Activity Center #9 Interchange Master Plan

Final

Prepared for:

Collier County Government

November 2000

Prepared by:

WilsonMiller

Activity Center #9 Interchange Master Plan

Project Leadership

Board of County Commissioners

Timothy J. Constantine, Chairman

James D. Carter, Ph.D., Vice Chairman

Barbara B. Berry

Pamela S. MacKie

David Brandt

Collier County Staff Review Team

Ron Nino, AICP, Current Planning

Ray Bellows, AICP, Current Planning

Irene Szmorlinski, AIA, Comprehensive Planning

Nancy Simeon, RLA, Current Planning

Ed Kant, P.E., Transportation Services

Gavin Jones, P.E., AICP, Naples MPO

David Weeks, AICP, Comprehensive Planning

Amy Taylor, AICP, Comprehensive Planning

Stan Litsinger, AICP, Comprehensive Planning

Property Owners and Representatives

Jim Roath, Tollgate PUD, Super 8 Motel

Ralph and Bonnie Shaw, White Lake PUD, individual lot

Dwight Nadadeau, Representative

Don Pickworth, Representative

Pat Papineau, Tollgate PUD

Robert Duane, Representative

Bruce Anderson, Representative

Art Lennox, Mobil Gas Station

Steve Miller, Amoco Gas Station

Cathy Daily, McDonalds

Matt Lorenzo, White Lake PUD

Margaret Emblidge, Golden Gate Commerce Park

Robert Smith, Alligator Alley PUD

Linda Marszalkowski, Industrial Zoned Parcel

Bryan Milk, Representative

Cary Black, Cracker Barrel

Grant Westerman, Shaw Aero

Tim Hancock, Representative

Stephen Sposato, Representative

WilsonMiller, Inc.

Anita L. Jenkins, AICP, Project Planning

Jeffory L. Perry, AICP, Transportation Planning

Matthew Horton, Project Design

Katherine Chachere, Project Design

Bill Bowers, Project Design

Robin Renfroe, RLA, Project Design

WilsonMiller

Section 1—Introduction

BACKGROUND

In the past decade, Collier County has placed greater emphasis on improving its aesthetic appearance. In 1996, the Board of County Commissioners (BCC) adopted architectural guidelines that require all commercial development to build to higher standards that represent the quality of the community.

During the 1997 Evaluation Appraisal Report (EAR) Growth Management Plan (GMP) amendments, the BCC adopted an amendment that will further the efforts to improve the appearance of Collier County. The County expects to achieve this by developing an Interchange Master Plan (IMP) that will create a "gateway" into the greater Naples area at Activity Center #9, which is located at the intersection of I-75 and Collier Boulevard.

The GMP amendment specifically says:

"The IMP is intended to create an enhanced "gateway" to Naples. The IMP process shall be initiated by the property owners and/or their representatives by meeting with the County planning staff within 60 days of the adoption of this Growth Management Plan amendment and a finding of compliance from the Department of Community Affairs. The purpose of the meeting will be to establish a mutually acceptable vision statement for Activity Center #9. The Interchange Master Plan shall be adopted by Resolution by the Board of County Commissioners. All rezones thereafter shall meet the intent of the vision statement.

Subsequent to the development of the vision statement, new projects within Activity Center #9 are encouraged to have a unified plan of development in the form of a Planned Unit Development. The mixture of uses allowed in Interchange Activity Center #9 shall include the full array of commercial uses; residential and non-residential uses; institutional uses; Business Park; hotel/motel uses at a density consistent with the Land Development Code; industrial uses in the northeast, southwest and southeast quadrants. The mix and intensity of land uses shall meet the intent of the vision statement and be defined during the rezoning process. The entire Interchange Activity Center is eligible for up to 100% of the entire acreage to be developed for and of the uses referenced above, except the maximum amount of commercial acreage shall not exceed 55% of the total acreage (632.5 ac.) of Interchange Activity Center #9. The factors to consider during review of a rezone petition shall be compliance with the vision statement and those included in the Mixed Use Activity Center."

