in Figure 21.

The second transportation model was run with the preferred land use scenario and a preferred build roadway network. Revised socio-economic data for the model was generated for the selected alternative following the same process outlined in Section 5.1.1.2 above. Specific details about the model results are provided in Section 5.2 of this report. However, the results indicate that a reduction of approximately 17,000 trips per day on I-4 may occur with the proposed land use and roadway scenario.

5.2. Alternative Transportation Scenarios

Similar to the future land use scenario development process, the transportation scenarios for the Master Plan were developed in two phases. The first phase was called the Preliminary Build Network and the second phase was called the Preferred Build Network. Early in the master plan process it was agreed that the transportation improvements identified for the study should be consistent for each alternative land use scenario. To examine the impacts of maintaining the status quo from a land use perspective, the "build" alternatives (Preliminary and Preferred) were compared to a No Build Network (Figure 22) that used the West Central Florida Regional Planning Model 2025 and 2030 Cost Feasible Plan networks from both the Hillsborough County and Polk County Long Range Plans, respectively.

The following briefly describes each of these transportation networks and the model results. More detailed information about the transportation work is available in the following documents provided to the Hillsborough Metropolitan Planning Organization and included in Appendix F:

- *Transportation Modeling Methodology Memorandum*, January 19, 2007
- *Transportation Alternatives Analysis Technical Memorandum*, October 2007
- *Transportation Alternatives Analysis Technical Memorandum*, November 2007

5.2.1. Preliminary Build Network

The Preliminary Build Network included the Cost Feasible Plan projects already included in the No-Build Network plus a package of transportation projects developed as part of this study. The Preliminary Build Network is shown in Figure 23. The roadway improvements included in the Preliminary Build Network are:

- Extension of Sam Allen Road to Swindell Road
- Lampp Road extension from Wilder Road to Charlie Taylor Road
- Mayday Drive extension to Charlie Taylor Road
- Williams Road extension to Knights Griffin Road
- Extension of Midway Road east and west through the Study Area

This Preliminary Build Network was tested to evaluate both preliminary land use scenarios A and B. The resulting levels of service for the Preliminary Build Network from this first model run are shown in Figures 24, 25 and 26. Figure 24 shows the "Baseline Land Use" scenario for comparison purposes. This baseline scenario used the Preferred Build Network with a future land use scenario that includes anticipated growth based on current trends and does not include land use changes identified in either land use scenarios A or B.

The results of the first model run are summarized as follows:

- The Sam Allen Road extension to Swindell Road, as indicated in the model, attracted volume in all three land use scenarios. Where these volumes were being attracted from could not specifically be identified, but it was anticipated that they were being attracted from both I-4 and SR 39.
- The Midway Road extension, a new facility, attracted noteworthy volumes in both scenarios.
- Both Scenarios A and B experienced level of service constraints along I-4, Park Road, Wilder Road, and Charlie Taylor Road.

Based on these results, there were several modifications to the roadway network proposed. These modifications would be incorporated into the next model run and included:

- Extending County Line Road to Knights Griffin as a way to potentially alleviate some congestion along Swindell Road, Wilder Road, and Charlie Taylor Road
- Extending Park Road to Knights Griffin as a means to alleviate congestion along Wilder Road and Charlie Taylor Road
- Widening Midway Road and its extension to four lanes
- Widening the Sam Allen Road – Swindell Road corridor to four lanes
- Widening Charlie Taylor to four lanes

5.2.2. Preferred Build Network

The Preferred Build Network recommended a roadway network that focused on providing new and extended east-west roadway alignments that support connectivity within the study area and attempted to provide parallel corridor facilities to I-4. Other recommendations include either widening or extending roadway facilities to support the anticipated demand of the Preferred Land Use Vision. Figure 27 graphically depicts recommended improvements proposed by the Preferred Build Network, summarized below.

<u>New Alignment or Extension</u>

- Williams Road extension from Wilder Road to Knights Griffin Road
- Midway Road extension west from Wilder Road to Alexander Street
- Midway Road extension east from Wilder Road to County Line Road
- Lampp Road extension east from Wilder Road to County Line Road extension
- Lampp Road extension northeast to Charlie Taylor Road

- Joe McIntosh Road extension west from Paul Buchman Highway to Alexander Street
- Sam Allen Road extension east from Wilder Road to Swindell Road
- Park Road extension north from Sam Allen Road to Knights Griffin Road
- County Line Road extension north from Swindell Road to Knights Griffin Road
- Cherry Street extension east from Wilder Road to Wiggins Road

Increased Roadway Capacity (within study area)

- Widen Knights Griffin Road from two to four lanes
- Widen Midway Road from two to four lanes
- Consistently widen Sam Allen Road/Swindell Road from two to four lanes

Due to the evolving nature of this project, additional analysis was required to provide an in-depth evaluation of the Preferred Build Network recommendations and their anticipated effect on study area roadways. To identify this anticipated effect, several specific roadway network links were isolated and Preferred Build Network vehicle volumes on these links were compared against existing conditions and future conditions without the implementation of master plan. As with the previous transportation alternatives, the West Central Florida Regional Planning Model (WCFRPM) was used for the purposes of a select roadway link evaluation because the WCFRPM includes Polk County and areas east of the study area. These LOS operating conditions are presented in Figures 29 and 30 and described in detail in the *Transportation Alternatives Technical Memorandum*. This analysis helped to determine if the proposed roadway improvements were alleviating congestion on I-4 and helped to refine the final transportation recommendations for the Master Plan.

If implemented, the Master Plan using the Preferred Build Network in combination with the Preferred Land Use Scenario is anticipated to reassign between 5,000 to 17,000 daily vehicle trips from I-4 and SR 39 to the proposed parallel facilities created by the extension of Midway Road and Sam Allen Road to Swindell Road. The improvements of the Master Plan

are projected to improve the LOS on Knights Griffin Road from LOS F to LOS B/C, on Midway Road from LOS F to LOS D, and along Sam Allen Road from LOS F to LOS D.

