#### **SECTION 2.3: NETWORKS AND INFRASTRUCTURE**

The MMP includes the development of both a Conceptual Mobility Plan and a Conceptual Infrastructure Plan that will help guide recommendations for policies that both reduce VMT and provide other cost and energy saving measures for Collier County. Recent planning efforts undertaken by Collier County, including the East of CR 951 Horizon Study, the 2020 Transit Development Plan (TDP), the 2035 LRTP, and the Parks and Recreation Master Plan, have identified needs based on current policies and practices where the costs far exceed available revenue. As such, it is apparent that as Collier County continues to grow, current infrastructure planning levels within the county are unsustainable without significant changes. As such, it is one goal of the MMP to identify policies and recommendations that can allow for efficient and consolidated infrastructure planning, therefore reducing the cost burden.

To begin to understand potential policy changes for these conceptual plans, it is important to understand where the county currently stands as related to its infrastructure and networks, as well as what plans have been adopted that might provide changes in the near future. As such, the remainder of this section documents existing and planned facilities for the county's mobility networks (roads, transit, and bicycle/pedestrian facilities) as well as other infrastructure for services provided by the County.

#### **Level of Service/Adequate Public Facilities Requirements**

Florida is a "Home Rule" state and, as such, local governments have broad powers to regulate development in order to preserve the health, safety, and general welfare of the community. Until recently, the State Legislature also required local governments to adopt policies into their comprehensive plans to ensure that adequate public facilities are available concurrent with the impacts of new development for the following types of infrastructure:

- Transportation
- Schools
- Park and Recreational Facilities
- Potable Water
- Storm Water/Drainage
- Waste Water
- Solid Waste

As amended by the Community Planning Act of 2011, State-level "concurrency" requirements have been eliminated for transportation, schools, and park and recreational facilities; however, local governments may elect to maintain concurrency requirements for these facilities within their local comprehensive plans so long as the plans comply with requirements specified by the legislature. Collier County still maintains concurrency for all facilities listed above, and development requirements associated with satisfying concurrency for these facilities are documented in Section 6.02 of the County's LDC. Adopted level of service (LOS) standards for all other service areas are used for planning purposes and are documented in the County's AUIR.

The East of CR 951 Horizon Study previously calculated build-out infrastructure needs based on three LOS scenarios: "status quo," "intermediate," and "premium." As documented in the Horizon Study, the required facilities and associated costs (where provided) based on the three levels of service scenarios and build-out population scenario were calculated and compared to projected revenue. This exercise demonstrated that it is not financially feasible for the County to continue constructing infrastructure in the same manner as has been done in the past.

### **Multi-Modal Transportation Networks and Infrastructure**

The location, design, and connectivity of roadways, transit routes, and bicycle/pedestrian facilities all have a direct correlation to the amount of VMT and VHT consumed by residents, visitors, and pass-by travelers in Collier County. A discussion of each multi-modal network component is provided to understand how the County has accommodated each mode historically and what plans currently exist to plan for the future.

Maps and figures illustrating the county's existing and planned multimodal networks and infrastructure are provided starting on page 2-40.

### Roadways

As they are today, roadways are expected to remain the primary mobility component of transportation in Collier County in the future. Roadways as travel corridors not only serve automobile traffic but also as transit, bicycle (via sidewalks and bicycle paths/lanes), and pedestrian (via sidewalks) facilities. As the county continues to grow, the demand for new roadways and more roadway capacity also grows. The MMP incorporates all modes of transportation and a major component of that is the efficient use of roadways.

The Collier County Metropolitan Planning Organization's (MPO) 2035 LRTP identifies specific needs in the county for reaching its transportation-related goals and is one of the fundamental planning documents for transportation in the county. The 2035 LRTP Needs network represents the needed roadways and roadway capacity to meet the acceptable level of service standard adopted in the GMP at the furthest planning horizon in the future. In order to model land use scenarios as part of the MMP, the 2035 LRTP Highway Needs Plan roadway network is being used as the "build-out" roadway network. The use of the 2035 Needs Network as the baseline network for population build-out is strictly a testing tool for land use scenarios later

discussed in Section 4 of this Report. Map 2-10 presents the 2035 Highway Needs network as adopted in the 2035 LRTP.

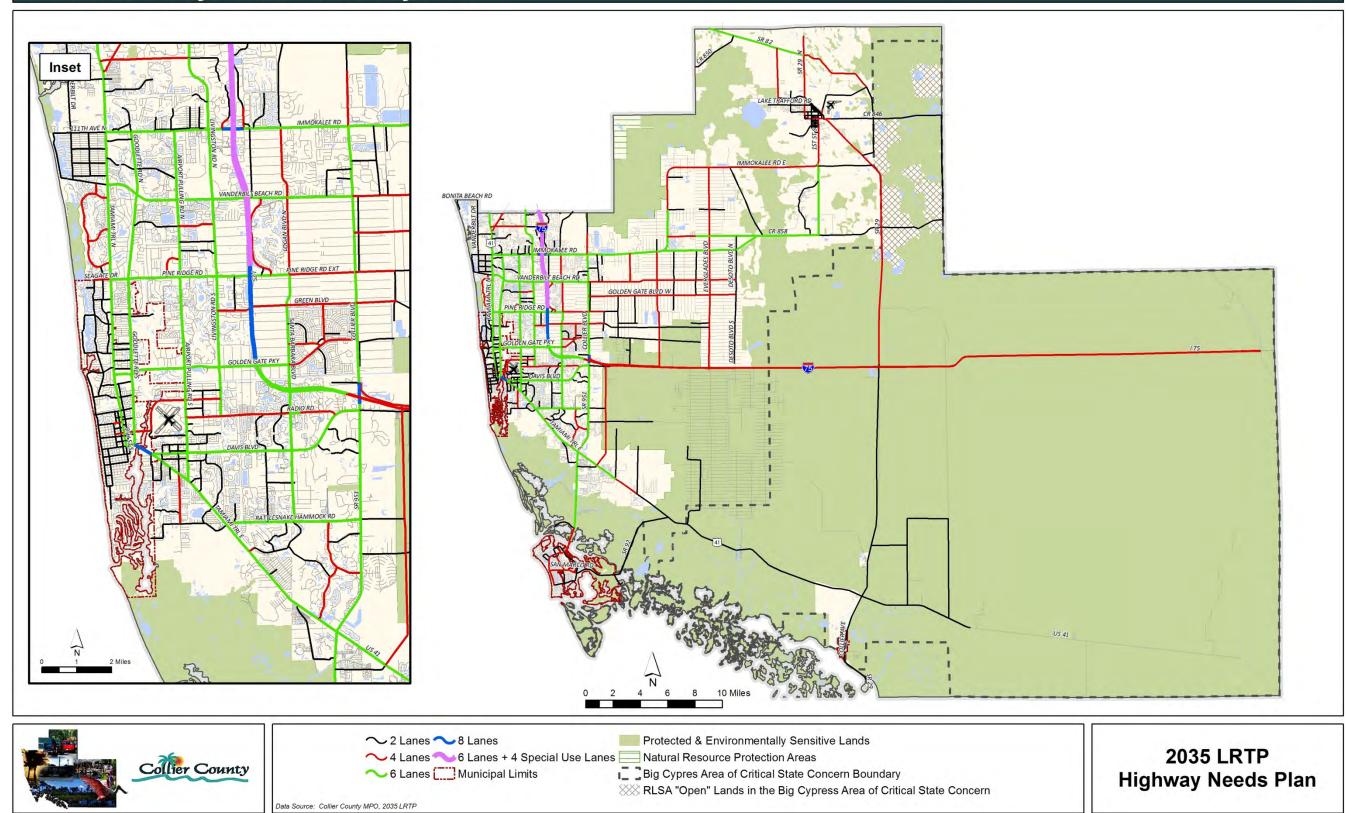
### Bridges (Golden Gate Estates)

For the purpose of improving mobility, faster emergency vehicle response time, and improved evacuation routes in GGE, the County conducted the East of 951 Horizon Study for Bridges in 2008, which identified 12 potential bridge locations in GGE. Each of the 12 potential bridge sites was evaluated and ranked based on the following criteria:

- Existing and future connectivity
- Effect on emergency service response time
- Impact on roadway network LOS
- Connection to planned or existing signalized intersections
- Impact on trip length
- Impact to the roadway being connected to the bridge
- Access to existing and planned school sites
- School bus efficiency