STUDY PARAMETERS

Subsequent to adopting the Activity Center #9 GMP amendment, the BCC established the study parameters for the IMP. The components required in the IMP include the following:

- *Land Use*—amount, type, and location of land uses
- *Transportation and Access*—traffic generation volume and characteristics of uses; shared access; frontage roads; restricted, or prohibited access
- *Landscaping/Buffers*—requirements for unified landscape theme to enhance the "gateway" image
- *Signage*—development of unified signage plan for the interchange
- *Architecture*—specific architectural standards for buildings
- *Map(s)*—access features/restrictions/requirements: possible locations of shared access, frontage or reverse frontage roads, bypass roads; location of required buffer areas; other components listed above as may be appropriate

Section 1—Introduction

The BCC also established that the IMP provisions shall apply to properties that are zoned but undeveloped. Provisions shall be implemented in the Land Development Code (LDC) as a zoning overlay.

Study Purpose

The purpose of the IMP is to develop landscape, signage, and architectural design concepts that will create an enhanced gateway into Collier County. In addition, the IMP is also intended to develop transportation/land use strategies and conceptual transportation system improvements, including an updated Access Management Plan for lands within Activity Center #9. Figure 1-1 presents the IMP study area.

Opportunities and Constraints

As presented in Figure 1-2 on the following page, design opportunities and constraints were identified throughout Activity Center #9. The opportunities represent the existing conditions that will afford the greatest possibilities to achieve the defined objectives. The constraints are those existing conditions that may hinder the ability to achieve the defined objectives.

The general design opportunities for the Activity Center #9 are as follows:

- The exit #15 interchange offers landscaping opportunities
- Existing right-of-way can accommodate design elements and pedestrian activity
- Lakes and natural preserves create pleasant vistas for motorists
- The area has adequate undeveloped property that will comply with the IMP
- The existing hotels and restaurants create an active environment

The general overall constraints for the Activity Center #9 are as follows:

- Existing and approved developments may impede a cohesive design concept in certain locations
- Multilane roadways and busy intersections complicate pedestrian movement

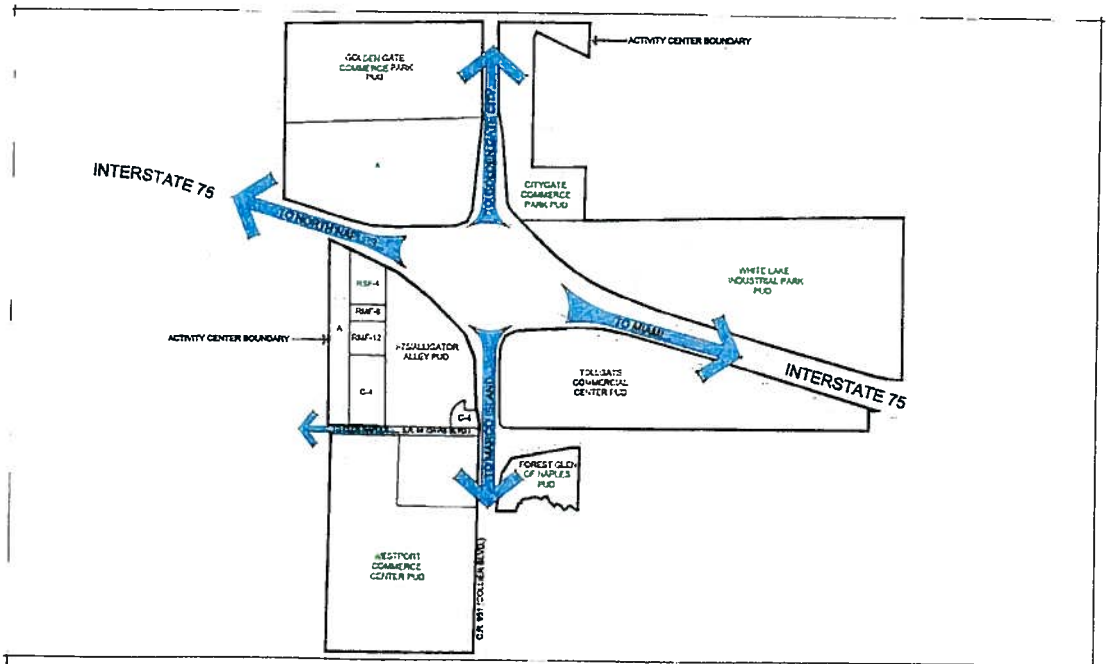


Figure 1-1 ACTIVITY CENTER #9
IMP STUDY AREA

Future Transportation Improvements

Additional opportunities and constraints will be realized with the construction of future transportation improvements within Activity Center #9.