Figure 17: Study Area Planning Areas

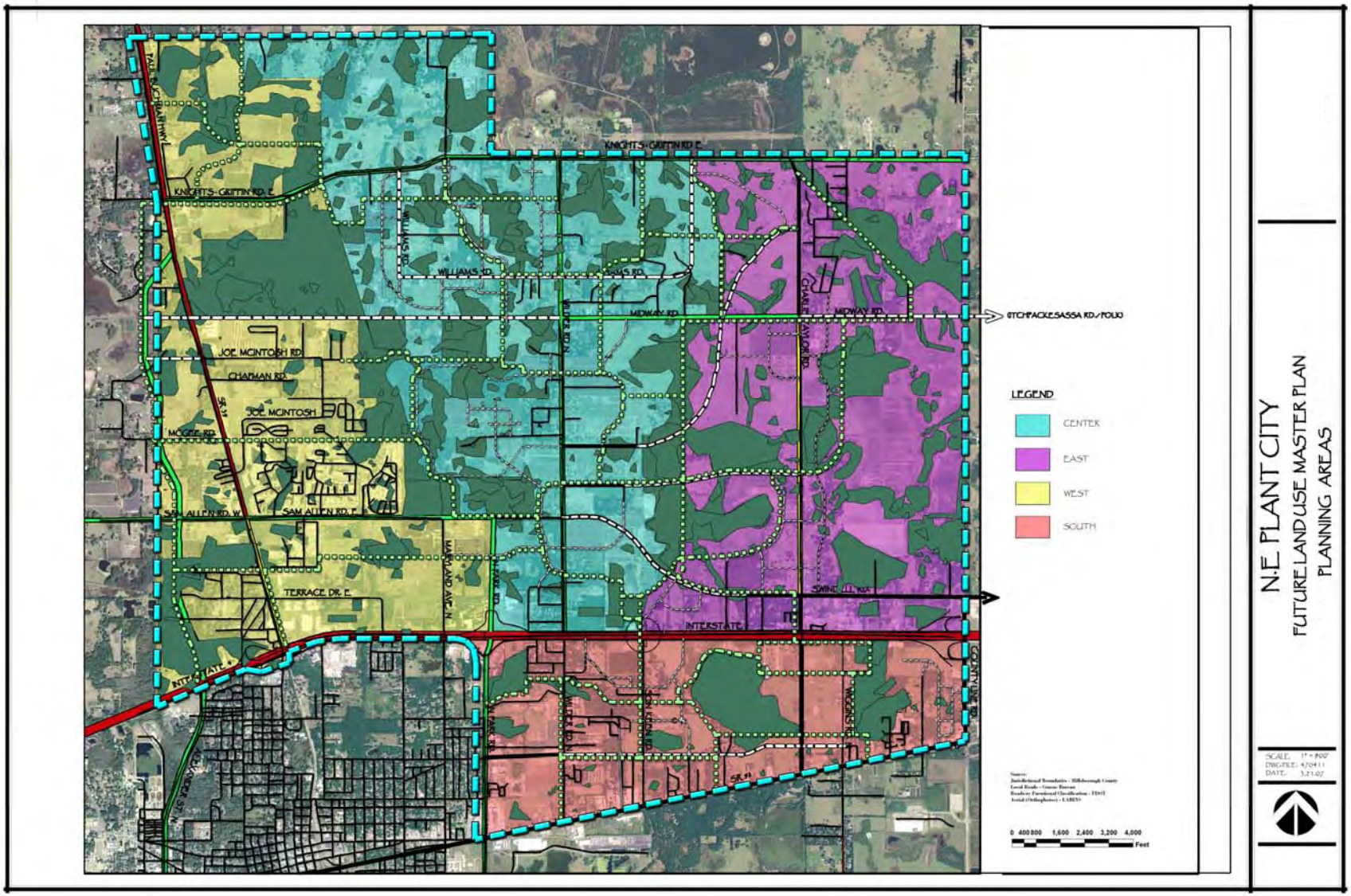


Figure 18: Preliminary Future Land Use Alternative – Scenario A

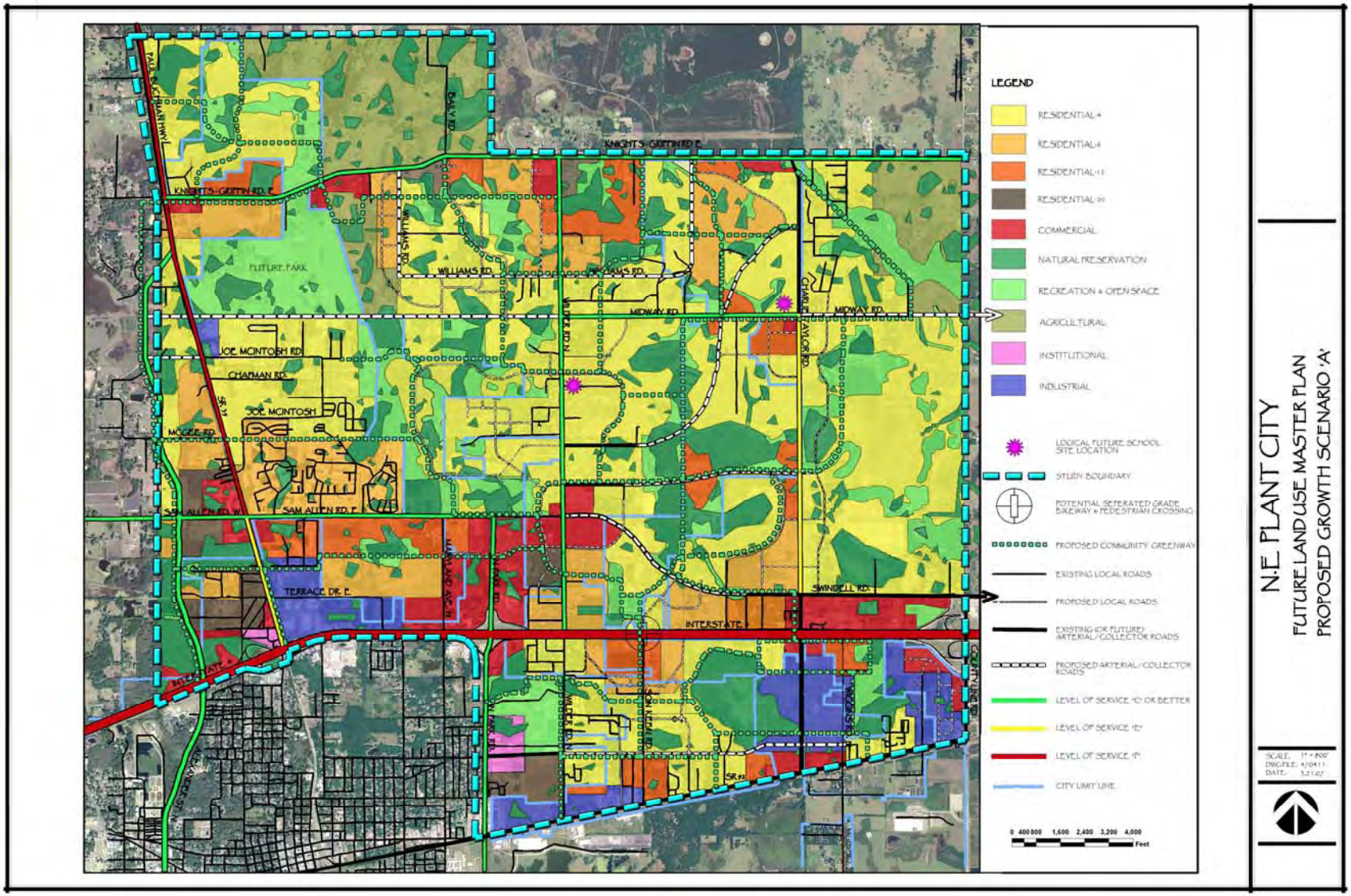


Figure 19: Preliminary Future Land Use Alternative – Scenario B

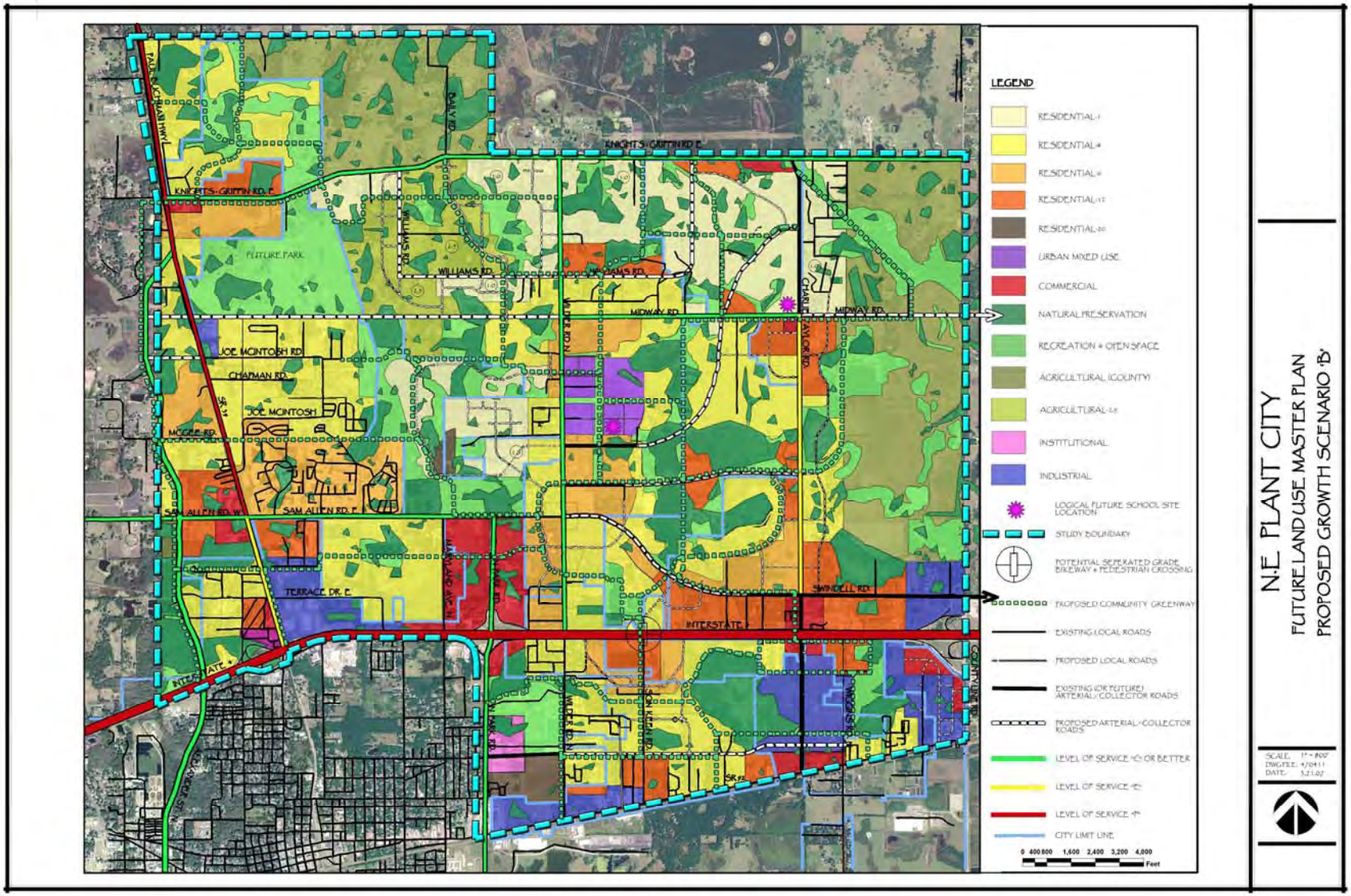