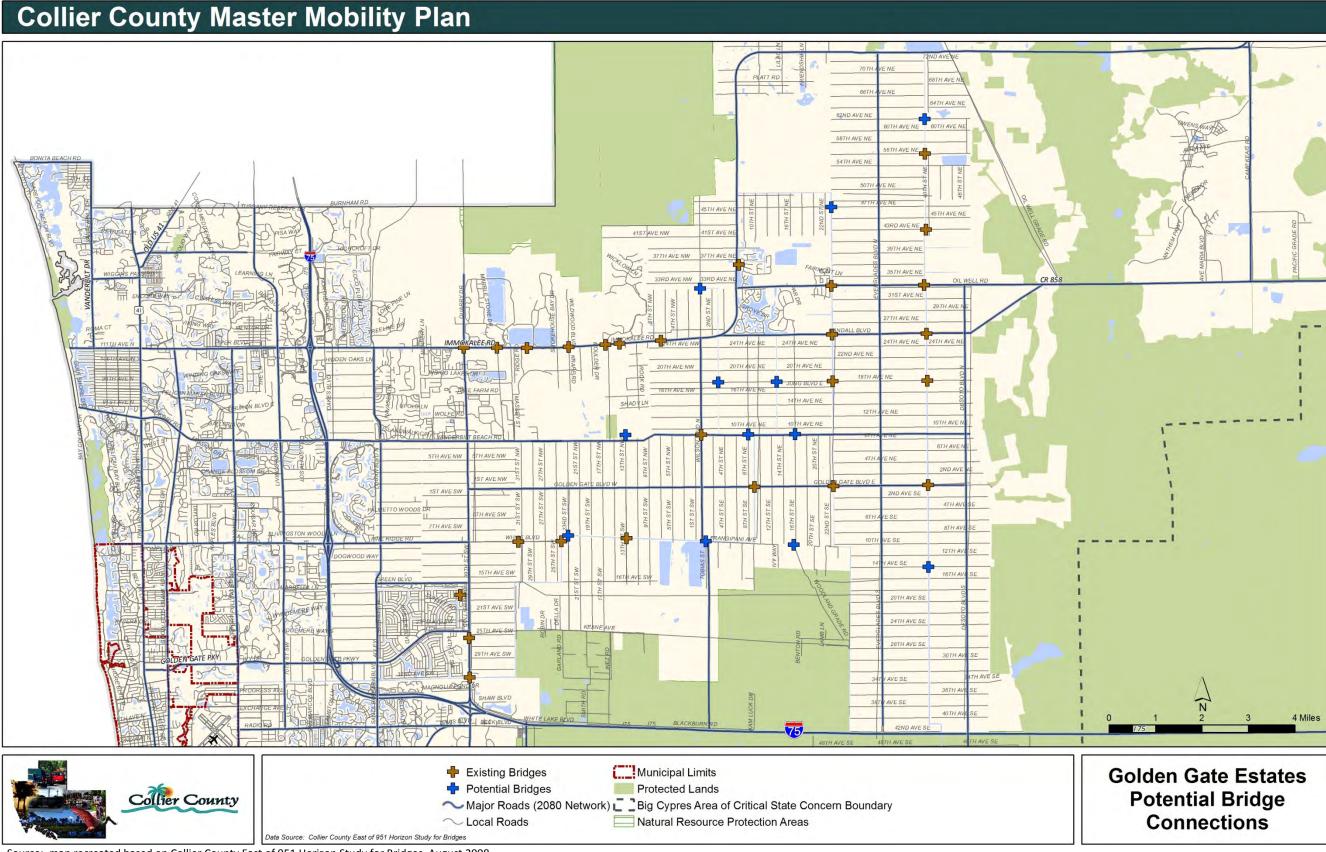
Map 2-11 presents the 12 potential bridge locations identified in the study. As part of the MMP, a model scenario was completed to assess the impact on VMT and VHT that improved connectivity in GGE, via the bridge connections, would provide. The results of the model scenario are discussed in Section 4 of this Report.

Map 2-10 2035 LRTP Needs Plan Roadway Network



Source: Collier County 2035 LRTP Needs Plan

Map 2-11
Potential Golden Gate Estates Bridges



Source: map recreated based on Collier County East of 951 Horizon Study for Bridges, August 2008

### **Public Transportation**

Local fixed-route transit is provided by Collier Area Transit (CAT). Currently, CAT operates nine routes, including six within the Naples area, fixed-route service from Immokalee to Naples, the Immokalee Circulator, and the Marco Island Express/Circulator, which provides express service between Immokalee and Marco Island. A majority of the routes operate Monday through Sunday with service span from approximately 4:00 A.M. to 8:30 P.M. with 60- to 90-minute headways, Table 2-13 provides the days of operation, service span, and headways for all of the existing CAT routes.

A requirement of the State of Florida Public Transit Block Grant Program is that transit service providers develop and adopt a 10-year Transit Development Plan (TDP). A major update of the TDP is required every five years, and progress reports are required in the interim years. The current TDP includes the planning period of FY 2011 through FY 2020. Transit improvements identified in the 2020 TDP were carried forward as part of the Long Range Transit Element of the 2035 LRTP.

Recommendations for future transit service identified in the 2035 LRTP are being used as the base transit system in the MMP and include:

- Addition of five new bus routes
- Two circulator "flex" routes in Golden Gate Estates and Everglades City
- Express routes between Lee and Collier Counties
- Express route between the Government Center and Everglades
   City
- Improvement of service frequencies, the extension of evening hours, and additional Sunday service.

Map 2-12 presents the existing and recommended CAT routes.

## Bicycle/Pedestrian Facilities

The development of a non-motorized (bicycle and pedestrian) transportation network is a critical component of the MMP. In 2010, the Collier County MPO adopted an update of its Comprehensive Pathways Plan, which was incorporated into the 2035 LRTP. This plan identifies existing bicycle and pedestrian facilities and provides a long-range pathways plan for the County, incorporating similar plans completed by both Naples and Marco Island.

The County's existing bicycle and pedestrian facilities are illustrated in Map 2-13, and the Comprehensive Pathways Plan recommended bicycle, pedestrian, and off-system facilities included in the 2035 LRTP are presented in Figure 2-21 through Figure 2-23. As presented in these figures, future bicycle and pedestrian projects emphasize better connection between the CUA and east of CR 951, as well as filling in connections between existing facilities to complete a stronger grid pattern within the CUA.

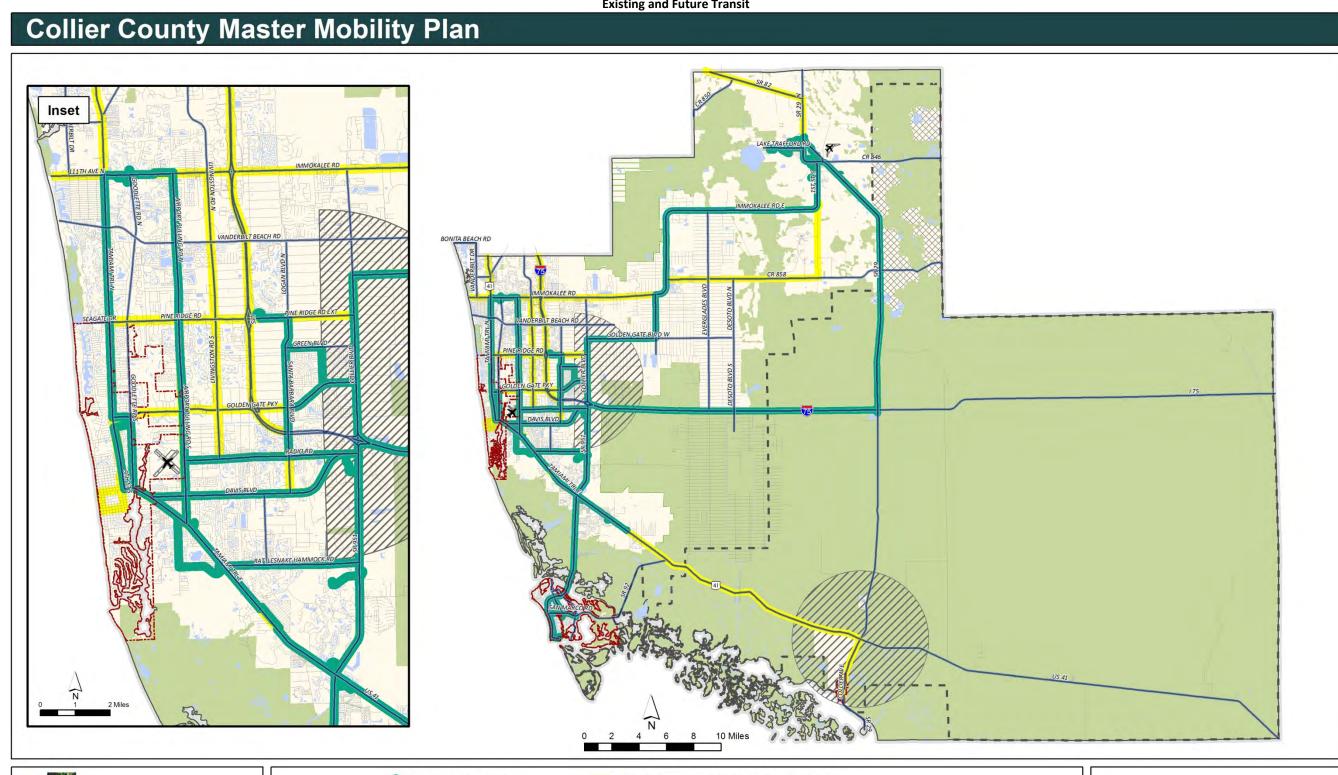
Table 2-13
Collier Area Transit Route Details

