Section 5.0
Trail Development

This section provides the framework for the development, evaluation, and prioritization of Lake County's trails.

The goal of the Lake County Trails Master Plan is as follows:

> *Develop a cohesive countywide trail system that will connect people and places through a regional network.*

The process for developing a trail network for Lake County included:

- data collection;
- evaluating existing trails;
- establishing needs;
- identifying future trails;
- evaluating and prioritizing trails; and
- refining trail location and design.

After the trails were developed, they were prioritized by comparing trails on a wide range of evaluation metrics.

5.1 Data Collection

5.1.1 Existing Trails

The data collection effort in determining the location and evaluating the physical characteristics of existing trails in Lake County utilized a wide range of data. GIS data layers were collected from the Florida Department of Environmental Protection – Office of Greenways and Trails (FDEP-OGT), Lake County, and the surrounding counties when available. Existing trails, parks, recreation, or corridor master plans were reviewed from municipalities, adjacent counties, private advocacy groups, scenic byways, large residential developments, and state agencies. An initial series of meetings were held with every municipality in Lake County, each of the adjacent counties, the FDEP-OGT, Central Florida Regional Planning Council, and Lake County to determine what data was available.

This data was collected and then input, when appropriate, into a GIS database to document existing trails. Field work was then conducted to verify the location and physical characteristics of the identified trails in Lake County. Figure 5-1 shows the identified existing trails in Lake County. The inventory of existing trails in Lake County shows the following summary of existing trails in Lake County:

- 29.7 Miles of County Trails
- 11.5 Miles of Local Trails
- 145.9 Miles of Blueways
- 185 Miles of Nature/Park Trails

5.1.2 Destinations

Ultimately, trails connect people to destinations. For the Lake County Trails Master Plan, the destinations included in the analysis were a wide range of potential recreational and transportation end points for a trail user. Data for recreational destinations included parks, existing trails, downtown areas, scenic areas, and cultural destinations such as museums, art galleries, libraries and historic sites or buildings. Transportation destinations included major county activity centers as defined by the Lake County Comprehensive Plan, schools, hospitals, and government destinations such as post offices and other government services.

The data for these destinations was collected from a wide variety of sources including state, county, and city GIS datasets: field reconnaissance: and stakeholder interviews. Figure 5-2 shows major identified destinations. The 2050 population centers for Lake County are shown in Figure 5-3.

Equestrian emphasis areas were determined based on several indicators. First, we interviewed stakeholders knowledgeable with the Lake County equestrian community. We also looked at land use and development patterns. The emphasis for the Master Plan was to connect users to equestrian destinations which are generally within riding distance of their home or stable. While some areas such as Ocala National Forest are clearly destinations for equestrian use, they tend to attract users that do not ride from a local stable or home and would not use a trail to get to these large regional destinations.

LAKE COUNTY FLORIDA

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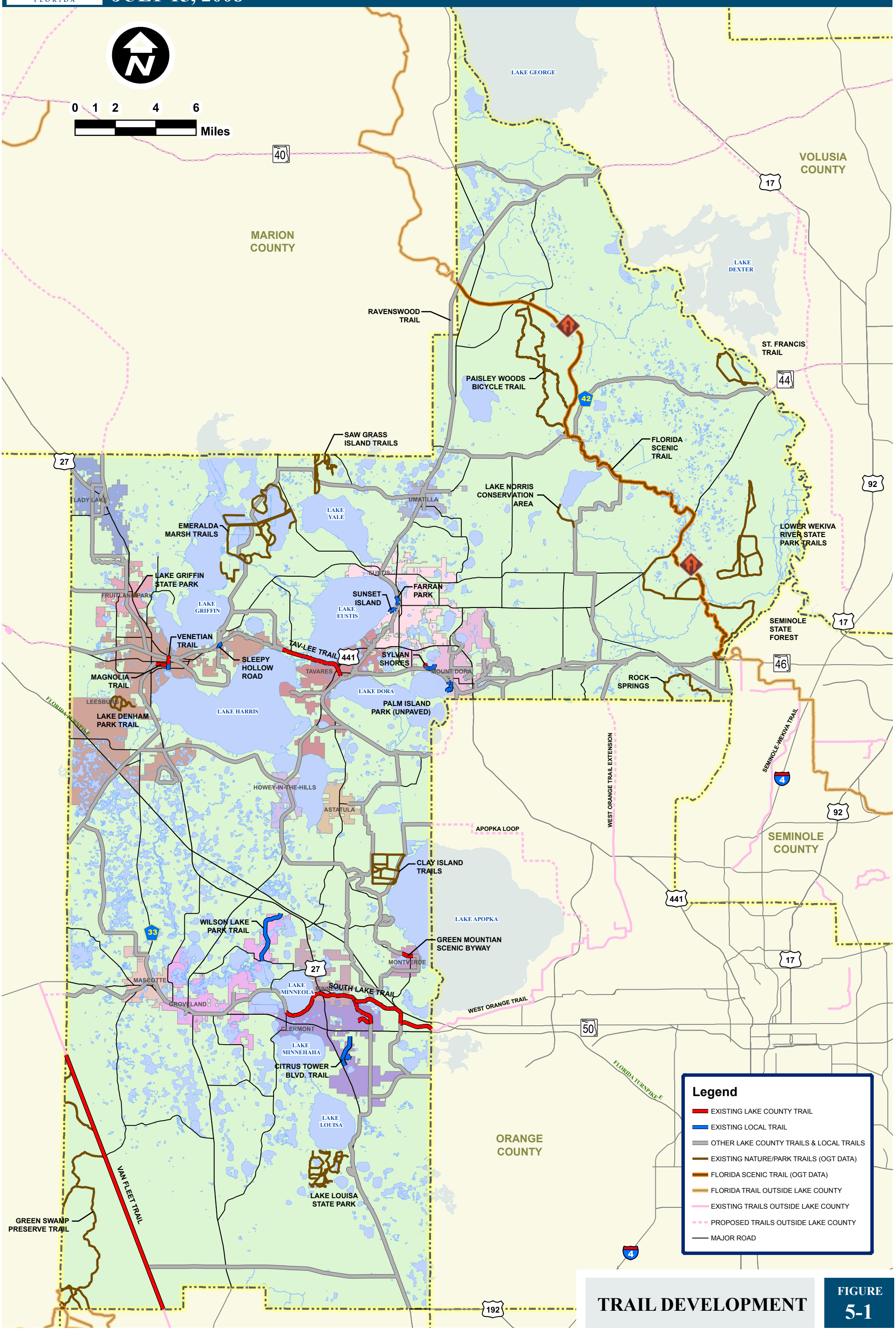
JULY 15, 2008