Figure 20: Revised Future Land Use Alternative – Scenario B

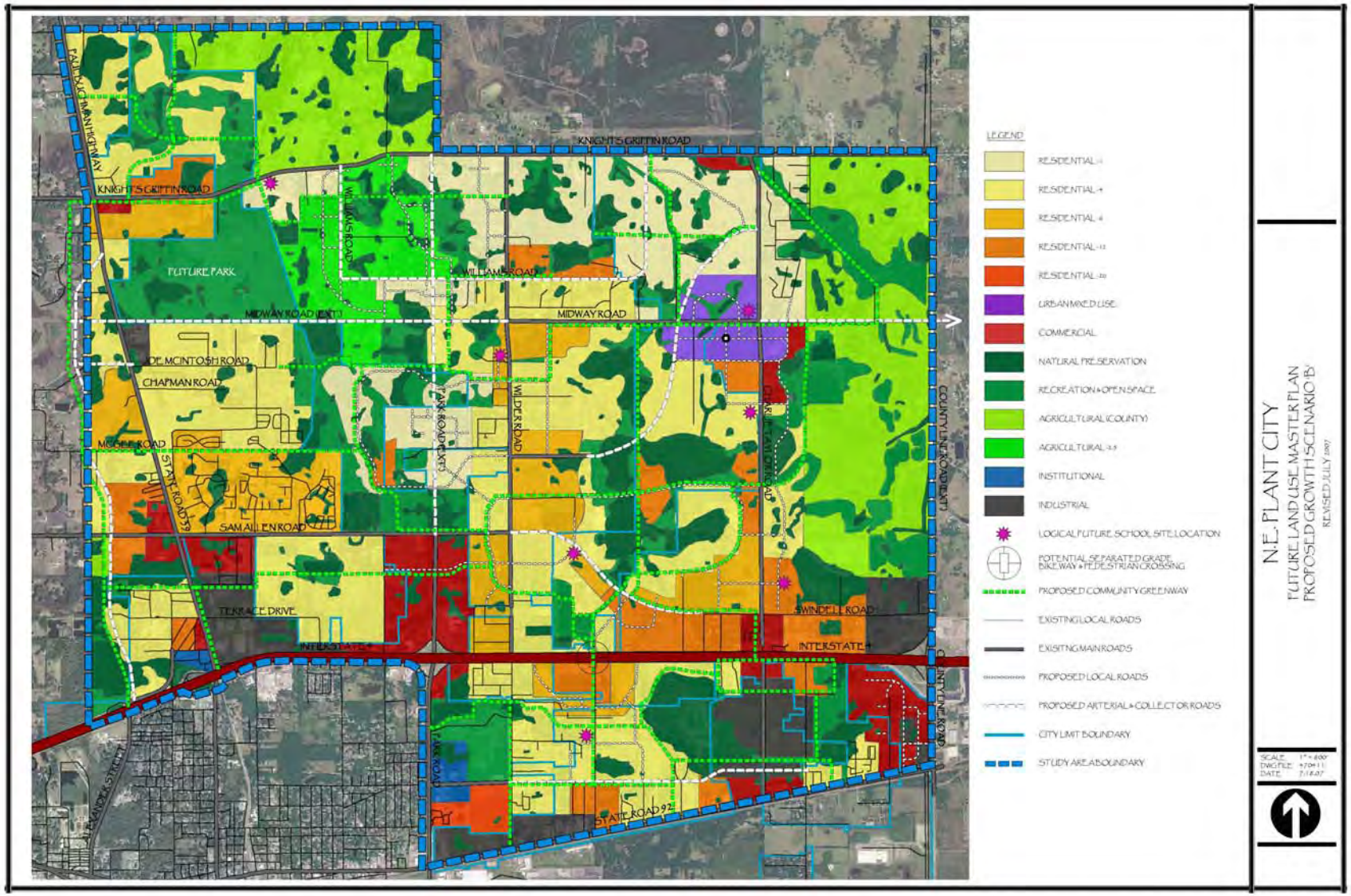


Figure 21: Preferred Land Use Vision

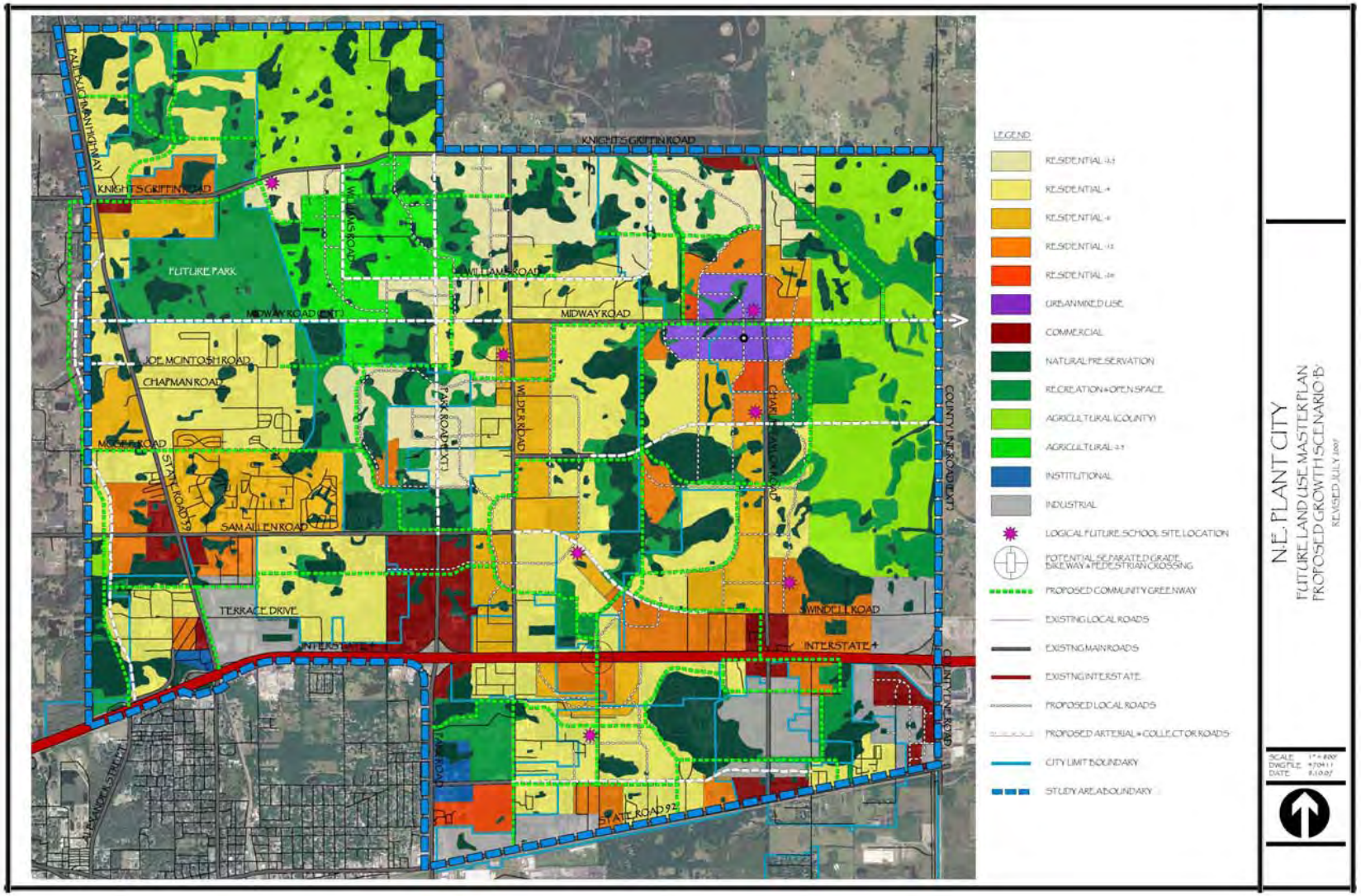


Figure 22: No Build Transportation Network

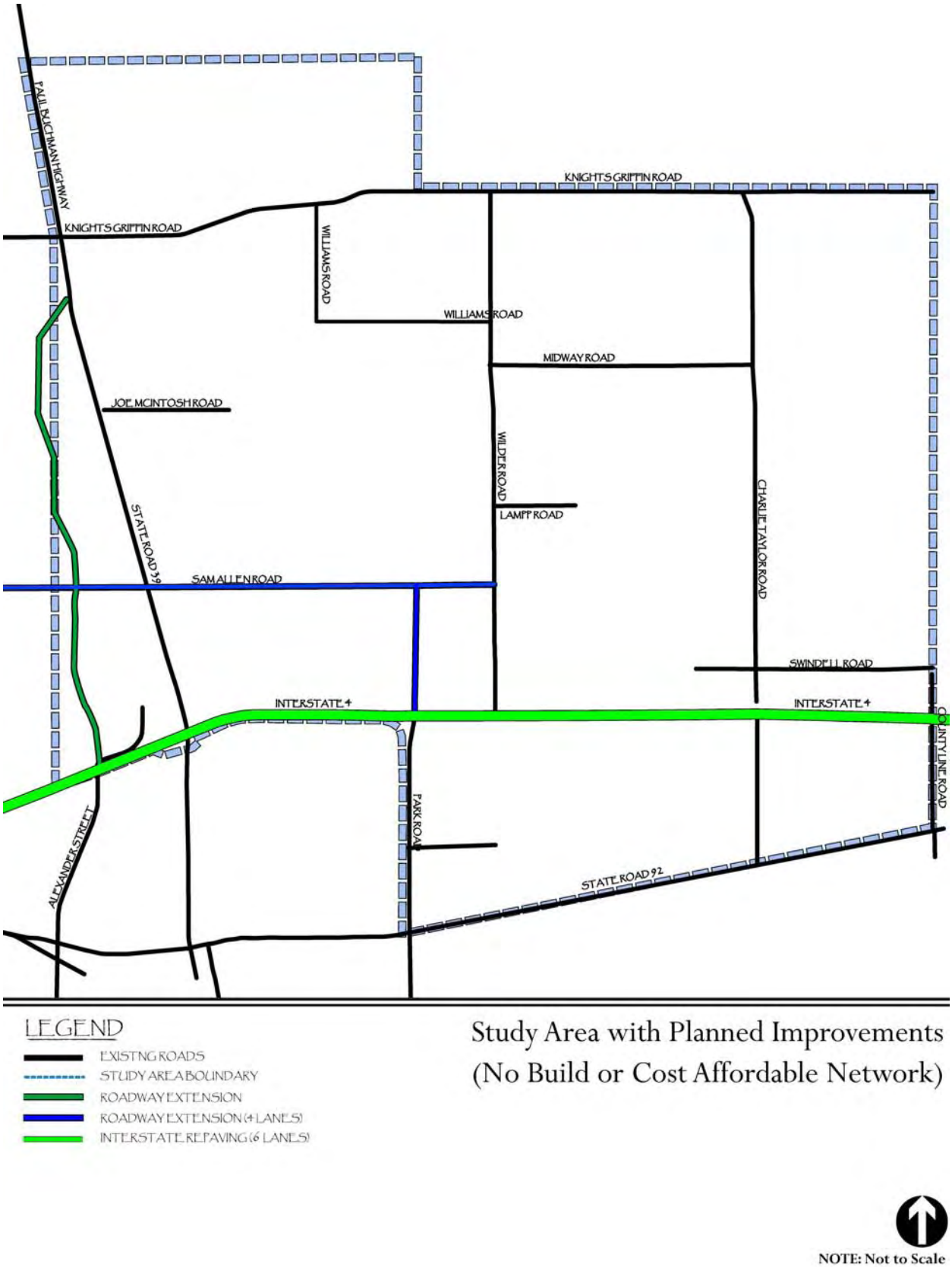


Figure 23: Preliminary Build Transportation Network

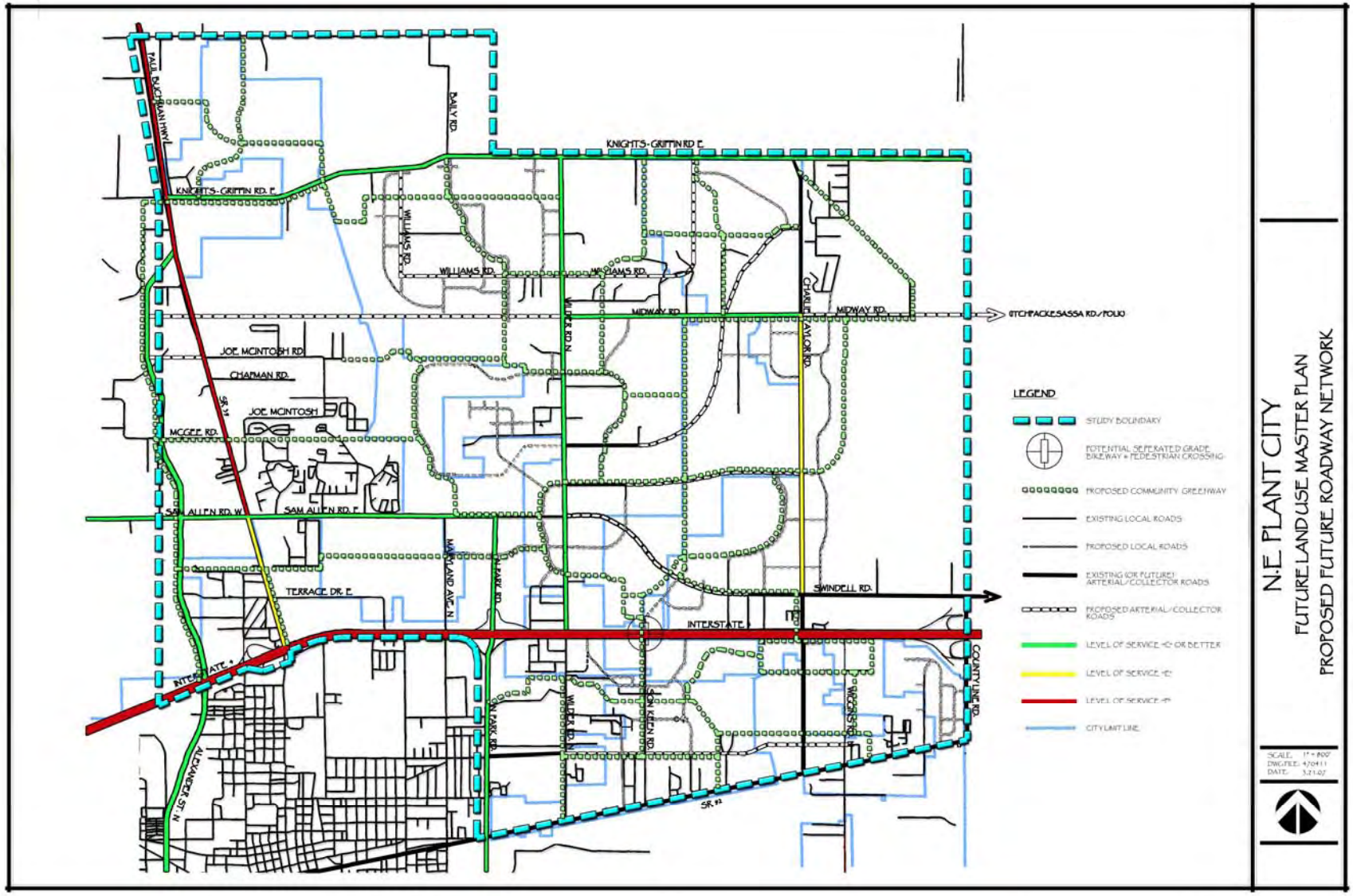