Route Number	Days of Operation	Service Span	Headways
1A	Monday-Saturday	7:00 a.m 5:25 p.m.	90 Minutes
1B	Monday-Saturday	6:00 a.m 7:25 p.m.	90 Minutes
	Sunday	7:30 a.m 5:55 p.m.	90 Minutes
1C	Monday-Saturday	6:00 a.m 7:25 p.m.	90 Minutes
	Sunday	7:30 a.m 5:55 p.m.	90 Minutes
2A	Monday-Saturday	6:00 a.m 6:55 p.m.	60 Minutes
ZA	Sunday	7:00 a.m 5:55 p.m.	60 Minutes
2B	Monday-Saturday	6:30 a.m 6:25 p.m.	60 Minutes
ЗА	Monday-Saturday	6:00 a.m 7:05 p.m.	90 Minutes
	Sunday	7:05 a.m 5:35 p.m.	90 Minutes
3B	Monday-Saturday	5:00 a.m 6:05 p.m.	90 Minutes
	Sunday	8:00 a.m 6:05 p.m.	90 Minutes
4A	Monday-Saturday	6:00 a.m 7:10 p.m.	90 Minutes
	Sunday	7:30 a.m 5:55 p.m.	90 Minutes
4B	Monday-Saturday	6:30 a.m 6:25 p.m.	90 Minutes
5	Monday-Saturday	4:00 a.m 8:00 p.m.	30 - 150 Minutes
	Sunday	4:30 a.m 7:55 p.m.	Departs Government Center at 4:30 a.m. & 5:30 p.m.

Route Number	Days of Operation	Service Span	Headways
6	Monday-Saturday	a.m 7:07	90 Minutes
8	Sunday	a.m 4:25	90 Minutes
	Monday-Saturday	a.m 4:55	Departs Immokalee at 6:00 a.m./Departs Marco
7 (Express)	Sunday	) a.m 4:55	Departs Immokalee at
7 (Circulator)	Monday-Saturday	a.m 4:55	Varies
7 (Circulator)	Sunday	a.m 4:55	Varies
8A (Express)	Monday-Saturday	a.m 7:00	Departs Naples at 5:50 a.m./Departs Immokalee
8A (Circulator)	Monday-Saturday	a.m 6:55	90 Minutes
8B (Express)	Monday-Saturday	a.m 7:30	Departs Naples at 6:20 a.m./Departs Immokalee
8B (Circulator)	Monday-Saturday	a.m 7:25	90 Minutes
9	Monday-Saturday	a.m 6:55	90 Minutes
9	Sunday	a.m 5:25	90 Minutes

Source: Collier Area Transit TDP FY 2011-2020

Map 2-12
Existing and Future Transit





Existing CAT Routes

Proposed CAT Routes (TDP)

Natural Resource Protection Areas

Proposed CAT Flex Routes (TDP)

Big Cypres Area of Critical State Concern Boundary

Municipal Limits

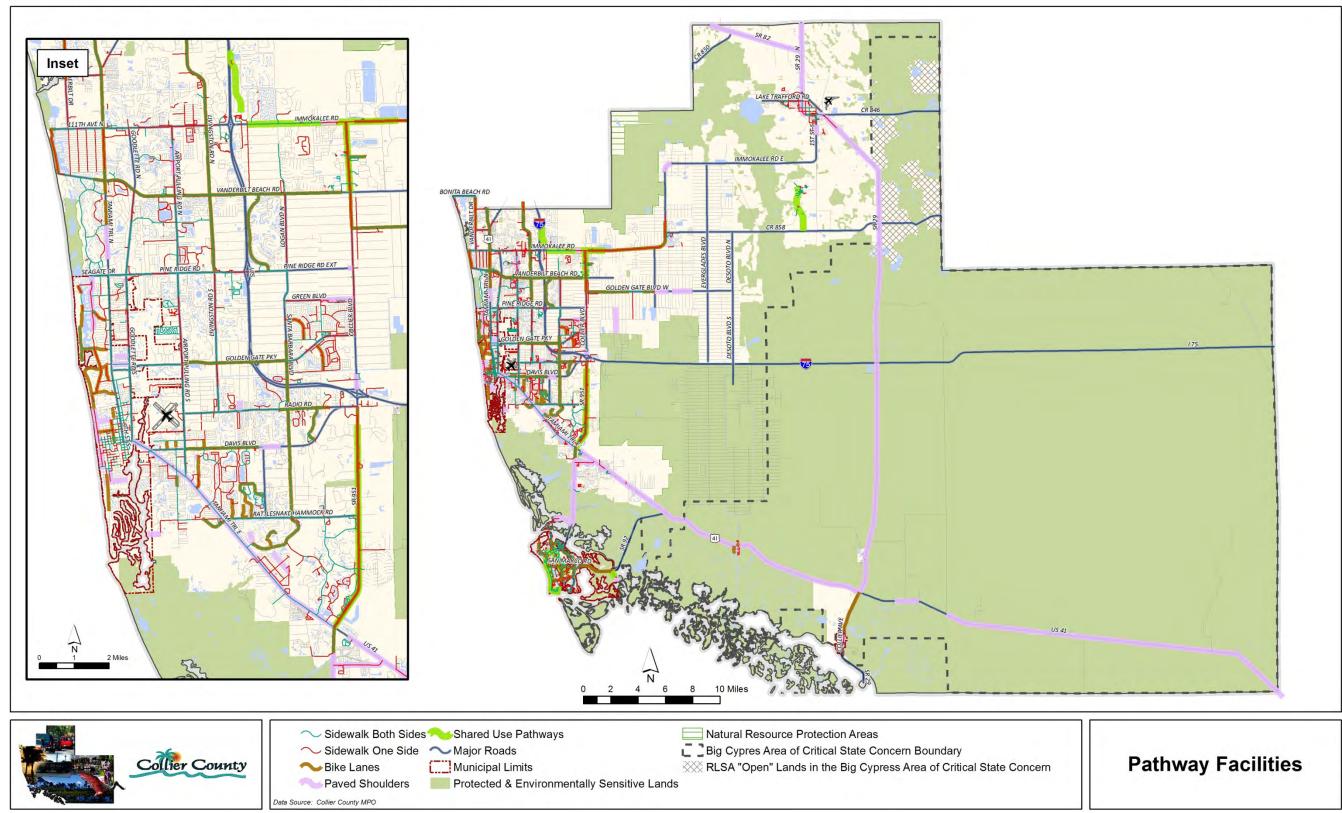
RLSA "Open" Lands in the Big Cypress Area of Critical State Concern