Existing Trails



TRAIL DEVELOPMENT

FIGURE 5-1

LAKE COUNTY FLORIDA

TRAILS MASTER PLAN
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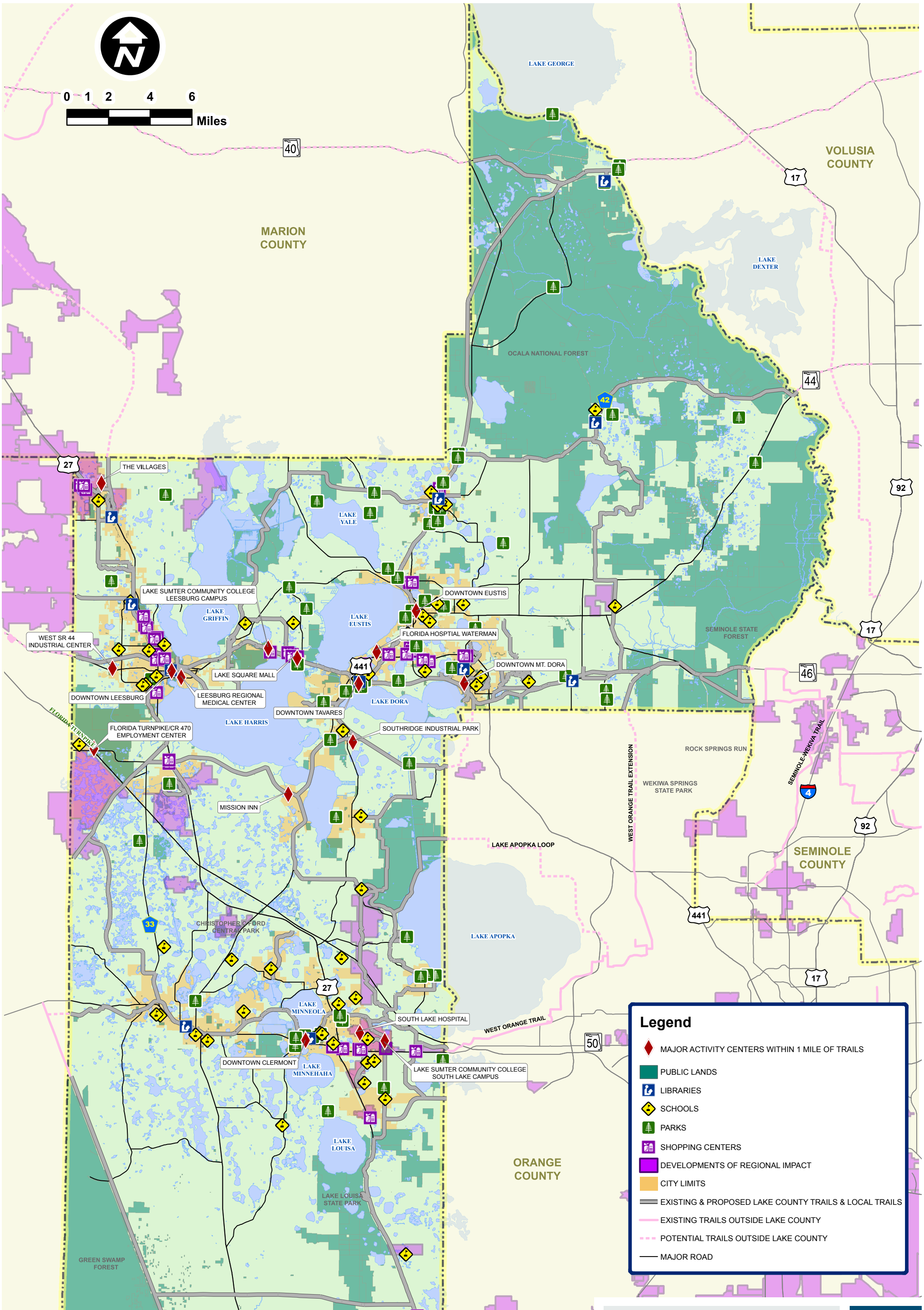
Trail Destinations



TRAIL DEVELOPMENT

FIGURE 5-2

LAKE COUNTY FLORIDA

TRAILS MASTER PLAN
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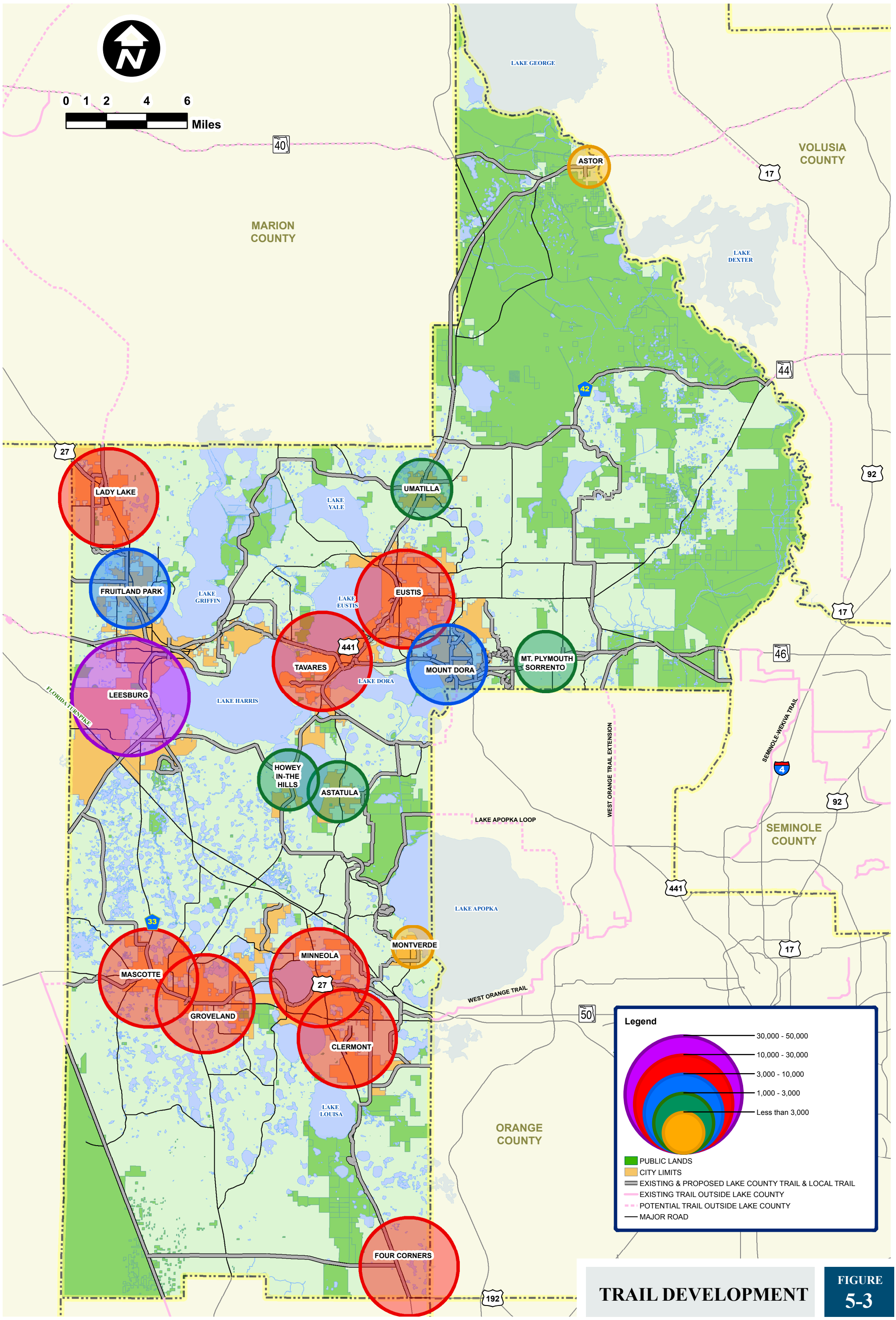
2050 Population Centers



TRAIL DEVELOPMENT

FIGURE 5-3

Destinations Continued

Interviews with stakeholders knowledgeable with the equestrian community indicated that equestrian demand for trails tended to be greatest in areas dominated by five to twenty acre tracts of land. Smaller parcels of land do not normally have adequate space for horses and larger plots tend to be more agricultural or have adequate acreage so as to not require a rider to leave the property. While it was recognized that these were only rules of thumb, it was perceived to account for the greatest equestrian need. The equestrian emphasis areas shown in Figure 5-4 are areas where trail designers should give particular attention to equestrian accommodations on the shared-use trails.