Figure 24: Baseline Land Use Scenario Preliminary Model Run Results

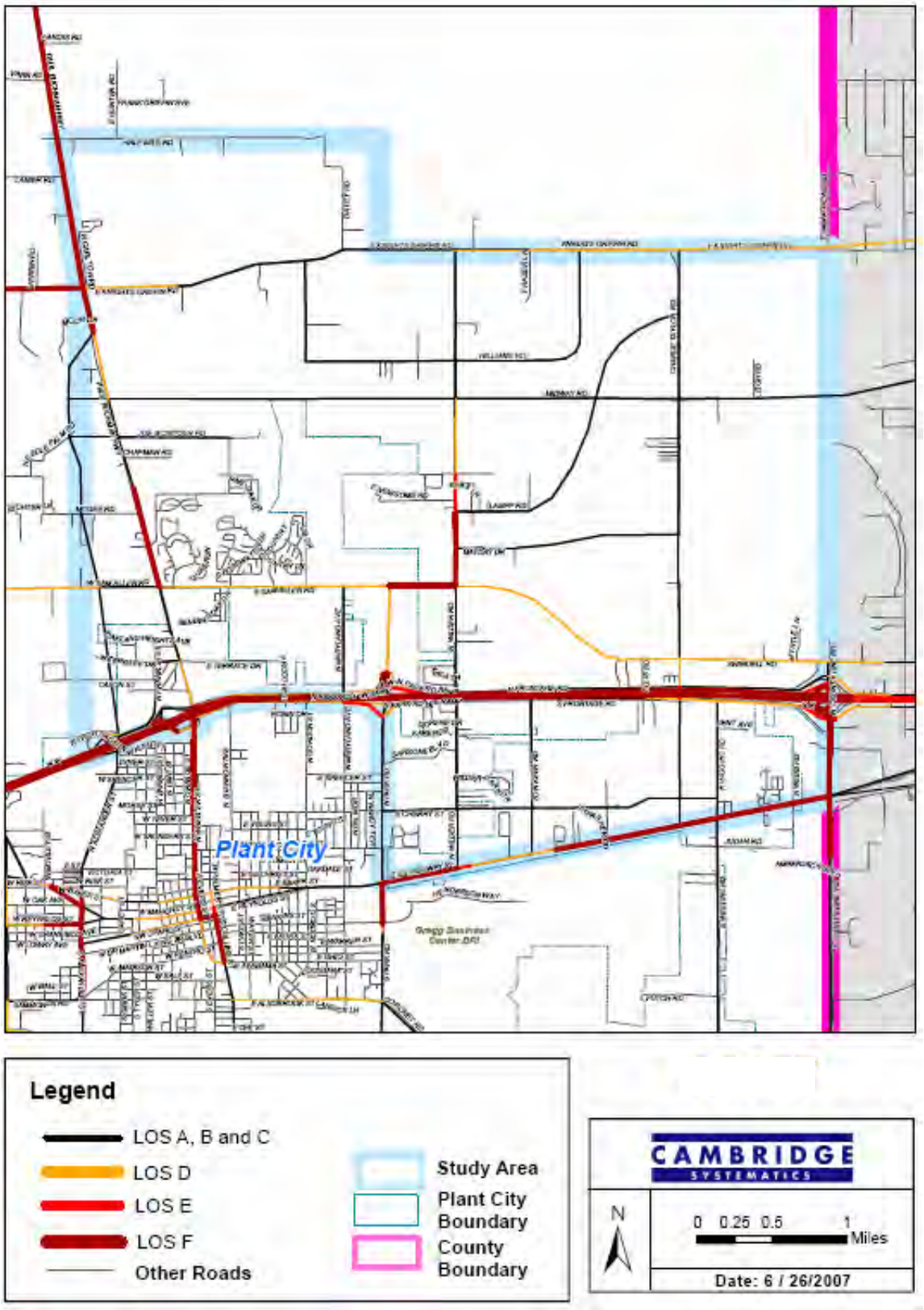


Figure 25: Future Land Use Alternative Scenario A Preliminary Model Run Results

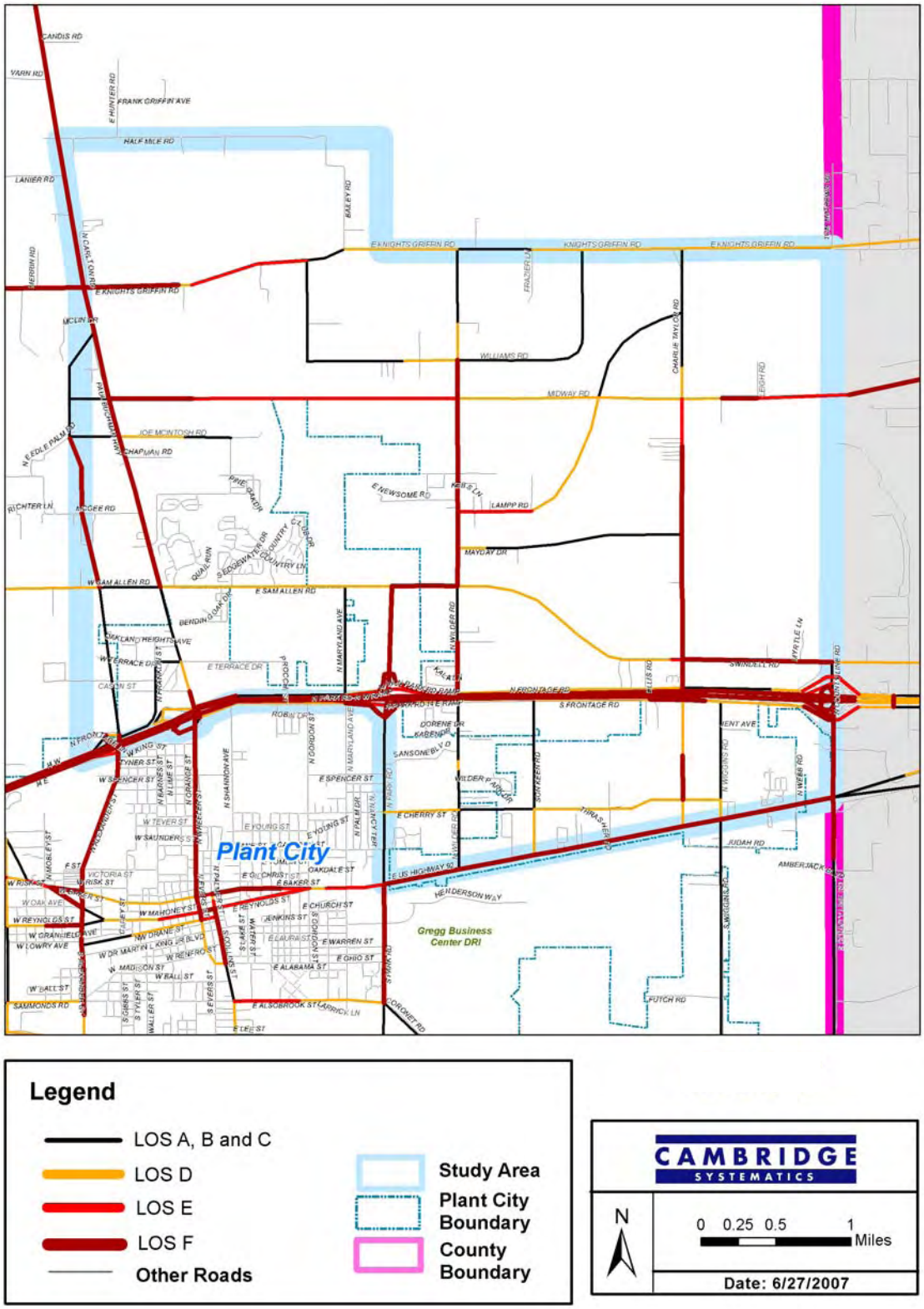


Figure 26: Future Land Use Alternative Scenario B Preliminary Model Run Results