RLSA "Open" Lands in the Big Cypress Area of Critical State Concern

Existing and Future Transit

Source: Collier County 2035 LRTP, Transit Needs Plan

Map 2-13
Existing Bicycle and Pedestrian Facilities

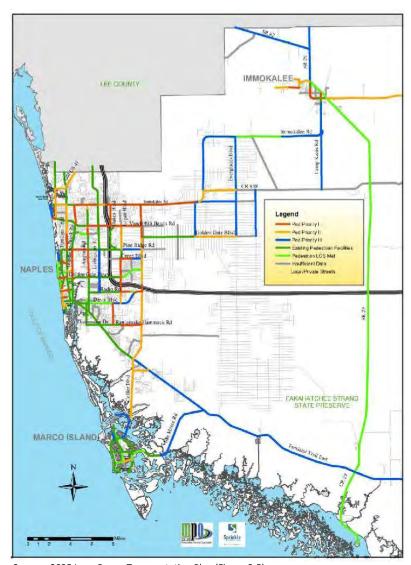


Source: Collier County MPO



Source: Collier County MPO 2035 Long Range Transportation Plan (Figure 8-4)

Figure 2-21 Recommended Bicycle Facilities



Source: 2035 Long Range Transportation Plan (Figure 8-5)

Figure 2-22
Recommended Pedestrian Facilities



Figure 2-23
Recommended Off-System Facilities

## **Non-Mobility Infrastructure and Service Areas**

In addition to infrastructure that supports its multi-modal transportation networks, Collier County also is responsible for providing other infrastructure and services to both residents and visitors. County-provided infrastructure and services examined as part of the MMP include:

- Fire rescue
- Emergency Medical Services (EMS)
- Public schools
- Parks and recreation
- Public utilities
- Stormwater
- Solid waste
- Law enforcement
- General government services
- Libraries

The timing and location of future infrastructure and facilities necessary to provide the above services at population build-out will be affected by when and to the extent development occurs in various areas throughout the county. In addition, the geographic service area that Collier County is responsible for varies by the type of infrastructure/service. As such, not all infrastructure and services provided by Collier County will be affected to the same extent by recommendations developed for the Infrastructure Concept Plan. The remainder of this section documents the geographic areas in which Collier County is responsible for providing each service, as well as the existing and planned inventories for each infrastructure area. This baseline information will provide a frame of reference during the discussion of potential strategies and recommendations related to the Infrastructure Conceptual Plan.

Maps and figures illustrating the County's existing and planned infrastructure and services are provided beginning on page 2-49.

#### Fire Rescue Services

Unincorporated Collier County is served by seven fire districts. Of these, five are independent districts and two are dependent districts governed by the Collier County BCC. These districts are geographic service areas within the county established through enabling acts, where fire/rescue services are provided.

Fire Control District	Type of District	
North Naples	Independent	
Golden Gate	Independent	
East Naples	Independent	
Immokalee	Independent	
Big Corkscrew	Independent	
Ochopee	Dependent	
Isles of Capri	Dependent	

Naples and Marco Island are each served by their own fire departments, while Everglades City owns a fire station that is operated by Ochopee Fire Rescue Control District.

Map 2-14 illustrates the location of existing, interim, and proposed fire stations by fire control district as documented in the Collier County 2011 AUIR.

#### **Emergency Medical Services**

The Collier County EMS Department provides EMS related services to all Collier County, including its municipalities. In June 2007, Collier County commissioned an EMS System Master Plan to discuss general EMS unit needs by 2020. This plan included a review and analysis of current EMS resources within the county, as well as an assessment of future EMS

needs specific to resource deployment, station staffing, operational policies and additional EMS units.

Map 2-15 illustrates the existing and proposed EMS-related infrastructure in Collier County, as documented in the Collier County 2011 AUIR.

#### **Public Schools**

The District School Board of Collier County (DSBCC) provides public education facilities to school-age residents of Collier County. The DSBCC is required by the Florida Department of Education (FDOE) to develop a Five-Year Work Program identifying changes in permanent and portable school capacity, projected enrollment, and provide revenue/expenditure information for the five-year planning timeframe. In addition, the DSBCC develops a Capital Improvement Program (CIP) that includes both a 10-year and 20-year planning horizon. The CIP identifies capital expansion needs of existing school facilities as well as new schools needed to accommodate projected growth or the replacement of portable stations.

In compliance with Florida Statutes at that time, Collier County implemented School Concurrency in 2009 and, despite the repeal of state-mandated school concurrency through the 2011 Community Planning Act, has retained school concurrency under its "Home Rule" authority. As such, the FY 2010-2014 Five Year Work Plan is a financially feasible plan that meets the adopted level of service standard (LOSS) requirements outlined in the Concurrency Interlocal Agreement.

Map 2-16 illustrates the location of existing public school sites, as well as future school sites identified by the DSBCC in its FY 2012-FY 2031 CIP.

#### Parks and Recreation

Collier County Parks and Recreation provides community and regional parks that are available to all residents and visitors of Collier County.

Regional parks are larger and include natural attractions or facilities that target visitors throughout Collier County. Community parks typically are smaller in size and draw visitors from a smaller service area. Community parks are intended to serve residents of the unincorporated county, as municipalities in Collier County have similar types of community and neighborhood parks targeting residents within their immediate geographic area.

Map 2-17 illustrates the current inventory of county and municipal regional and community parks currently available to the residents and visitors of Collier County. In addition, this map also illustrates the parks and recreation capital projects and land acquisitions planned for the next 10 years, as documented in the Parks and Recreation Master Plan (May 2011).

### Public Utilities (Potable Water and Sanitary Sewer)

Collier County has adopted, as part of the GMP Public Facilities Element, separate Potable Water and Sanitary Sewer sub-elements that set forth the policy framework for the delivery of potable water and sanitary sewer services to unincorporated Collier County.

Figure 2-24 illustrates the boundaries of the Collier County Water District while Figure 2-25 illustrates the Existing and Future Potable Water Service Areas. Figure 2-26 illustrates the boundaries of the Collier County Sewer District while Figure 2-27 illustrates the Existing and Future Sewer Service Areas.

#### Stormwater

Collier County is currently undertaking an extensive effort to plan for the countywide protection of water resources through the development of a Watershed Management Plan (WMP). Similar to the MMP, the WMP is not intended to be a regulatory document, but rather identify recommended initiatives that may lead to regulations and or policies.

The WMP identifies water resource concerns regarding:

- Excessive fresh water discharges from canals (including ground water discharges) especially to Naples Bay
- Failure by the drainage system to provide the desired level of flood protection
- Pollutant discharges associated with development degrade water quality conditions
- Aquifer draw down impacts due to reduced recharge and potable and agricultural withdrawal demands

The restoration of historical watershed functions will allow the County to effectively manage resources for both human and natural environmental needs, running parallel to the objectives of the MMP. Though the watershed management planning process is an extensive effort being undertaken by the County separately from the MMP, aspects of this process tied to the development of the MMP will be identified, as appropriate, in further sections of this Report.

#### Solid Waste

Collier County Solid Waste Management provides solid waste disposal services to all of Collier County with the exception of Naples.

Map 2-18 illustrates the existing and planned solid waste-related infrastructure for Collier County. The county currently owns and operates several solid waste facilities, including four recycling centers, two landfills and one transfer station. In 2011, Waste Management Inc., of Florida completed construction of a Landfill Gas to Energy Plant that it operates at the Collier County Landfill. In order to serve its growing population, the County has identified the immediate need for an additional recycling center and resource recovery park.

### Law Enforcement and Correctional Facilities

Map 2-19 illustrates the existing law enforcement-related infrastructure (police, sheriff, and correctional facilities) for Collier County, as well as the Collier County Sheriff's Office (CCSO), City of Naples police, and City of Marco Island police. In addition to unincorporated county, CCSO provides law enforcement services to Everglades City. CCSO also provides correctional facility services countywide.

In 2007, a Jail Master Plan was prepared for Collier County to identify correctional facilities needs over a 3-year, 5-year, and 10-year timeframe. One of the key findings of the Jail Master Plan is the need to place future correctional facilities in close proximity not only to the growing population centers but also to court system needs. In addition, the 10-year Master Plan horizon identified a need to expand existing facilities and to construct a new expandable jail facility at centralized site within the county since the Naples Jail Center site is essentially "built out" by area limitations set forth in the PUD.