5.2 Evaluate Existing Trails

As part of the Lake County Trails Master Plan, Inwood Consulting Engineers, Inc. performed an evaluation of the existing shared-use trails.

- Tav-Lee Trail
- South Lake Trail
- Hancock Trail
- Hancock Extension Trail
- Van-Fleet Trail
- Montverde Trail

The 29.7 miles of trails were evaluated for safety, adherence to the Lake County Trails Master Plan design standards, and suitability for equestrian use. A site visit was conducted for each trail. The evaluation team rode the entire trail lengths on bicycles and identified safety deficiencies and potential improvements. The findings were documented in a Technical Memorandum - *Lake County Existing Trail Evaluations.* This Technical Memorandum is located in Appendix D.

5.3 Determine Needs

The ultimate goal of a trail network is to connect people to destinations. Our initial data analysis identified major transportation and recreation destinations throughout the county. Some of the major destinations that should be linked by the trail network include:

- recreational and cultural resources;
- major commercial and employment areas;
- downtown retail areas; and
- residential areas, educational centers, and libraries.

Needs were developed based on the State Comprehensive Outdoor Resources Plan (SCORP) guidelines for LOS. The SCORP recommends a guideline of one linear mile of bicycle trail per 5,000 population as a generally accepted standard for LOS. The SCORP also provides guidelines of one linear mile of hiking trail and one linear mile of nature study trail per 6,750 population. According to the US Census Bureau, the 2006 estimated population for Lake County was approximately 291,000. Based on the SCORP guidelines, the county currently needs almost 59 miles of shared-use trails and 43 miles of nature/hiking trails.

The county currently has 29.7 miles of regional or minor paved shared-use trails constructed as part of the Lake County Trails Network. The future trail network is shown in Figure 5-5. Based on this methodology, the county currently has one linear mile of shared-use trail for every 9,864 residents, which is approximately half of the recommended LOS. Put another way, Lake County is approximately 29.7 miles short of the recommended LOS goal for shared-use trails.

The county currently has 185 miles of nature/hiking trails which equates to one linear mile of trail per 1,573 residents. In other words, Lake County exceeds the recommended LOS goal for nature/hiking trails by 142 miles.

5.3.1 Future Needs

According to the Lake County Department of Growth Management, the county's population is projected to reach 345,600 by the year 2025. Based on the SCORP guidelines, the county will need almost 69 miles of shared-use trails and 51 miles of nature/hiking trails in the year 2025.

Section 6.0 of this report addresses implementation of the Lake County Trails Master Plan. As part of the implementation plan, 101 miles of shared-use trails were targeted for construction by the year 2028. This would exceed the recommended LOS standards for shared-use trails within Lake County.

An important element of establishing standardized trail levels of service is the determination that the trails that will count towards the LOS and what elements of the total population will be used.

LAKE COUNTY FLORIDA

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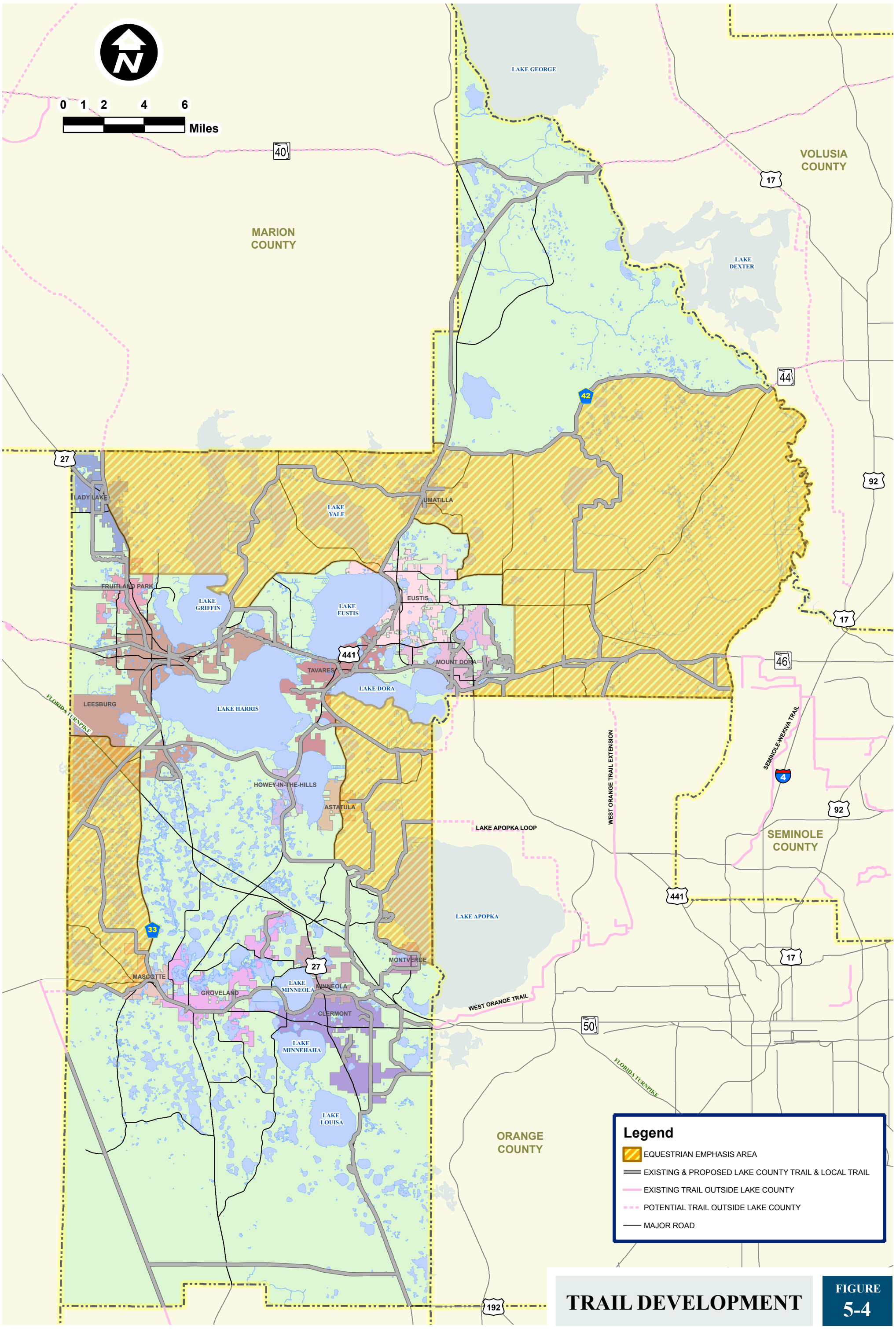
Equestrian Emphasis Areas



TRAIL DEVELOPMENT

FIGURE 5-4

Future Needs Continued

The LOS could be determined by using the population of the entire county divided by the number of miles of shared-use trails in the entire county. The advantage of this approach is simplicity and encouraging multi-jurisdictional approaches to regional trails. The drawbacks to this approach include a situation where one very active municipality could construct a large number of trails, and render the trail system geographically unbalanced. In this situation, even if the LOS standard is technically met by the County, the intent to serve the entire county is compromised. Another drawback to this method of calculation is that the County would be evaluating success based on implementation that was, in some situations, outside of direct control.