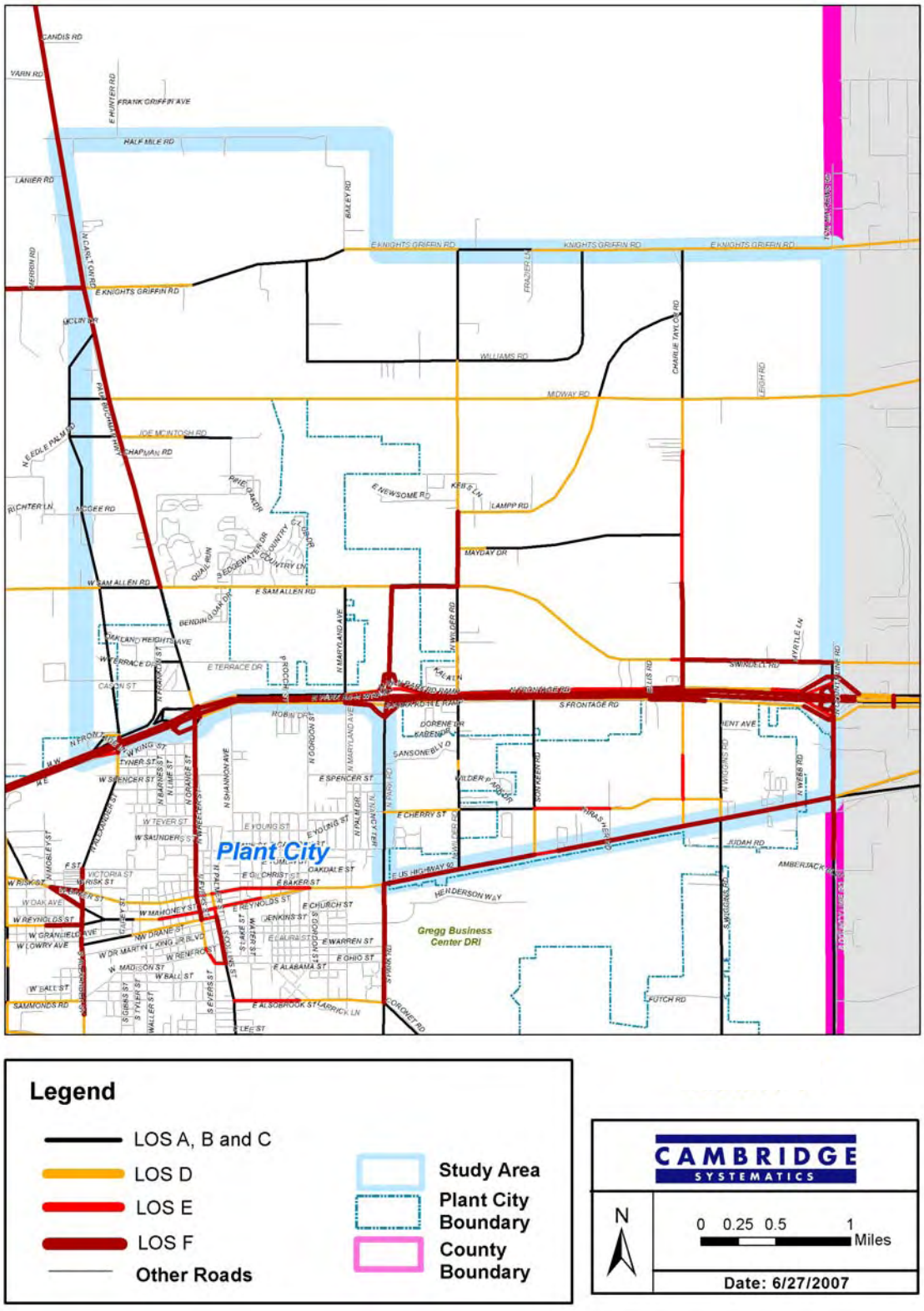


Figure 27: Preferred Transportation Build Network

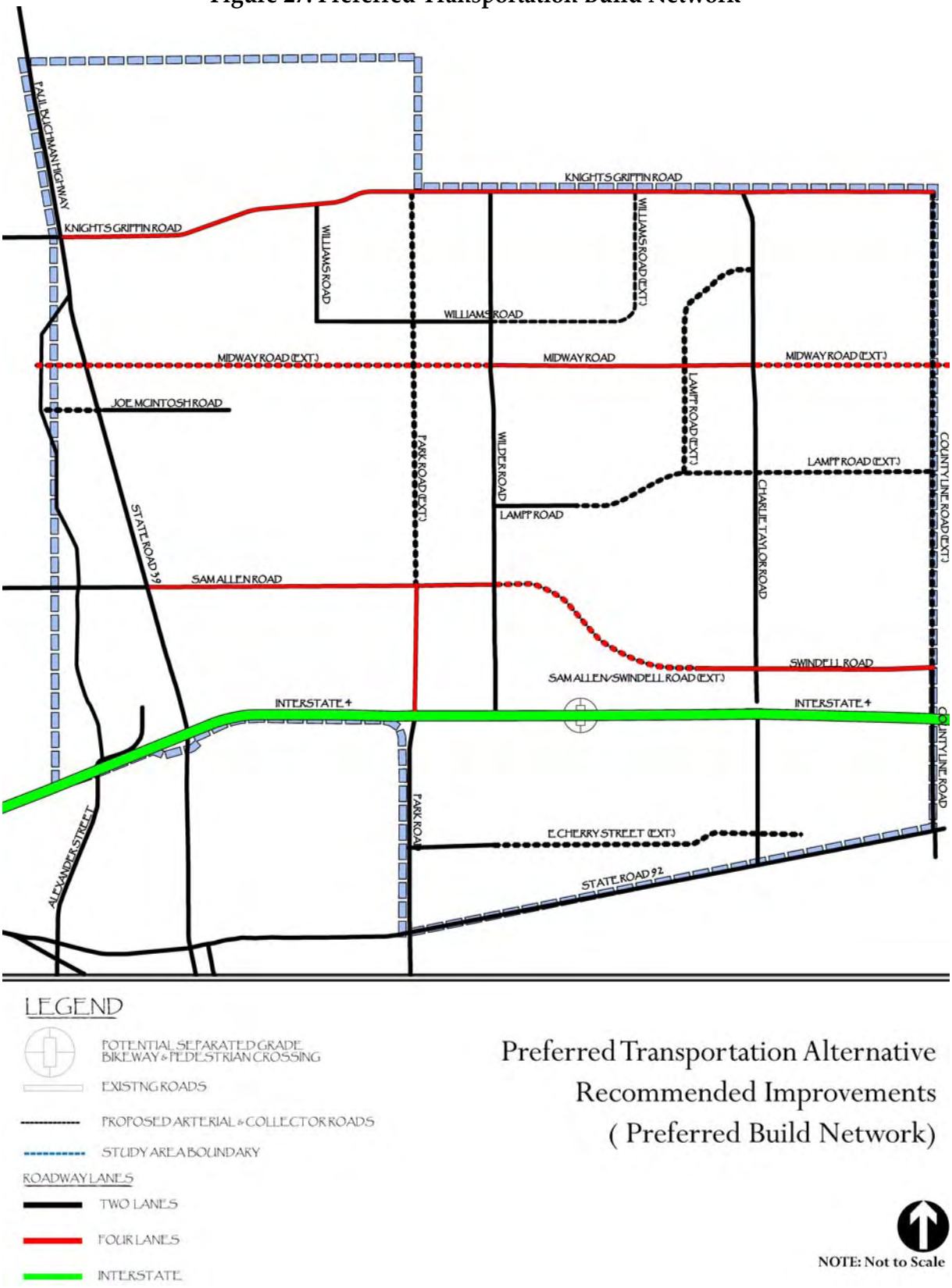


Figure 28: No Build Network with Preferred Land Use Scenario 2nd Model Run Level of Service Results

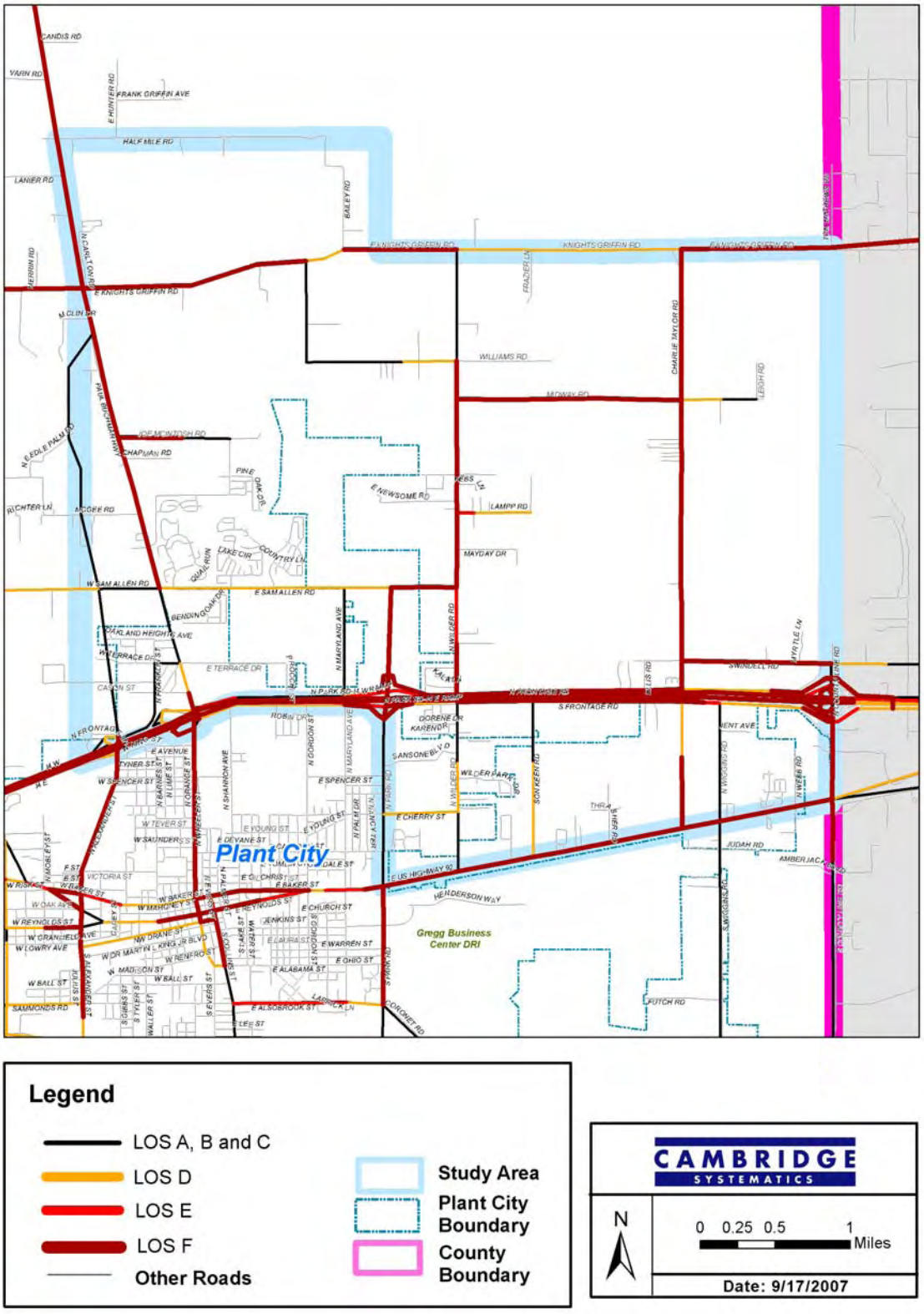
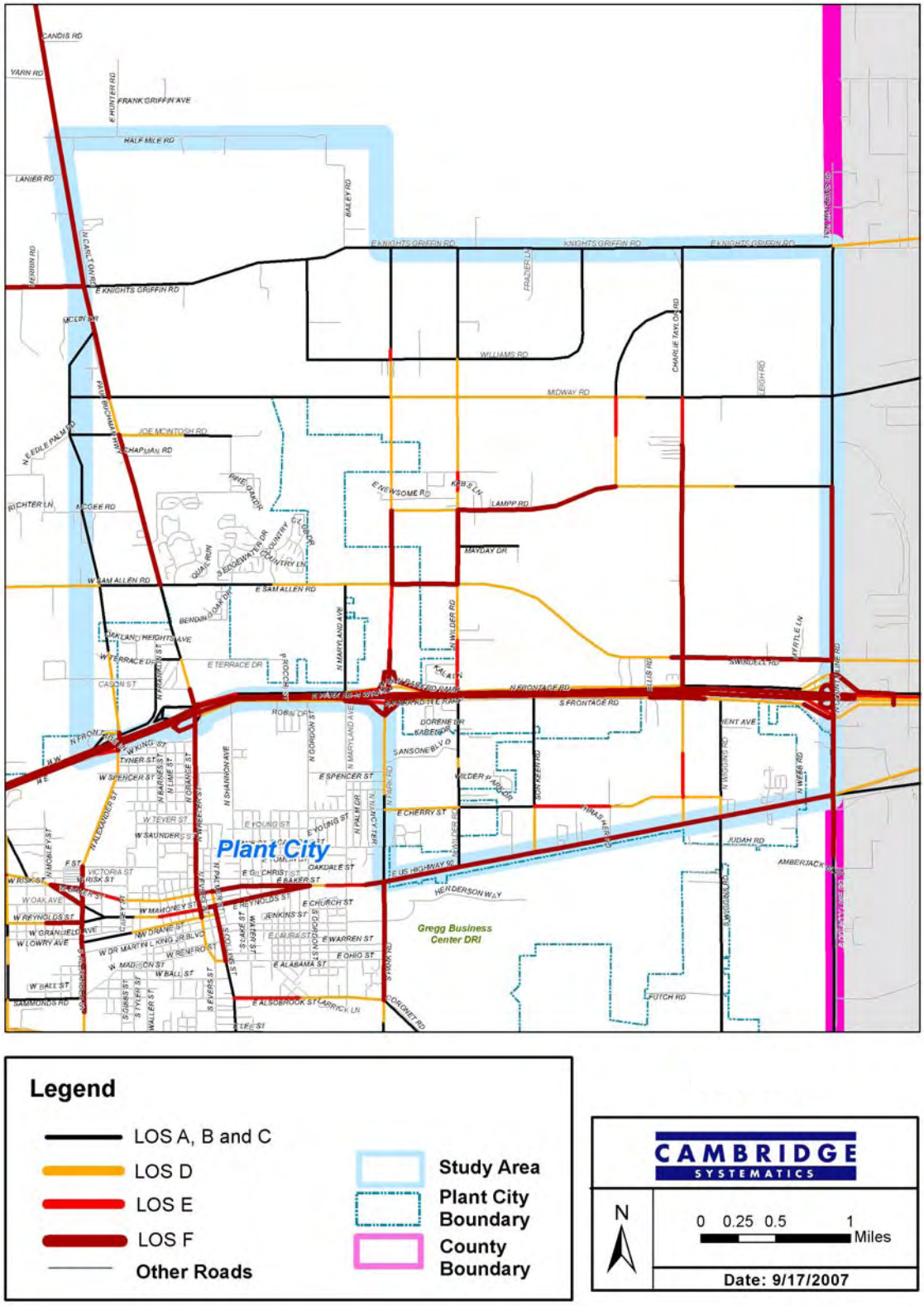