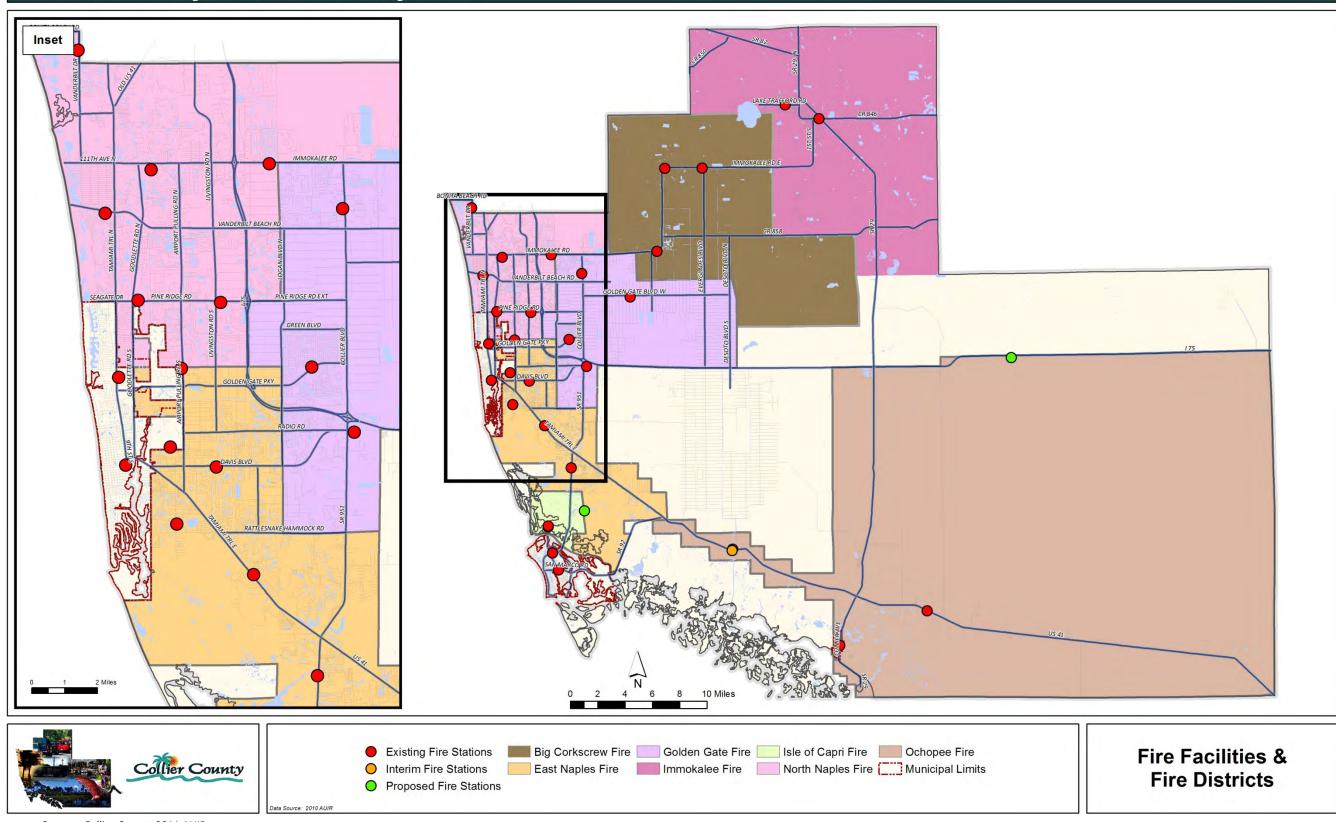
#### Government Buildings

Map 2-20 illustrates the government buildings associated with providing primary government services, including existing and leased facilities. The City of Naples and the City of Marco Island also provide government facilities related to their municipal functions. Collier County's main government complexes are located in the CUA, with satellite government offices located in GGE and Immokalee to serve the needs of residents and others located east of CR 951.

#### Libraries

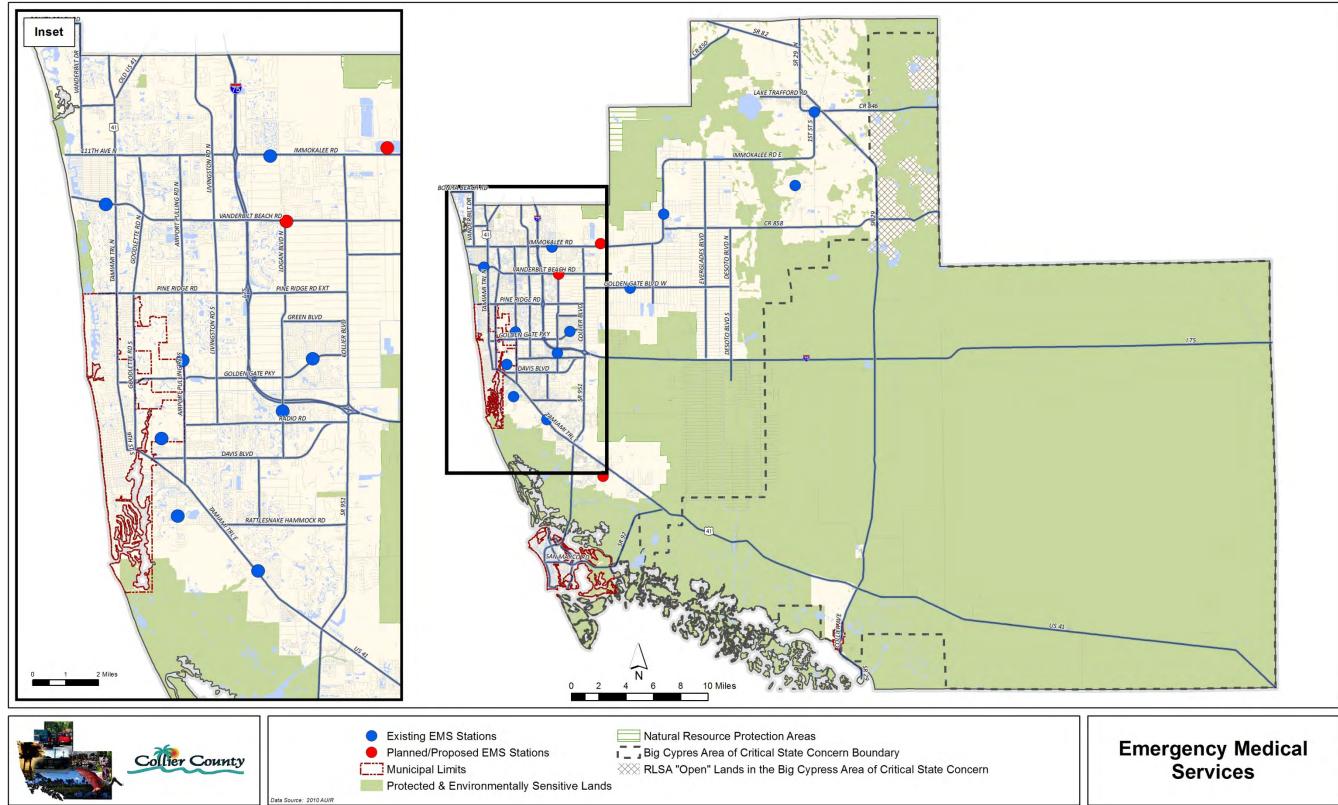
Map 2-21 presents the location of the county's public libraries, which serve residents and visitors countywide. The Collier County Public Library provides a variety of services, including materials (books, magazines, videos, etc.), computer/Internet access and meeting space.