The SR-84 Corridor Study recently completed for the FDOT recommended improving SR-84 to a multilane configuration along the existing alignment instead of realigning the corridor eastward to intersect with CR-951 one mile south of the current intersection. During the course of the study, it was determined that regardless of the alignment, the existing SR-84/CR-951 intersection would have to be grade separated due to the significant influence (and vicinity) of the I-75 interchange coupled with the activity center development. Widening along the existing alignment was found to be more cost-effective and have fewer environmental impacts. A Preliminary Development and Environmental (PD&E) study is underway to determine the appropriate grade separation concept for the intersection. As a result of what likely is to be a staging of improvements (first a multilaning of SR-84 followed by a grade separation improvement), special access management considerations will be needed.

The Access Management Plan recommended in *Section 4—Land Use & Transportation* will need to be updated in accordance with future roadway improvements, specifically the grade separation improvements.

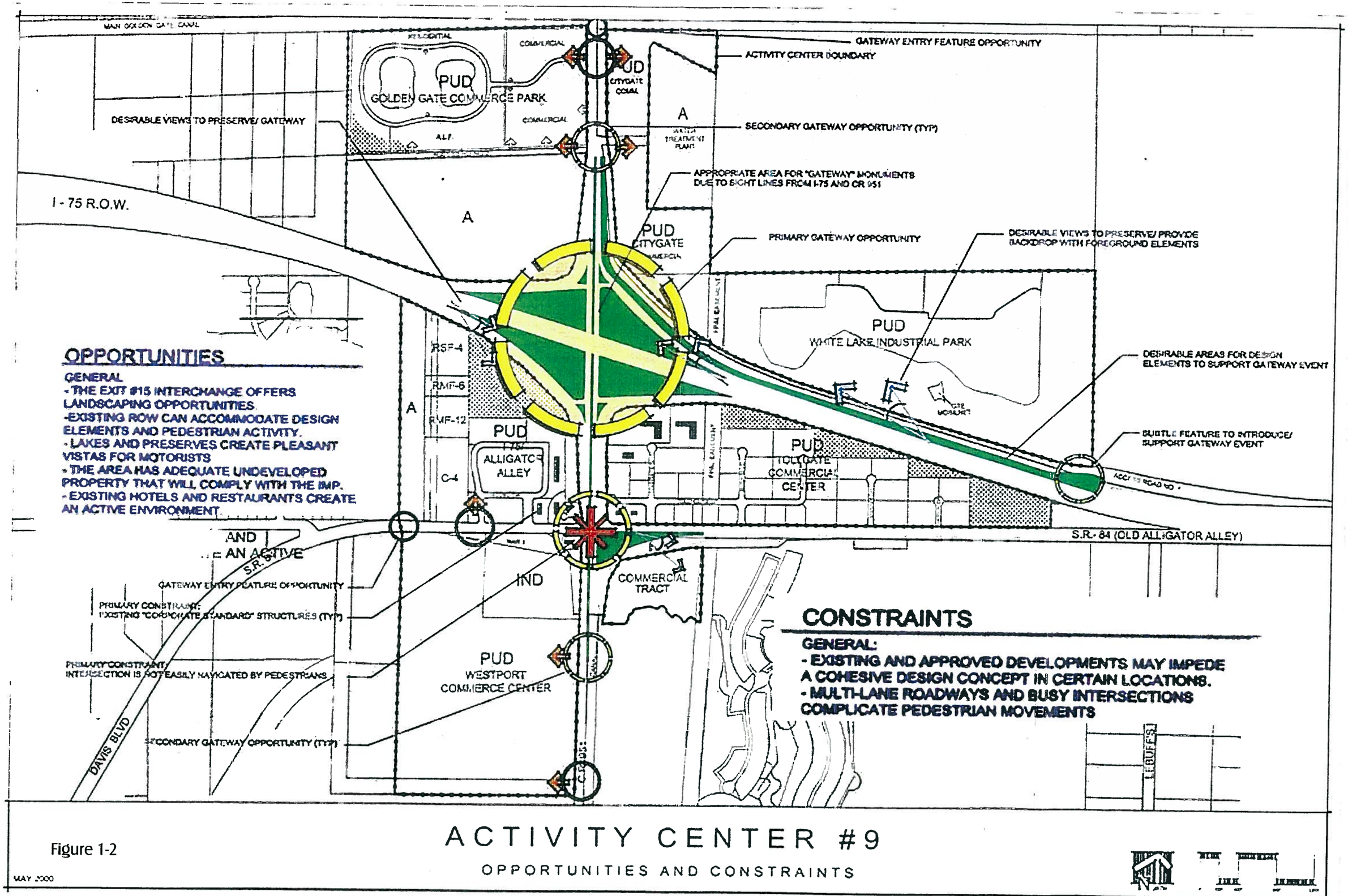


Figure 1-2

ACTIVITY CENTER #9

OPPORTUNITIES AND CONSTRAINTS

MAY 2000

WilsonMiller

Section 2—Vision Statement

DEVELOPING THE VISION

On July 11, 2000 a visioning meeting was conducted for the individuals who own property within the boundaries of Activity Center #9. During that meeting, the participating property owners and/or their representatives came to a consensus on a Vision Statement. This Vision Statement sets forth the goals of the implementation process, land use, the transportation system, and design elements. The BCC endorsed the Vision Statement at its August 1, 2000 meeting.

Vision Statement

Activity Center #9 will be a "Gateway" into Collier County. It will be a destination for residents, and the traveler's choice place to stop along I-75 and Collier Boulevard. Both residents and travelers will be able to appreciate the essential quality of Collier County in this 633-acre Activity Center.

Implementation