Another option is to utilize the number of miles of trails in unincorporated areas divided by the population of the unincorporated areas. The advantage of this method is the LOS is determined using only the trails and populations that are within the formal jurisdiction of the County and, therefore, are under the control of the County. The disadvantage of this method of calculation is that it might encourage the County to only construct projects in unincorporated areas, even if the trails that would serve the greatest number of county residents are within an incorporated area. It would also be a constantly moving target as municipalities annex additional land into their boundaries.

This report recommends calculating the LOS for the trail system utilizing the total number of miles of regional and minor shared-use trail, included as elements within the Lake County Trails Network, without regard to ownership or maintenance and the total population of Lake County without regard to jurisdiction. This approach recognizes the regional nature of trails to provide benefit throughout the entire county and encourages multi-jurisdictional cooperation between Lake County, municipalities, private developers, and state and federal agencies.

5.4 Identifying Future Trails

The identification of future trails began with a review of the Lake County Parks and Recreation Master Plan and the FDEP-OGT Trail Opportunity Corridors Map. With this data, the project team interviewed each town or city within the county, each of the adjacent counties and associated MPO/TPOs, the FDEP-OGT, and the FDOT for information regarding potential trails.

The project team sought to identify shared-use trails where the right-of-way was available, the potential for future funding partners was possible, connectivity of the trail between the residents and the destination was maximized, and the experience would be pleasant for trail users.

Using this information, a potential trails map was developed and circulated for comment. This information was presented at the Lake-Sumter MPO BPAC; the Lake County Parks, Recreation and Trails Citizens Advisory Board; and an Agency Public Workshop. Additional trails were added, previously identified trails were modified if necessary, and the updated map was again circulated for review by the project team. Upon completion of the potential trails map, the trails were evaluated and prioritized prior to the final public workshops. A total of 322 miles of trails were included in the final Lake County Trails Network shown in Figure 5-5.

5.5 Trail Prioritization

Using the future trails identified in Section 5.4 of this report, a trail evaluation and prioritization process was conducted. The prioritization methodology was developed and reviewed with Lake County staff and then presented for review by the Lake-Sumter MPO BPAC Trails Master Plan Subcommittee and the Lake County Parks, Recreation and Trails Citizens Advisory Board. The trails were ranked based on a variety of factors including trail value, stakeholder input, local government initiatives and support, and the availability of right-of-way.

The Trail Value Score was based on the elements listed below.

- Trail System Connectivity – This element scored the trails based upon the additional connectivity of each trail in relationship to other regional, minor, local, and unpaved trails. Points were assigned based on the number, length, and general classification of the existing trails which they connected.
- Recreational Connectivity – This element scored the trails based upon the number and quality of recreational destinations.
- Transportation Connectivity – This element scored the trails based upon the number and quality of transportation destinations.

Trail Prioritization Continued

- Scenic/Experience Value – This element scored trails based on the perceived level of positive user experience. Trails across government owned conservation areas would score high and trails adjacent to busy roads would score low.
- Environmental Impacts – This element scored trails based on the estimated environmental impacts of construction. Trails with heavy wetland or floodplain impacts would score low. Trails that were identified by the FDEP-OGT as a priority ecological corridor scored higher.

LAKE COUNTY FLORIDA

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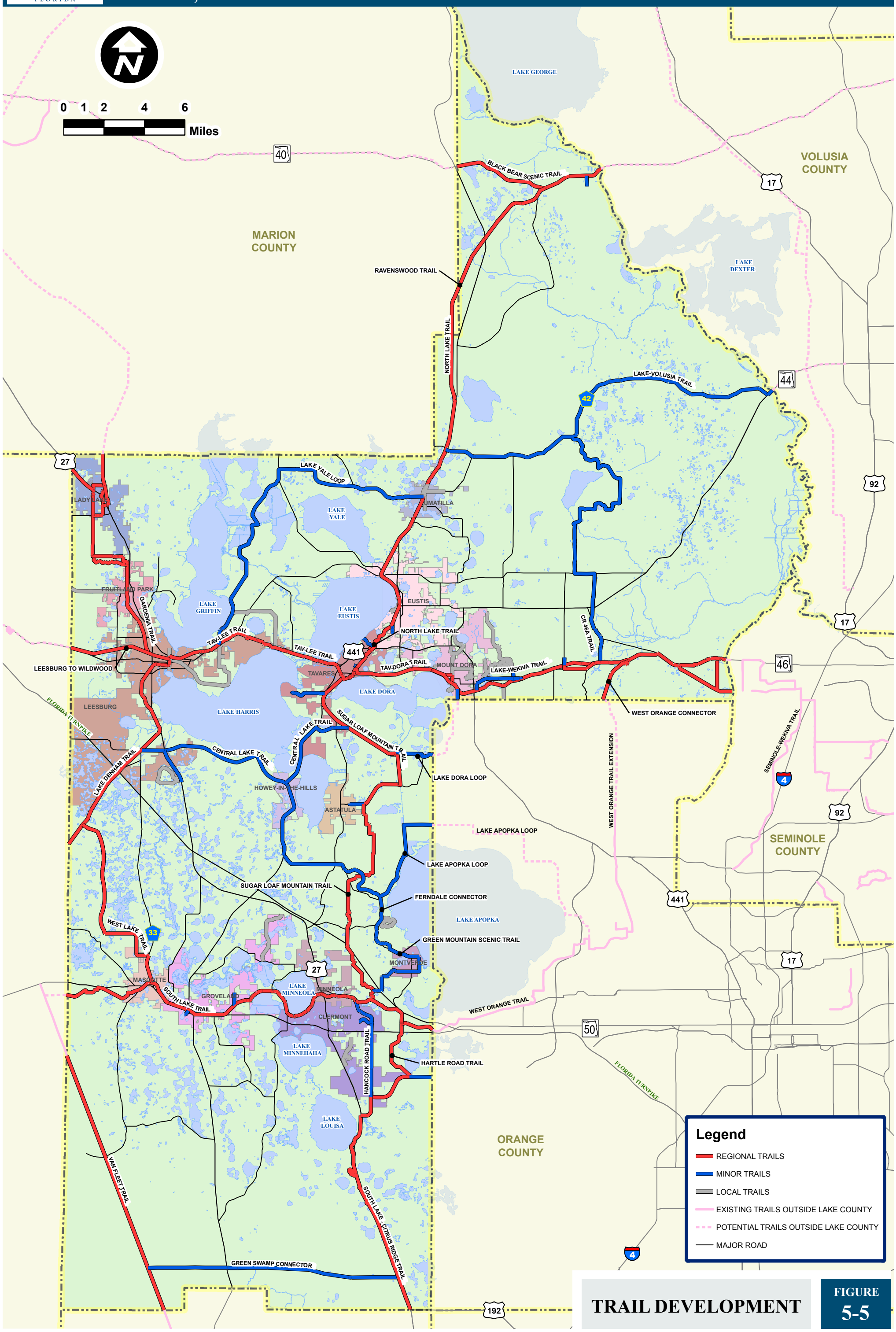
Future Trail Network



TRAIL DEVELOPMENT

FIGURE 5-5

Table 5-1 shows the weightings for each of the trail evaluation categories. Table 5-2 shows the results of the prioritization process. Figure 5-6 shows the final value and implementation rank for trail segments. The complete prioritization analysis is located in Appendix E.