Map 2-14
Fire Facilities and Fire Districts



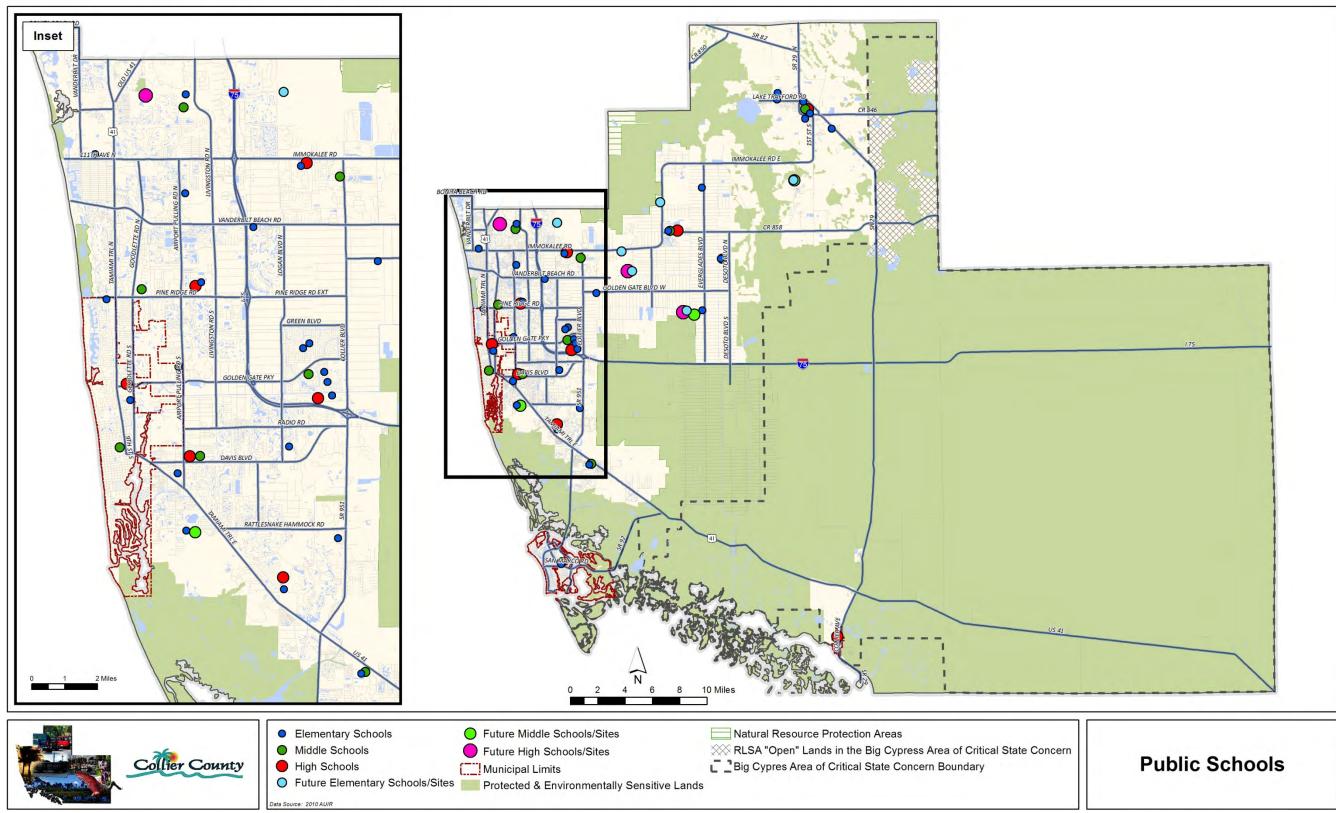
Source: Collier County 2011 AUIR

Map 2-15 Emergency Medical Services



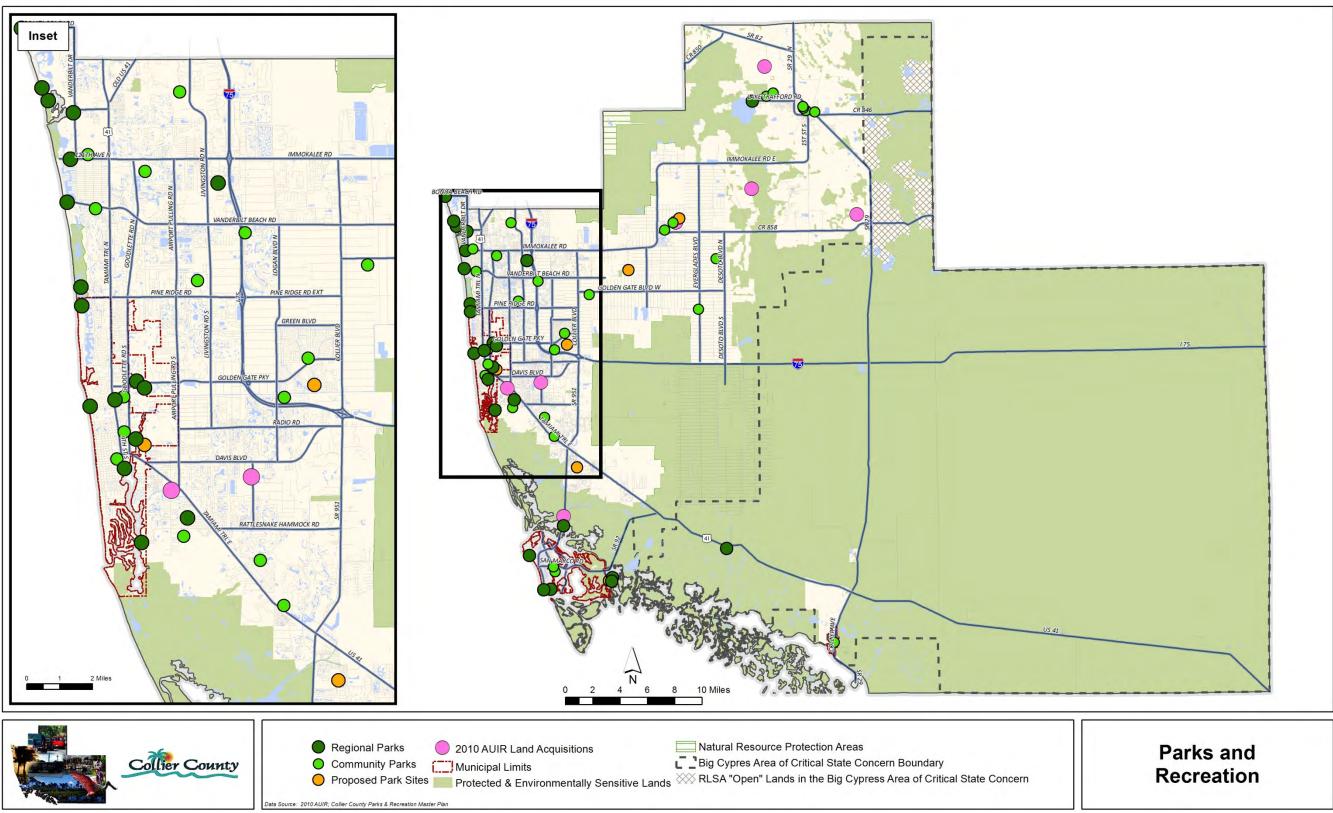
Source: Collier County 2011 AUIR

Map 2-16
Public Schools

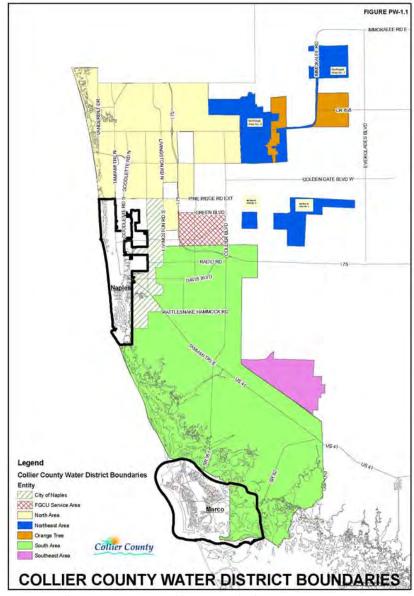


Source: District School Board of Collier County

Map 2-17
Parks and Recreation

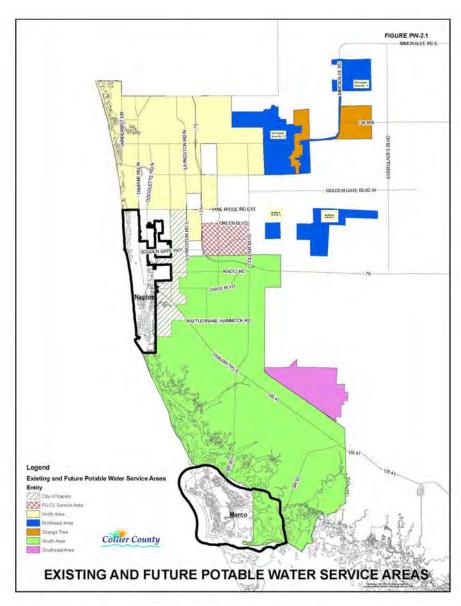


Source: Collier County Parks and Recreation Master Plan, May 2011



Source: Collier County GMP, Potable Water Sub-Element, Figure PW-1.1

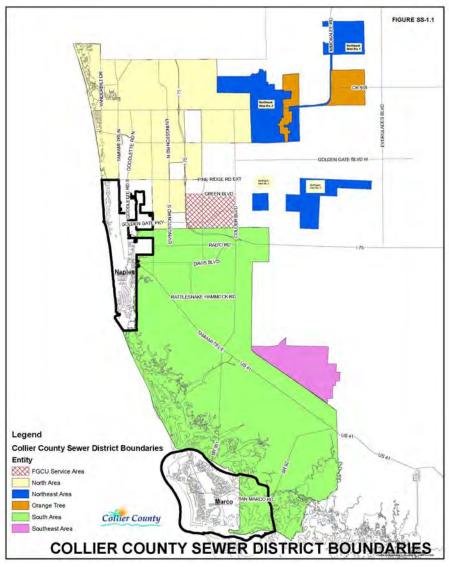
Figure 2-24
Collier County Potable Water District Boundaries