All rezones within Activity Center #9 shall be consistent with this Vision Statement. An IMP shall be developed to further define the intent of this Vision Statement, and shall be adopted by the BCC by resolution. Subsequent to the adoption of the IMP, an Activity Center #9 zoning overlay district shall be adopted in the Land Development Code.

Land Use

Activity Center #9 shall be developed with a mix of uses that will serve residents and travelers. The mix of land uses shall be designed to complement the intensity of the intersection while providing the appropriate transitions to the nearby residential communities. Land uses shall be located in a manner that will enhance the overall appearance and function of the activity center.

Land uses may include a mixture of office/business centers, light industrial employment centers, retail and service commercial, hotel/motel, community facilities, and residential development. A maximum of 55 percent of the total acreage may be devoted to retail commercial land uses.

Transportation System/Access

Primary access shall be provided by access roads generally controlled by traffic signals at arterial intersections. Direct access from development sites to the arterial road network shall be restricted to minor secondary connections.

Each quadrant of the activity center shall provide for internal interconnections between adjacent land uses. This will facilitate convenient and safe internal vehicular and pedestrian movements without affecting the external roadway network. In addition, Activity Center #9 will support future transit stops.

The Design Elements

Collier County has many exemplary characteristics—it is known for its beaches, golf courses, and the Everglades. Residents enjoy the opportunity to live, work, and play in beautiful rural areas and vibrant urban settings. Activity Center #9 is located on the urban edge of Collier County; therefore, emphasis will be placed on complementary design themes that reflect the influences such as the Everglades, rural areas, and Old Florida. Properties within Activity Center #9 shall be developed or redeveloped in accordance with one or more of the design themes defined in the IMP. The design themes shall be incorporated into the landscape, architecture, signage, gateway features, and roadway lighting design.

Figure 2-1 illustrates how all of these themes of the vision statement may be incorporated into Activity Center #9's future design.