Table 5-1

Trail Value and Implementation Score

Trail Value Elements (40%)

Trail System Connectivity (40%)
- *Unpaved Trails (10%)*
- *Existing Minor Trails (15%)*
  - *Community/Neighborhood Trails*
  - *Municipal Trails*
  - *Minor County Trails*
- *Existing Regional Trail Systems (40%)*
- *OGT Trails Priority (25%)*

Recreational Connectivity (20%)
- *Number and Quality of Recreation Destinations*

Transportation Connectivity (20%)
- *Number and Quality of Transportation Destinations*

Scenic/Experience Value (10%)
- *Government Owned Lands (15%)*
- *Industrial Areas (20%)(Inverse Scale)*
- *High Scenic Value Areas (50%)*
- *Adjacent to Major Roads (15%)(Inverse Scale)*

Environment (10%)
- *Wetland Impacts (15%)(Inverse Scale)*
- *Species and Habitat (15%)(Inverse Scale)*
- *OGT Priority Ecological Corridor (40%)*
- *Floodplains (15%)(Inverse Scale)*
- *Contamination (15%)(Inverse Scale)*

Stakeholder Involvement Elements (10%)

Stakeholder Survey Rank (50%)

BPAC Subcommittee Rank (50%)

Local Government Support Incentive (10%)

Trail is in Municipal Comp Plan (25%)

Municipality is Reserving R/W for Trail (25%)

Municipality has adopted MPO Trail Objectives (25%)

Funding Available from Municipality (25%)

Right-of-Way Elements (40%)

Percent Publicly Owned (30%)
- *Higher percentages score better*

Percent on Abandoned and Available Railroad Right-of-Way (30%)
- *Higher percentages score better*

Percent on Small Private Parcels (10%)
- *Smaller percentages score better*

Percent on Large Private Parcels (10%)
- *Smaller percentages score better*

DRI Property (20%)
- *Score is determined by the level at which the Trail is incorporated into the planning of the DRI.*

Table 5-2

TRAIL RANKING SUMMARY

Final Rankings	Trail System Connectivity	Recreational Connectivity	Transportation Connectivity	Scenic / Experience Value	Environment	Total Trail Value	R/W Availability	Stakeholder Survey	Final Value and Implementation
Sugar Loaf Mountain Trail	1	5	4	5	10	1	4	3	1
South Lake Trail (PH III and IV)	2	17	3	16	6	4	2	2	2
Lake Wekiva Trail	4	1	12	10	6	2	3	8	3
Tav-Lee Trail Phase II	11	4	1	19	10	6	15	1	4
Tav-Dora Trail	8	1	8	16	10	7	13	5	5
North Lake Trail Phase I (Tavares to Eustis)	8	3	2	12	10	3	17	10	6
Lake Denham Trail	14	7	8	13	1	8	11	6	7
Gardenia Trail	17	6	5	14	10	12	11	11	8
Leesburg to Wildwood	14	10	10	20	19	16	1	12	9
South Lake Trail to Citrus Ridge Phase I	3	12	6	8	10	5	6	15	10
North Lake Trail Phase II	6	8	11	11	6	9	17	13	11
North Lake Trail Phase III	5	9	15	4	6	10	5	13	12
Apopka Loop (Lake County)	8	19	18	1	19	15	20	4	13
West Lake Trail	19	17	12	6	5	18	13	6	14
Hancock Road Trail	11	12	6	8	10	11	6	15	15
Green Swamp Connector	7	11	18	7	1	13	6	17	16
Central Lake Trail	13	15	17	3	1	14	6	20	17
Black Bear Scenic Trail	16	12	12	18	1	17	6	17	18
South Lake to Citrus Ridge Phase II	18	20	18	14	10	20	15	9	19
Lake Yale Loop	20	15	15	2	10	19	19	19	20

LAKE COUNTY FLORIDA

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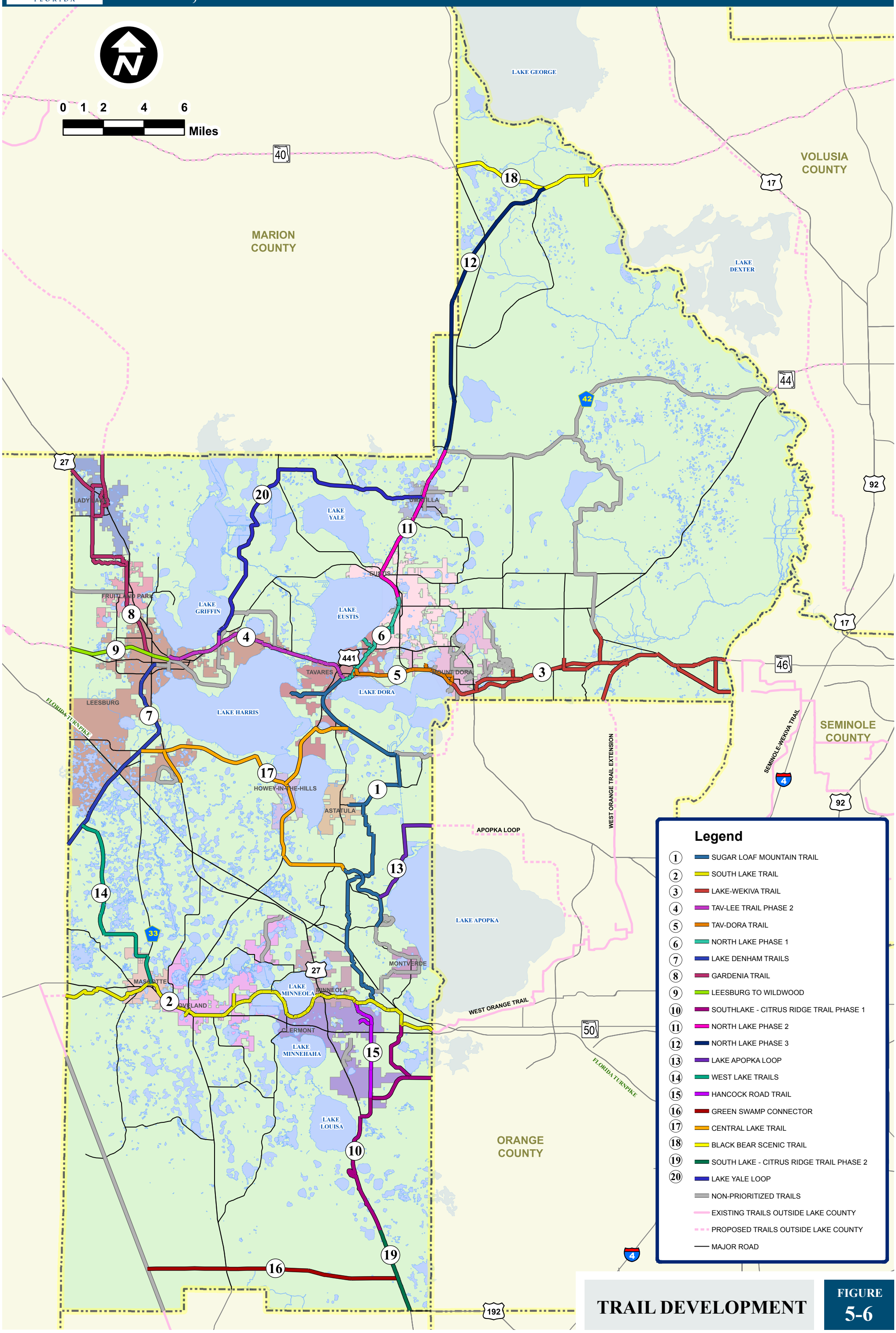
Final Trail Ranking