Source: Collier County GMP, Potable Water Sub-Element, Figure PW-2.1

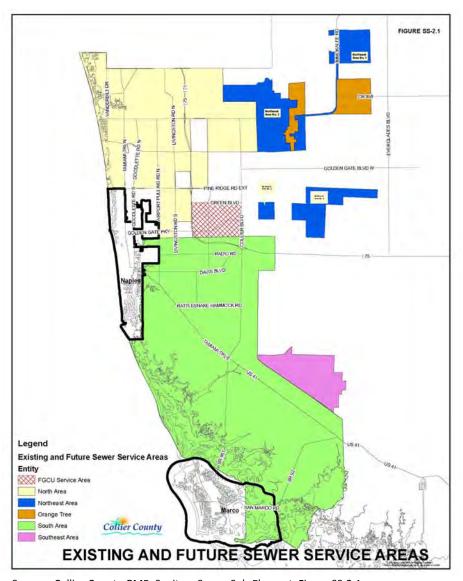
Figure 2-25
Collier County Existing and Future Potable Water Service Areas

2-52



Source: Collier County GMP, Sanitary Sewer Sub-Element, Figure SS-1.1

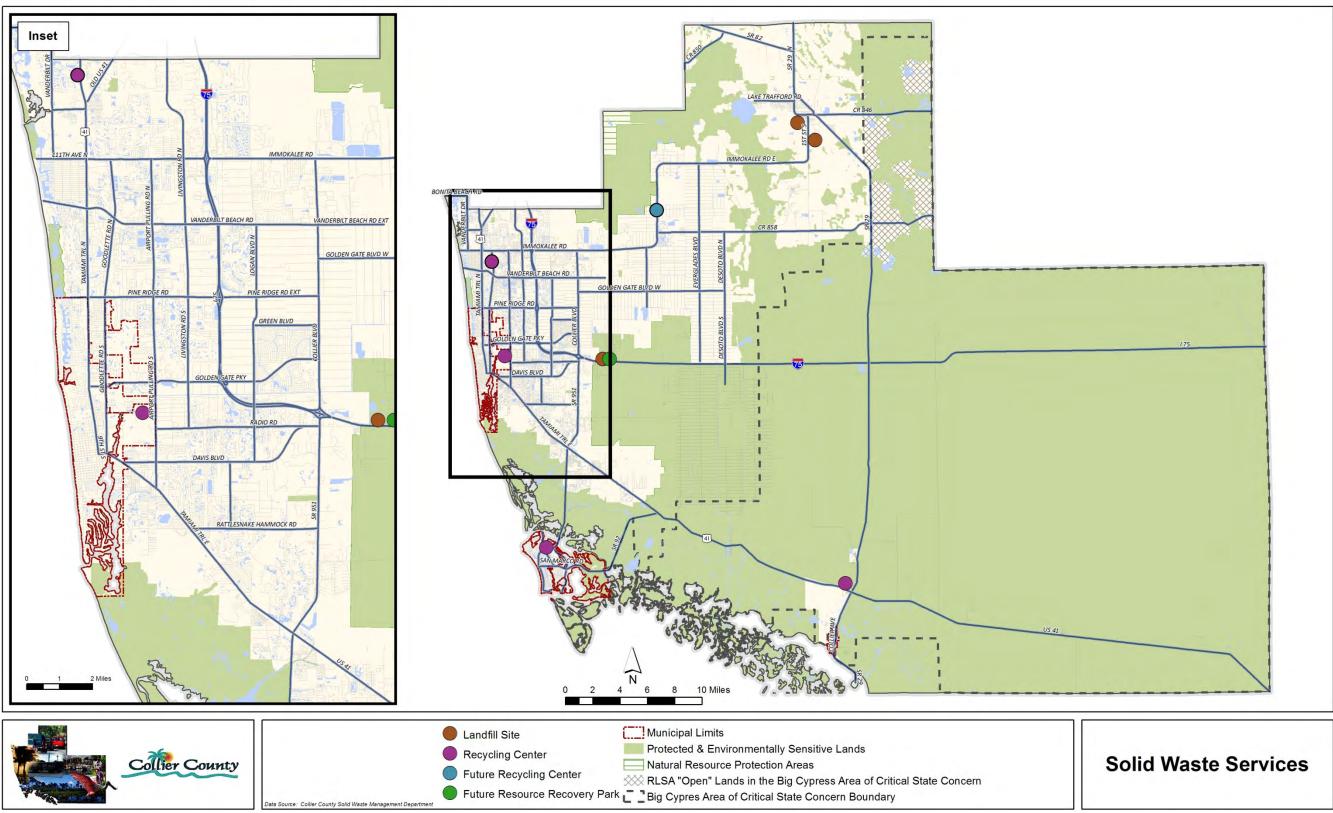
Figure 2-26
Collier County Sanitary Sewer District Boundaries



Source: Collier County GMP, Sanitary Sewer Sub-Element, Figure SS-2.1

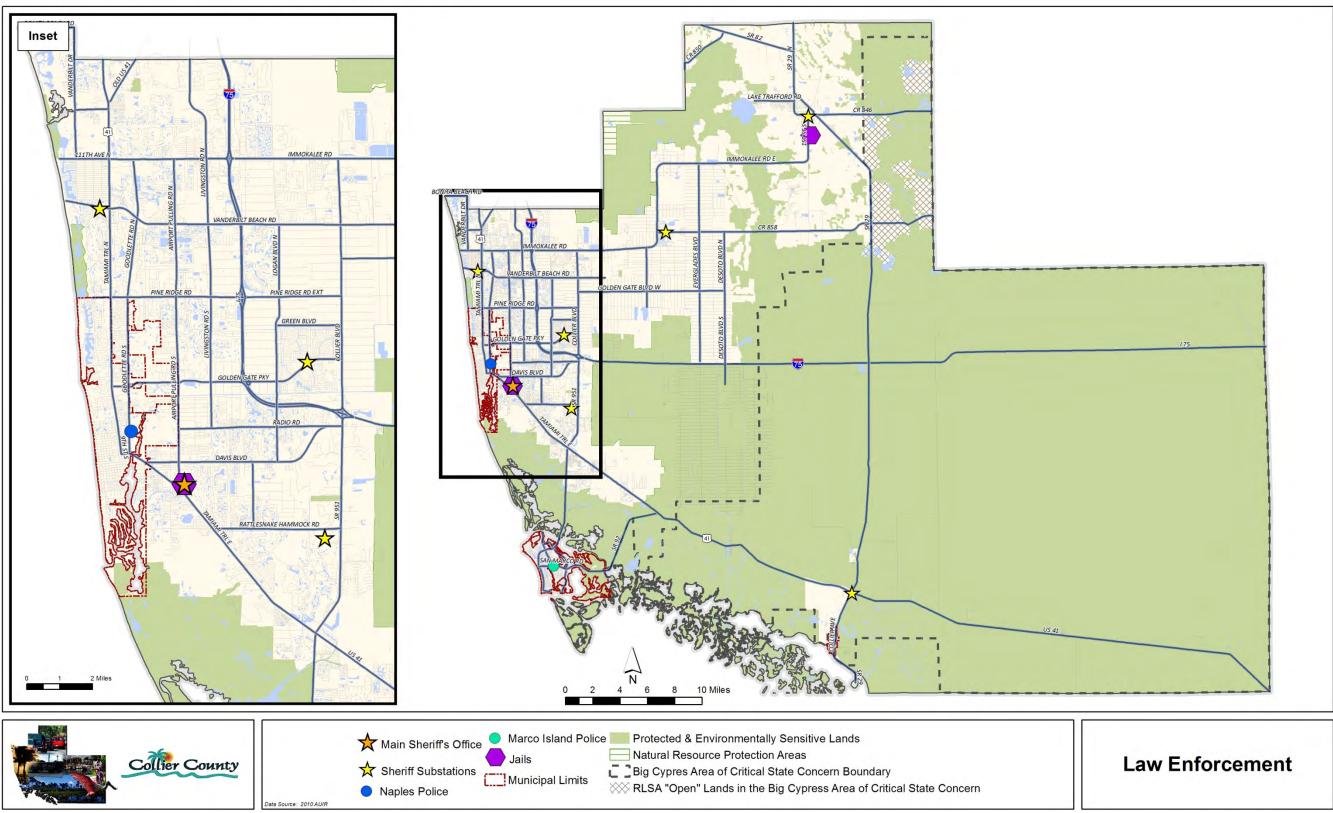
Figure 2-27
Collier County Sanitary Sewer Service Areas Boundaries