Figure 29: Preferred Build Network 2nd Model Run Level of Service Results



6. Master Plan and Implementation

6.1. Master Plan

The Master Plan resulting from the planning process is shown in Figure 30. The components of the Master Plan include:

- Creation of a Village Center that is a mixed use focal point, providing a mixture of housing, employment and civic uses.
- Clustered residential density.
- Creation of a series of greenways that provide alternatives to vehicular travel and recreation opportunities.
- Continuation of agricultural uses.
- Roadway improvements to create parallel facilities to I-4 and SR 39.

The development considered in the Master Plan is based on maximum build out of the proposed land use categories. Based on historic growth trends and current market conditions, the Master Plan represents a build out year beyond the 2035 planning horizon used for the transportation analysis, and therefore is considered to be a much longer range vision for the Northeast Plant City Area. For these reasons, an initial implementation phase (Phase 1) for the year 2025 was identified and is described in the following section.

6.2. Implementation

As emphasized during the public workshop, the master plan is meant to be a vision of the Northeast Plant City Area's possible future. The land use changes and transportation improvements depicted in this plan will be used by both the City and the County as a guide for directing future growth and development in this area. The master plan is not meant to serve as a regulatory tool for existing landowners, meaning that existing uses may remain and the provisions of the plan will not be enforced until such time as development approval is sought from either the City or County. As such, there are no proposed modifications to

the City's Future Land Use Map associated with this vision. Alternatively, the City is proposing that a Joint Planning Agreement, or JPA, be entered into with the County.

The provisions of this JPA would call for both the City and County to adopt the Northeast Plant City Vision as a guide for future development in the area, to evaluate the potential future land uses and consider adopting them as an overlay in the comprehensive plan, and to establish enhanced coordination between City and County planning and development review staff when development applications for properties within the Northeast Plant City Area are submitted. The JPA would also identify the transportation network improvements included in the Master Plan and the proposed Phase 1 and assign responsibility to the appropriate agency (City or County) for ensuring that adequate right-of-way is provided as part of the development approval process.

The JPA would also consider the use of generalized construction cost estimates, shown in Table 9, to identify the approximate cost per dwelling unit and/or employee or per vehicle trip. This development cost would be credited towards the City's impact fee and would be collected to build the needed roadway infrastructure identified by Phase 1 of the Master Plan to support the proposed development in the study area. As a result, the preliminary estimated per trip cost is $611.45. As identified in Appendix G, this estimated cost per trip was developed by using the *Institute of Transportation Engineers Trip Generation Manual (7th Edition)* divided by the generalized construction cost estimates for Phase 1.

6.2.1. Phase 1

Prompted by a cost to benefit evaluation of the Master Plan roadway improvements, an initial implementation phase of the Master Plan was identified. Phase 1 of the Master Plan reflects a conservative interim year forecast that integrates flexibility, greater development market sensitivity, and the prioritization of transportation infrastructure improvements. Modifications to the proposed land uses were also undertaken to correspond to the priority transportation improvements. Figure 31 shows the final results of the land use modifications and these are briefly described below.

As an initial step, the build out densities were reduced from maximum levels to the effective densities published on page 38 of the City's *Evaluation and Appraisal Report*. The following table shows how the build out densities were modified.

Table 7: Comparison of Effective Build Out Densities

Land Use Category	Master Plan Build Out Density	Phase 1 Build Out Density
Agricultural (County)	1 unit/20 acres	1 unit/20 acres
Agricultural (City)	1 unit/2.5 acres	1 unit/2.5 acres
Residential 2.5[1]	2.5 units/acre	2.5 units/acre
Residential 4	4 units/acre	2.8 units/acre
Residential 6	6 units/acre	4.6 units acre
Residential 12	12 units/acre	11.2 units/acre
Residential 20	20 units/acre	13.5 units/acre
Mixed Use (Town Center)[2]	20 units/acre	12 units/acre
Commercial[3]	None	15 units/acre

Source: Carter & Burgess, Inc., 2007 and Plant City Evaluation and Appraisal Report, 2006.

Notes: [1]This land use category does not currently exist within the City's comprehensive plan; therefore a recommendation of the master plan is to revise the comprehensive plan to include this land use category.

[2] The Master Plan assumes 15% of the area would be used for residential. The effective density provided in the EAR indicated that 35% of mixed use areas were developed with residential at 12 units per acre.

[3] The Master Plan does not assume any residential units in the Commercial designation. The effective density provided in the EAR indicates that 5% of commercial areas are developed with residential at a density of 15 units per acre.

A similar approach was used for the nonresidential areas. Under the Master Plan, it was assumed that 100 percent of the nonresidential areas would develop at the designated floor area ratio. The City's EAR identified the effective non-residential development patterns shown in Table 8. With the exception of the residential categories, these same percentages and floor area ratios were assumed in Phase 1. Additional commercial square feet for the residential categories were not calculated in order to be consistent with the previous scenario. Since the EAR did not address Institutional uses, the build out for this category was reduced to 50 percent with a floor area ratio of 0.25 for 2025.

Table 8: Nonresidential Development Patterns by Land Use Category

Land Use Category	Percentage Nonresidential	Floor Area Ratio
Commercial	95%	0.35
Industrial	100%	0.50
Mixed Use	65%	0.35
Residential 4	0%	N/A
Residential 6	5%	0.25
Residential 12	5%	0.35
Residential 20	5%	0.35

Source: Plant City Evaluation and Appraisal Report, 2006.

Based on comments received from the Public Workshop and modifications made to the transportation network, the following additional changes were made to the land uses.

- Density reduced from R-12 to R-2.5 in area northeast corner of the Swindell Road/Charlie Taylor Road intersection.
- Density reduced from R-6 to R-4 along west side of Charlie Taylor Road, north of Swindell Road.
- Density reduced from R-6 to R-4 on south side of I-4 around R-12 area.
- Density reduced from R-6 to R-4 for area west of SR 39 between Joe McIntosh Road and McGee Road.
- Reductions in density eliminated need for one school, so the potential location north of Swindell Road and east of Charlie Taylor Road was removed from the map.

The final step was to complete a straight line regression analysis to determine the number of dwelling units, employees and students within each TAZ in the year 2025. The resulting numbers are 19,690 dwelling units, 26,917 employees, and 4,960 students.

Figure 32 shows the prioritized transportation improvements for Phase 1 of the Master Plan. These improvements include:

- Extension of Lampp Road as a two-lane facility
- Extension of Sam Allen Road to Swindell Road as a four-lane facility

- Extension of County Line Road to Knights Griffin Road as a two-lane facility
- Widening of Knights Griffin Road from two- to four-lanes
- Widening of Swindell Road from two- to four-lanes

Similar analysis of these interim improvements was completed using the WCFRPM. These LOS operating conditions are presented in Figure 33. This analysis helped to prioritize proposed roadway improvements and determine if the recommend facilities were alleviating congestion on I-4. If implemented, the Phase 1 roadway improvements are anticipated to reassign between 2,000 and 4,000 daily vehicle trips from portions of I-4 and SR 39 to the proposed parallel facility created by the Sam Allen Road/Swindell Road Extension. The Phase 1 roadway improvement recommendations were also anticipated to improve the LOS on Knights Griffin Road from LOS F to LOS B/C, on Midway Road from LOS F to LOS E, and along portions of Sam Allen Road from LOS F to LOS B/C.

Once the Phase 1 transportation improvements were identified, the City met with representatives from the Florida Department of Transportation, District 7 to discuss the results of the Master Plan. At this meeting, FDOT agreed to publicly support the Master Plan if the analysis and forecasts are found satisfactory. FDOT identified the need for continued coordination with FDOT and Hillsborough County and suggested the creation of a special transportation assessment as a means to finance the proposed transportation improvements. Further detail for this meeting can be found in Appendix G.

In response to this request from FDOT, cost estimates for the Phase 1 roadway improvements were developed and an estimated cost per trip calculated. FDOT District 7's *Roadway Cost per Center Mile* (August 2007) estimates were used to determine the approximate construction cost for the implementation of proposed roadway improvements for Phase 1. These estimates include construction, Project Development & Environment (PD&E), contingency, and scope creep costs. The cost estimates do not include the cost for acquiring additional right-of-way. All proposed roadway improvements were assumed to have a rural typical section. Table 9 shows the construction cost estimates.