TRAIL DEVELOPMENT

FIGURE 5-6

5.5.1 Refining Trail Location and Design

The additional level of refinement that was completed for each trail varied based on the type of trail, status of the trail, and the rank of the trail from the prioritization process.

5.6.1 Trail Types

There are two primary types of trails utilized in the Lake County Trails Network. They are regional shared-use and major shared-use trails.

Figure 7-31 shows local trails as provided by local municipalities that had completed trail master plans or provided information to the project team.

Regional Shared-Use Trail

Regional shared-use trails are characterized by their interconnection to regional destinations and other statewide trails. They are intended to provide long distances of travel for recreational cyclists by connecting major trail systems. While these trails also connect local destinations, such as schools, parks, and downtown areas, to communities, they are considered the backbone of the larger statewide trail network.

Major Shared-Use Trail

Major shared-use trails are considered the arterial backbone of the Lake County Trails Network. They are characterized by their interconnection to regional shared-use paths within Lake County but do not necessarily link statewide trails directly to each other.

5.6.2 Trail Status

Before a trail is constructed, it must go through several phases. Figure 5-7 depicts the trail implementation process.

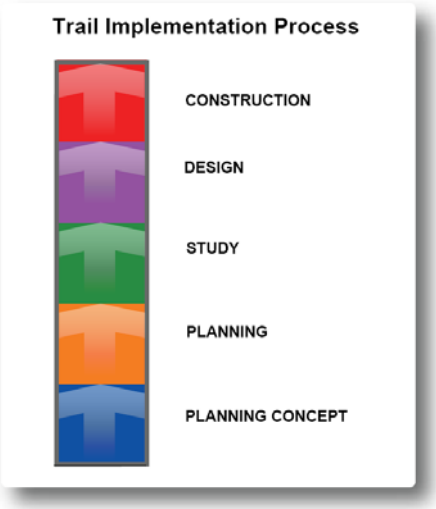
The first step is to identify the trail as a planning concept. At this stage, the idea for a trail has been raised but very little research has been completed regarding property ownership, physical constraints, environmental constraints, or public opinion. These trails ranked the lowest in priority and are the furthest from implementation. These trails are identified as a "Planning Concept" in Figure 5-8. Of the 322 total miles of trails included in the Lake County Trails Network, approximately 152 miles are considered a planning concept.

The next phase of the process is planning. During the planning phase, potential right-of-way is identified and targeted, physical and environmental constraints are identified, and conceptual solutions to the constraints are developed. The outcome of the planning process is generally an alignment and identification of critical environmental, design, right-of-way, and physical issues necessary for implementation of the trail. The trails that ranked the highest in priority were carried to this level of analysis.

These trails will in most cases be implemented within the 20-year goal for the Lake County Trails Master Plan. The information developed for these trails is included in Section 7.0 of this report and will be used by Lake County, municipalities, and other agencies to protect the right-of-way and incorporate the trail into other public and private projects. The implementation of these trails is discussed more fully in Section 6.0 of this report. These trails are identified in Figure 5-8 as "Planned" trails. Of the 322 total miles of trails included in the Lake County Trails Network, approximately 98 miles are considered planned.

The next phase of trail implementation is called a study. This is often conducted as a Project Development and Environment (PD&E) Study as intended to meet the requirements of NEPA and qualify a project for state and federal funding. The information contained in these studies is at a greater level of detail than necessary for a trails master plan so no additional analysis was conducted. These trails are identified in Figure 5-8 as "Study Complete". Of the 322 total miles of trails included in the Lake County Trails Network, approximately 50 miles have a study complete.

Figure 5-7



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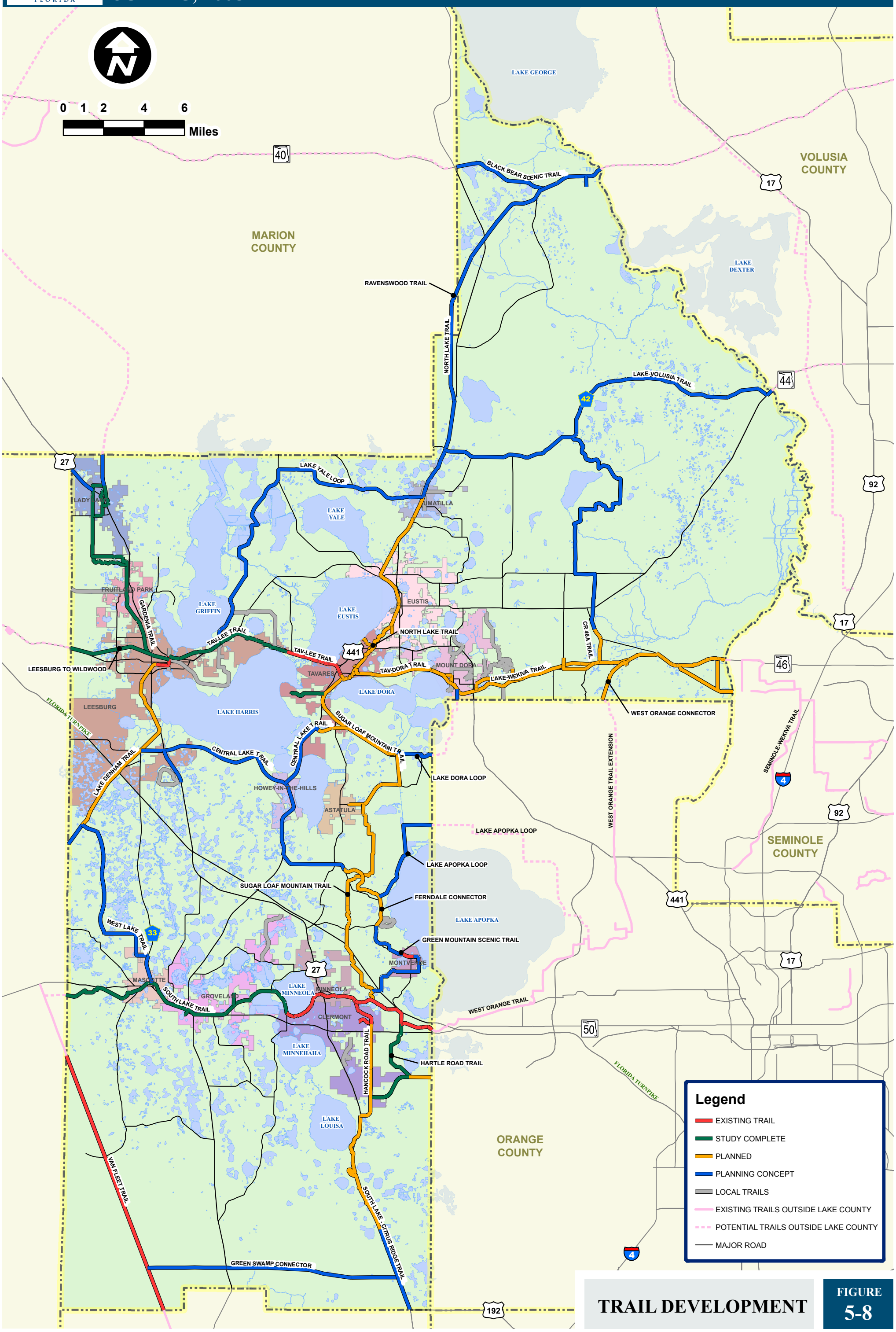
Status of Trails