Map 2-18 Solid Waste



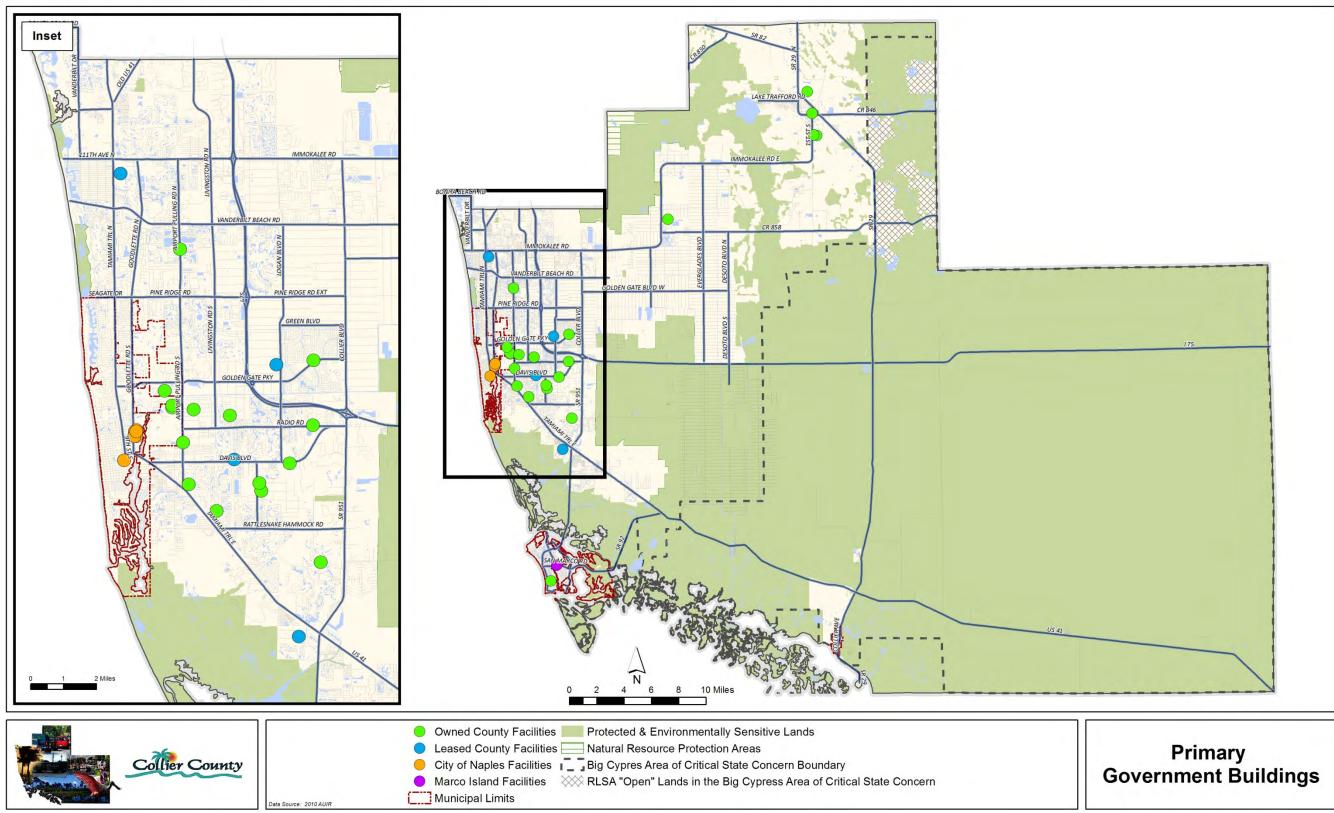
Source: Collier County Solid Waste Management Department

Map 2-19 Law Enforcement



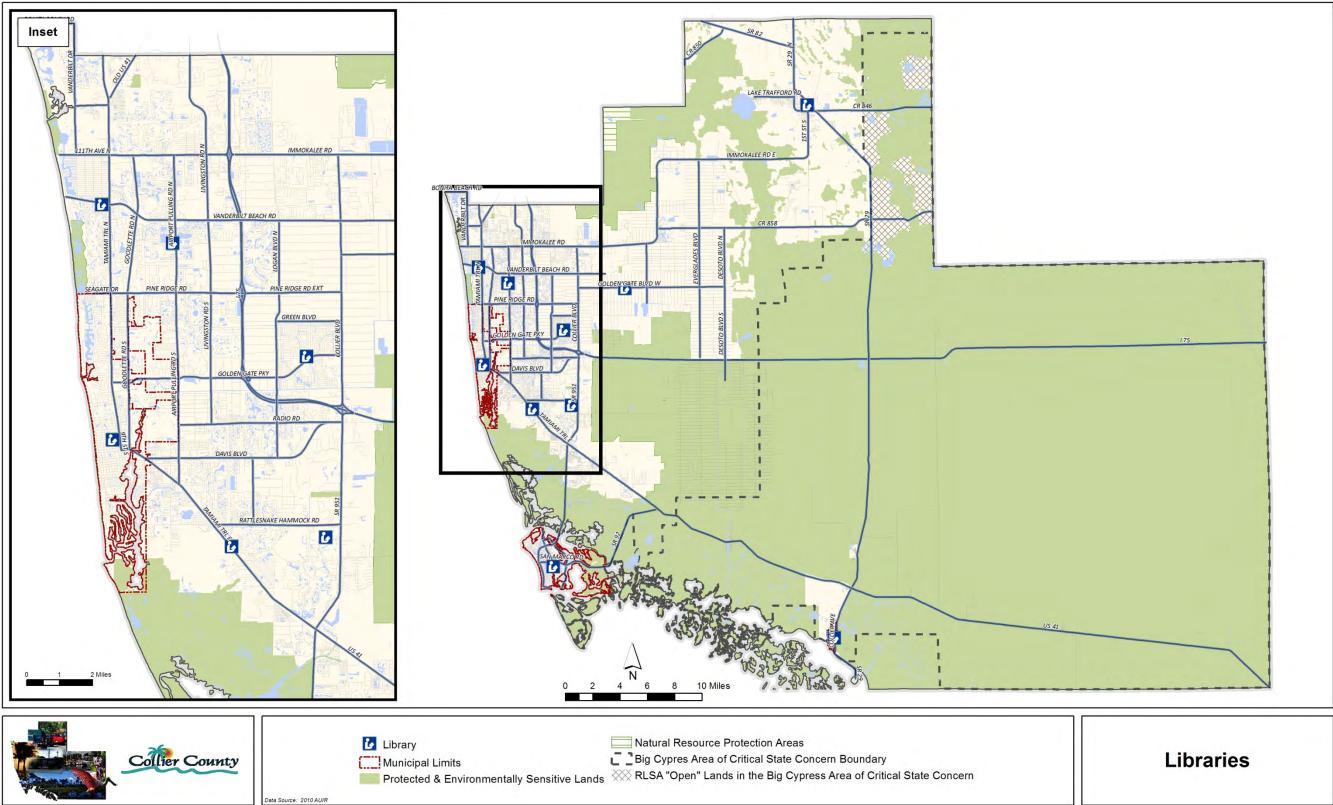
Source: Collier County 2011 AUIR

Map 2-20
Primary Government Buildings



Source: Collier County 2011 AUIR

Map 2-21 Libraries



Source: Collier County 2011 AUIR