Table 9: Construction Cost Estimates for Master Plan and Phase 1 Roadway Improvements

Road Name	Improvement	Length (Miles)	Cost Per Mile*	Cost
Preferred Transportation Network (Complete Master Plan)				
Midway Road Ext. (West)	New Construction (4 lanes)	2.60	$ 20,519,619.00	$ 53,382,451.08
Midway Road Ext. (East)	New Construction (4 lanes)	1.06	$ 20,519,619.00	$ 21,803,496.52
Park Road Ext.	New Construction (2 lanes)	2.24	$ 13,538,311.00	$ 30,376,169.47
Williams Road Ext.	New Construction (2 lanes)	1.50	$ 13,538,311.00	$ 20,371,776.57
Lampp Road Ext. (N-S)	New Construction (2 lanes)	1.41	$ 13,538,311.00	$ 19,028,556.10
Lampp Road Ext. (E-W)	New Construction (2 lanes)	2.07	$ 13,538,311.00	$ 27,985,031.80
Sam Allen/Swindell Road Ext.	New Construction (4 lanes)	1.33	$ 20,519,619.00	$ 27,267,526.97
E. Cherry Street Ext.	New Construction (2 lanes)	1.76	$ 13,538,311.00	$ 23,767,960.08
County Line Road Ext.	New Construction (2 lanes)	2.74	$ 13,538,311.00	$ 37,103,891.20
Joe McIntosh Road Ext.	New Construction (2 lanes)	0.35	$ 13,538,311.00	$ 4,770,782.07
Widening of Knights Griffin Road	Widening from 2 to 4 lanes	5.07	$ 12,335,687.00	$ 62,592,226.71
Widening of Midway (Wilder to Charlie Taylor)	Widening from 2 to 4 lanes	1.50	$ 12,335,687.00	$ 18,498,530.81
Widening of Swindell Road	Widening from 2 to 4 lanes	1.75	$ 12,335,687.00	$ 21,565,855.45
TOTAL:		**25.38**		**$ 368,514,254.83**
Phase I				
Lampp Road Ext. (N-S)	New Construction (2 lanes)	1.41	$ 13,538,311.00	$ 19,028,556.10
Lampp Road Ext. (E-W)	New Construction (2 lanes)	2.07	$ 13,538,311.00	$ 27,985,031.80
Sam Allen/Swindell Road Ext.	New Construction (4 lanes)	1.33	$ 20,519,619.00	$ 27,267,526.97
County Line Road Ext.	New Construction (2 lanes)	2.74	$ 13,538,311.00	$ 37,103,891.20
Widening of Knights Griffin Road	Widening from 2 to 4 lanes	5.07	$ 12,335,687.00	$ 62,592,226.71
Widening of Swindell Road	Widening from 2 to 4 lanes	1.75	$ 12,335,687.00	$ 21,565,855.45
TOTAL:		**14.36**		**$ 195,543,088.24**

NOTE: 1) Does not include Right-of-Way costs
2) Includes Design, PD&E, Contingency, and Scope Creep Costs
Source: * = FDOT District 7 *Roadway Cost per Centerline Mile (August 2007),* Assuming a rural typical

LEGEND

* Assumes Following Costs per Centerline Mile	
New Construction 2-Lane Roadway	$ 13,538,311.00
New Construction 4-Lane Roadway	$ 20,519,619.00
Roadway Widening from 2 to 4 Lanes	$ 12,335,687.00

The cost per vehicle trip was calculated by dividing the estimated capital costs by the total number trips generated by Phase 1. The total number of trips generated by the development anticipated in Phase 1 is approximately 319,800.

6.2.2. Other Implementation Strategies

The tasks that remain to implement the Master Plan are identified below.

- Initiate and complete negotiations with Hillsborough County regarding the JPA.
- Develop a new transportation impact district that is separate from the existing Plant City district that is specific to and bounded by the Northeast Plant City Area Master Plan.
- Incorporate the Northeast Plant City Area Master Plan into the Goals, Objectives, and Policies of both the Plant City and Hillsborough County comprehensive plans, including the creation of a new future land use category "Residential 2.0" that allows 2.0 dwelling units per acre.
- Revise the land development regulations of both the City and County to include the joint development review requirements for properties located within the Master Plan area.
- Consider potential changes to the Future Land Use Map and adopt agreed upon changes as an overlay to the comprehensive plan.
- Initiate amendments to the County's Corridor Preservation Plan to identify the roadway corridors required to support the development anticipated in the master plan area.
- Initiate the process to have the regional transportation improvements (e.g. the widening of Knights Griffin Road and the identified bicycle and pedestrian improvements) included in the Long Range Transportation Plan.

In addition to the tasks required to complete the master planning process, the following are recommended next steps for the Northeast Plant City Area in general.

- Complete an infrastructure and public facilities needs assessment focused on potable water, wastewater, police and fire protection, and other government services that would be impacted by the potential annexation and development of this area.
- Completion of a market analysis to determine the amount and types of development that can be supported in the Village Center.
- Development of a Village Center concept plan that identifies a specific development program, the amount of land required, and the aesthetic vision and function.
- Corridor feasibility studies for identified roadway improvements, such as the Sam Allen Road/Swindell Road connection.
- Identification of neighborhoods within the Study Area and development of neighborhood plans to tie these areas together.
- Continue working with the School Board to identify capacity needs and possible school locations as the Study Area develops.