TRAIL DEVELOPMENT

FIGURE 5-8

Chart 5-1 summarizes the total number of miles for each "Trail Status" category.

Design Concept

Each of the trail types might be located within the context of any number of settings or scenarios that would require a range of design concepts. Section 4.2 of this report provided descriptions of eight general design concepts.

- Rails-to-Trails
- Rails-with-Trails
- Trails Adjacent to Urban Roadways
- Trails Adjacent to Residential Streets
- Trails Adjacent to Rural Roadways
- Trails through Natural or Open Space
- Trail within the Urban Core
- Bicycle and Pedestrian Boulevards

Each of the trails that were assigned a trail status of planned, study complete or existing were evaluated to determine which design concept would be appropriate. Figure 5-9 identifies the targeted design concept for each of the trails. In most cases, the trails are combinations of several design concepts. Chart 5-2 summarizes the number of miles of each design concept and Chart 5-3 summarizes the percentage of the total Trails Master Plan that is targeted for each design concept.

Chart 5-1

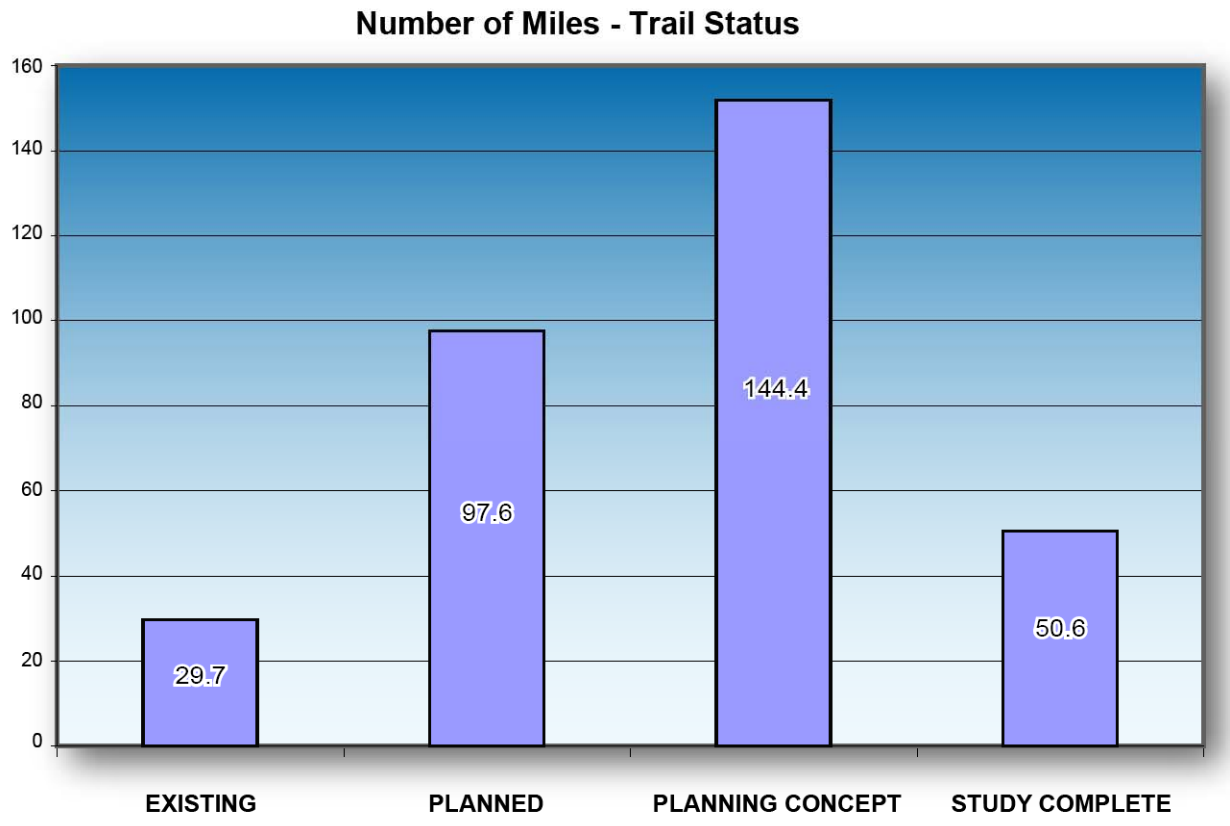


Chart 5-2

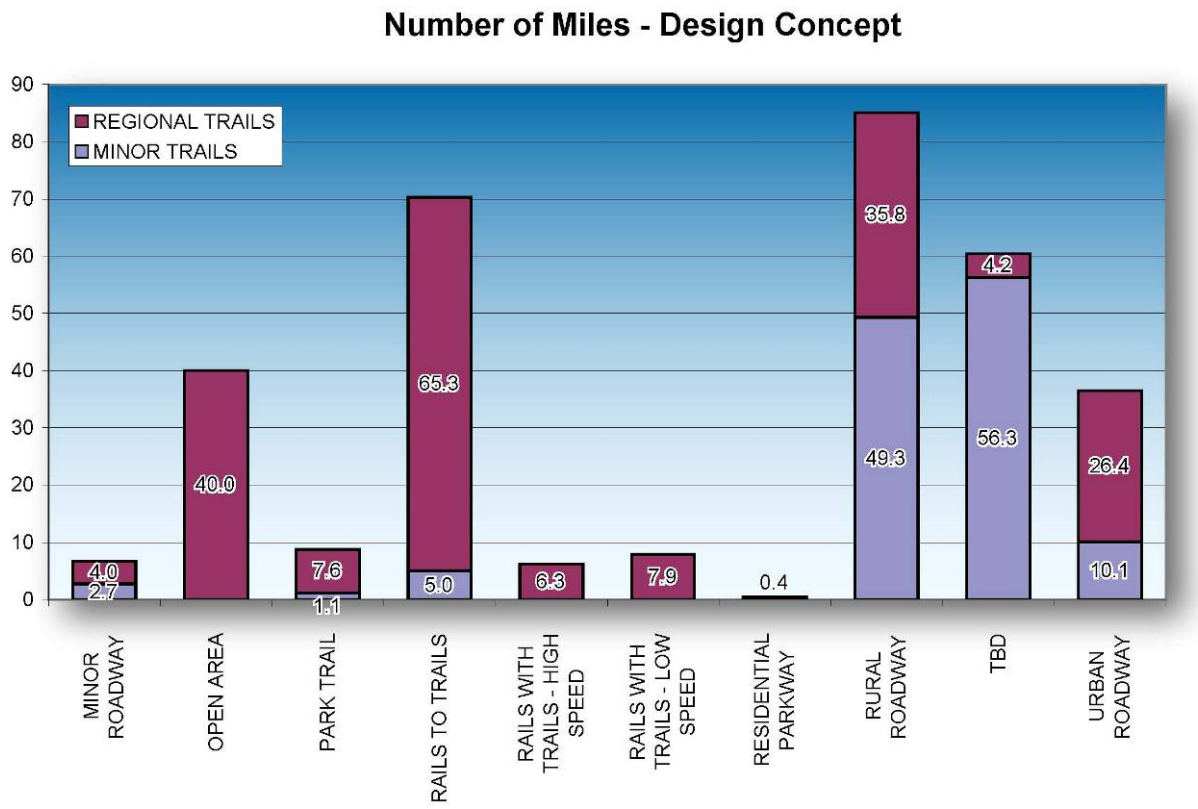
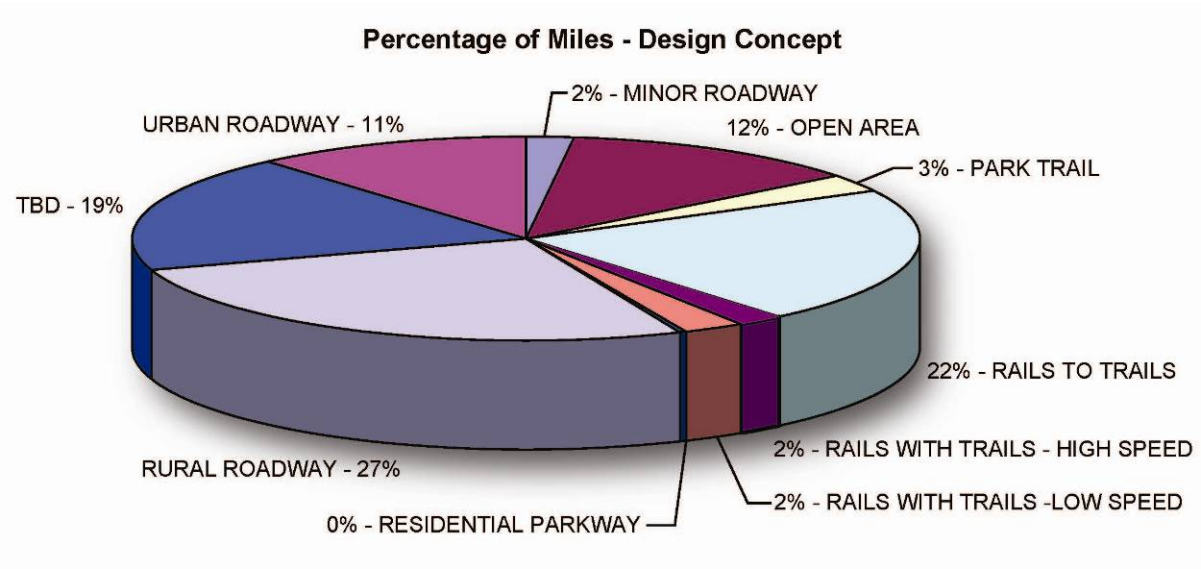
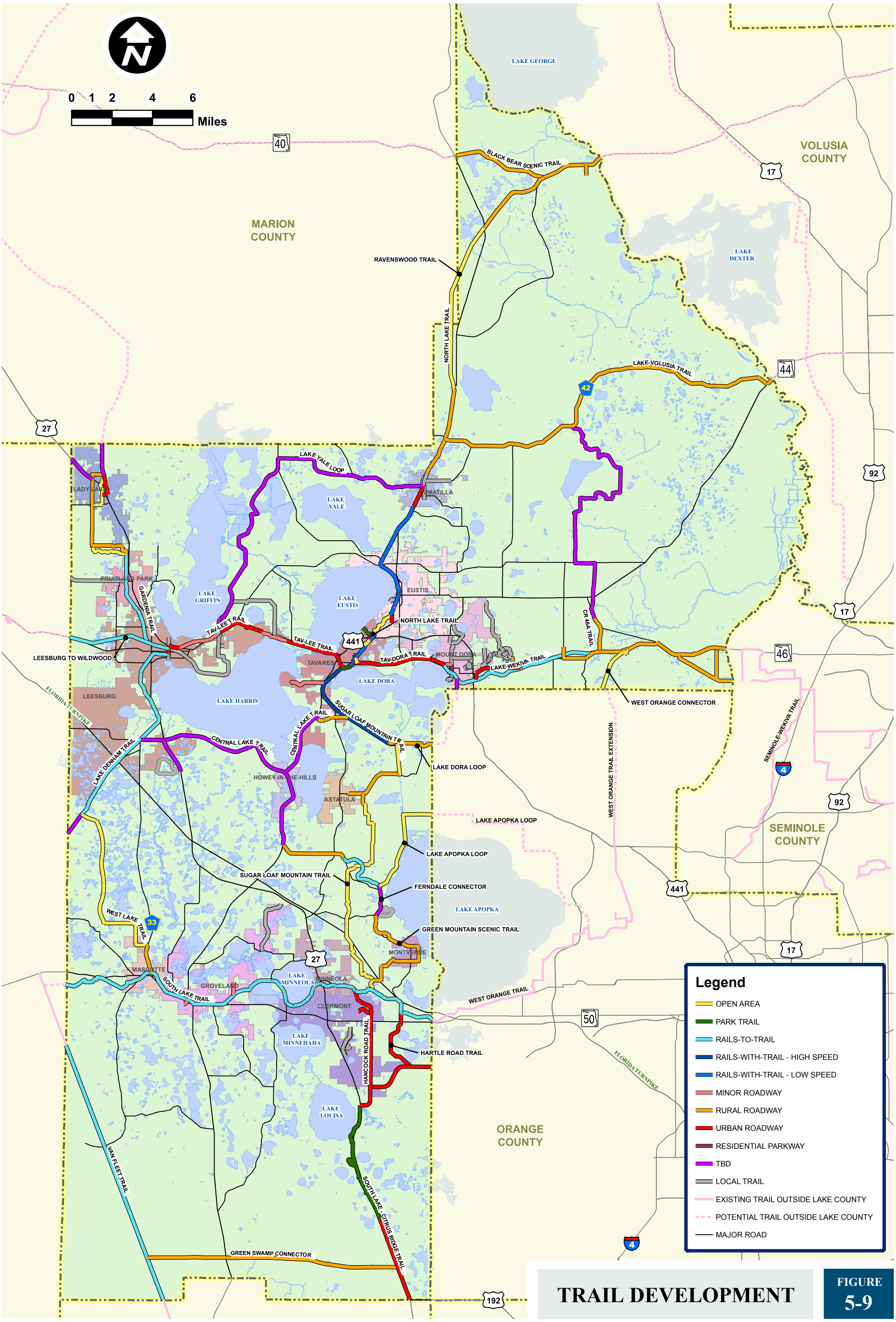


Chart 5-3



Trails Design Concept



TRAIL DEVELOPMENT

FIGURE 5-9