Figure 30: Northeast Plant City Area Master Plan Vision

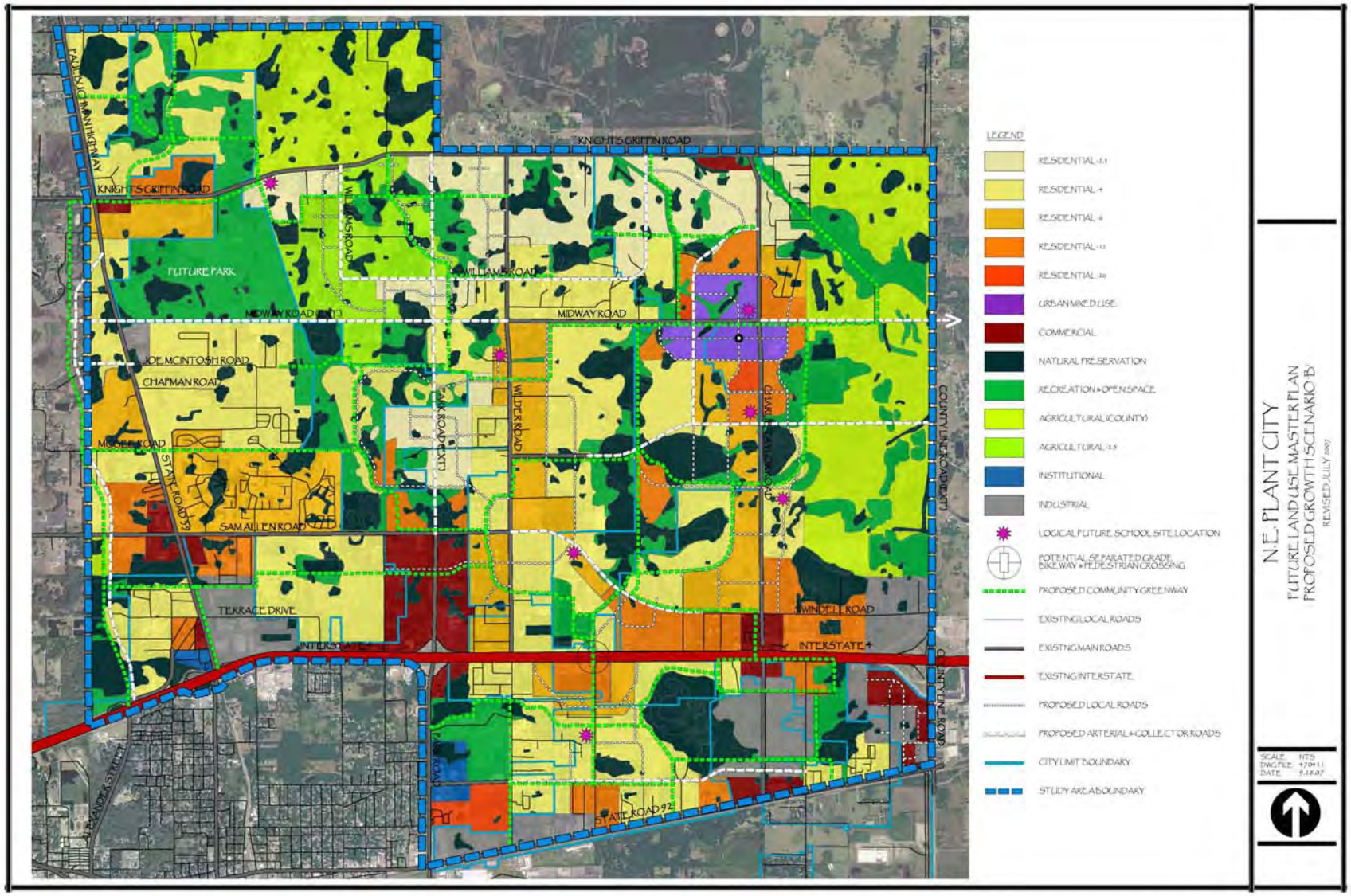


Figure 31: Phase 1 Future Land Use Scenario

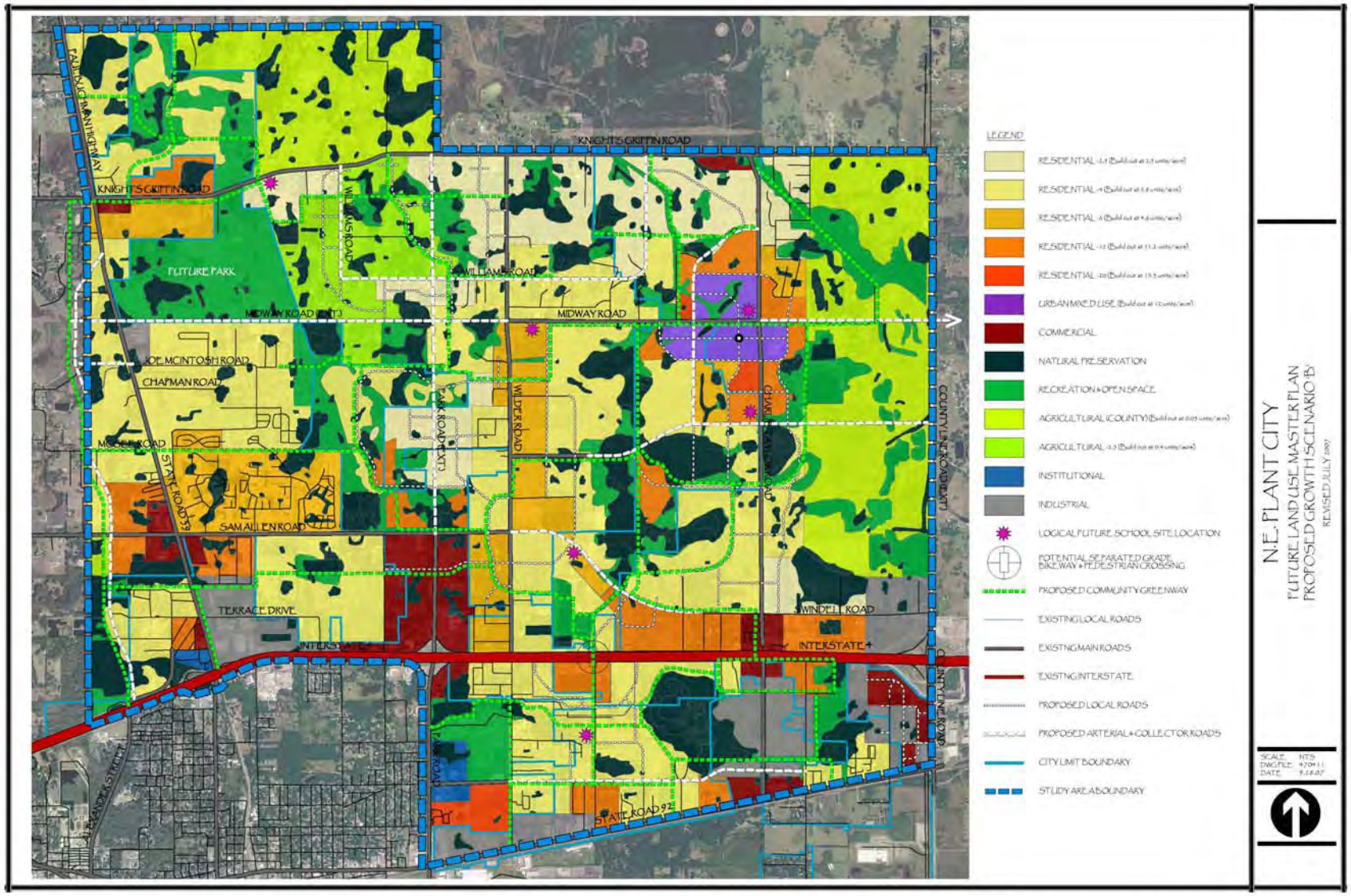


Figure 32: Initial Phase Network

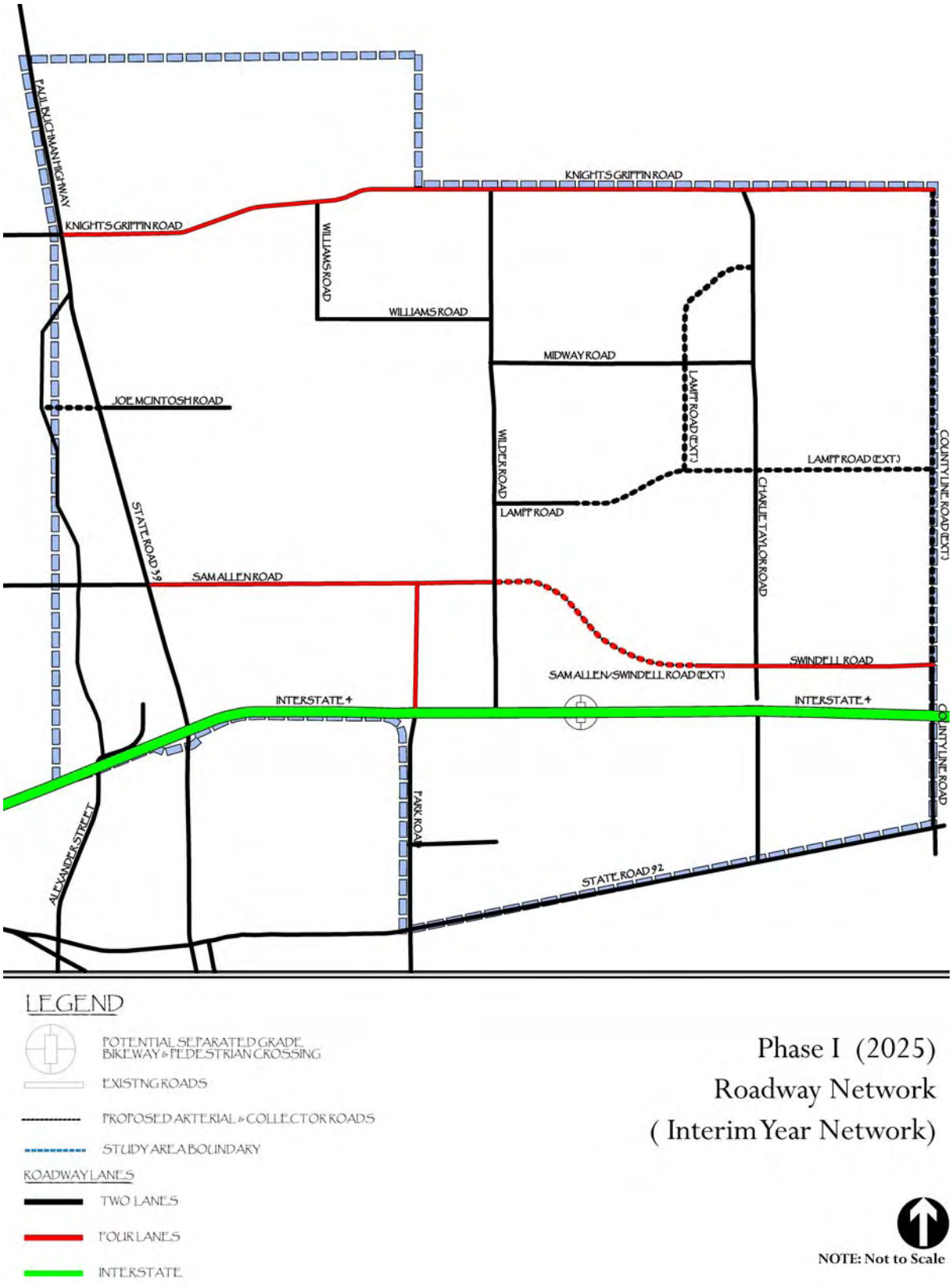
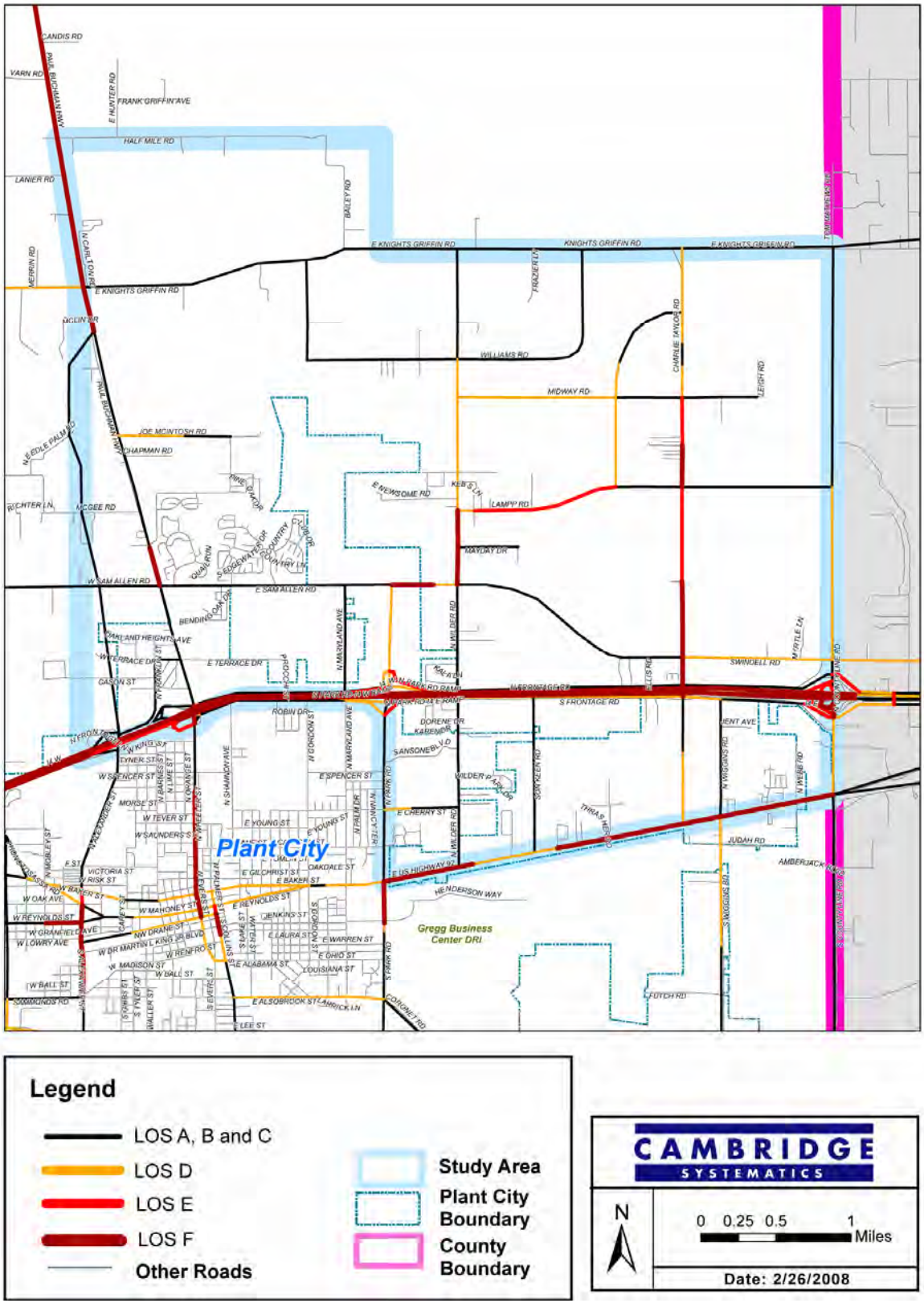


Figure 33: Initial Phase Level of Service Results



7. Conclusions

A master plan sets the stage for the coordinated growth of an area, and is the first in a series of steps that will ensure that the quality of life is maintained or enhanced as growth occurs. The vision expressed by the Northeast Plant City Area Master Plan is based on the concepts of a livable community. This vision is achievable over a long-range planning horizon. The initial implementation identified by Phase 1 is feasible by 2025 provided the development market and economy in the state and Tampa Bay area recover, the Joint Planning Agreement between the City and County is implemented, and funding for the transportation improvements is established. Further, successful implementation of the Master Plan requires coordination between all of the stakeholders, including the property owners, City and County staff and elected officials, the Planning Commission, the Florida Department of Transportation, and other agencies involved in the growth and development of this area.

The Master Plan, if implemented as presented in this document, will allow growth and development to occur within the Study Area while protecting the agricultural heritage and rural lifestyle of Plant City.

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