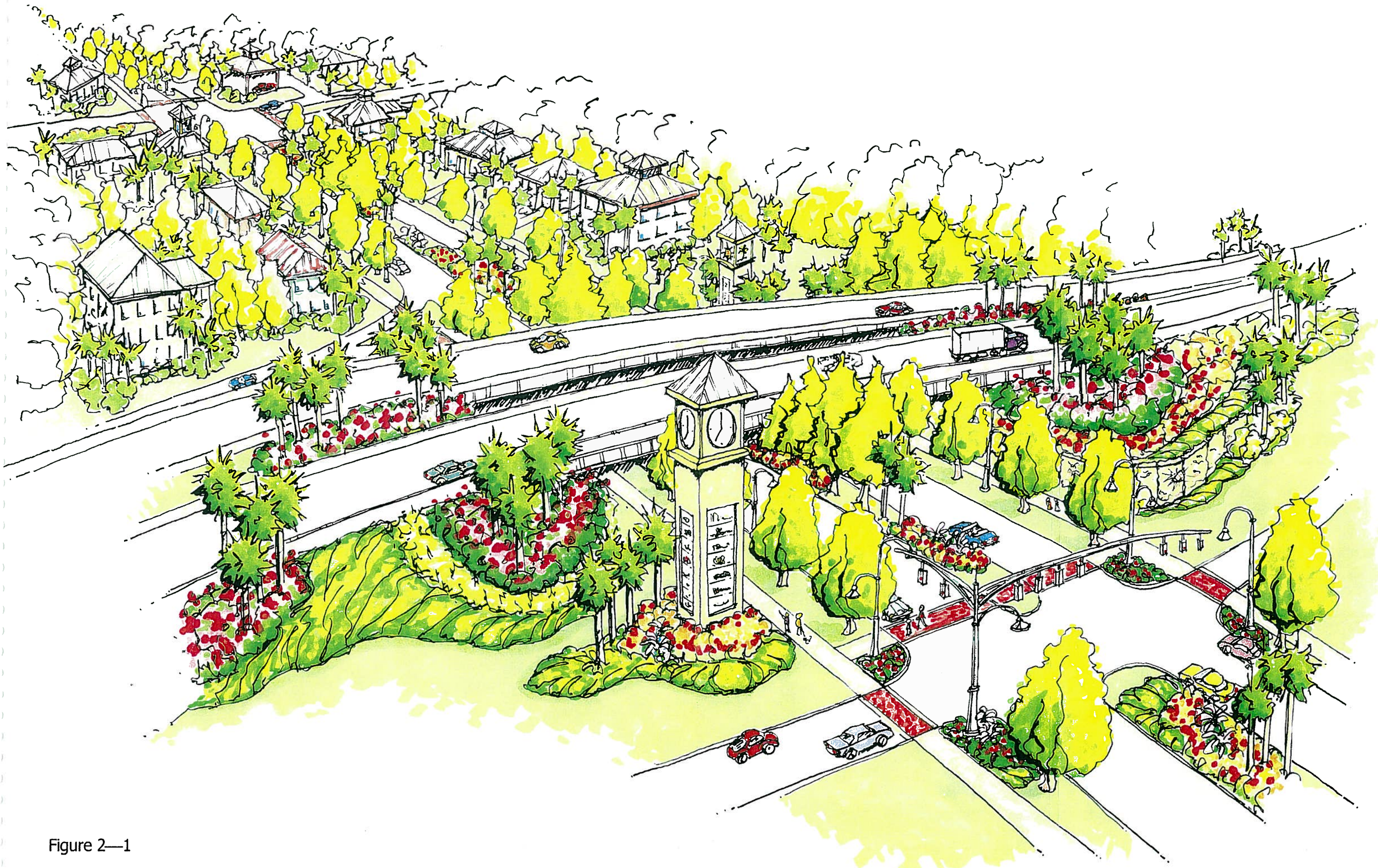


Figure 2—1

WilsonMiller

DESIGN DEVELOPMENT

The design of Activity Center #9 is defined using character themes that shall be represented through these elements:

- Architecture and signage
- Landscape buffers
- Boundary gateways
- Arterial roadway elements

Architecture and Signage

As stated in the Vision Statement, three complementary character themes shall be used in the architecture and signage elements throughout Activity Center #9. The three character themes include the following:

- Everglades
- Rural
- Old Florida

The Everglades Character

In the Everglades, architectural structures typically feature function first—aesthetics are secondary. Designs in the Everglades reflect a pioneering spirit conveyed through neutral colors with minimum detailing of building facades. Simple roof lines, deep overhangs, porches (where feasible), and clerestory windows are some of the major architectural elements that shall define the Everglades Character theme. Figure 3-1 illustrates elements represented in the Everglades Character.

Architectural structures shall exhibit colors that support the Everglades theme. As shown in Figure 3-2, muted tones found in the Everglades accented by light values of the same color are desirable.

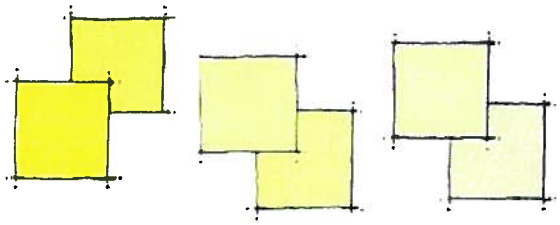


Figure 3-2: Everglades Color

Figure 3-1: Everglades Character

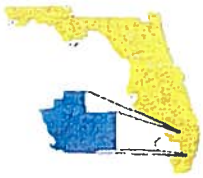
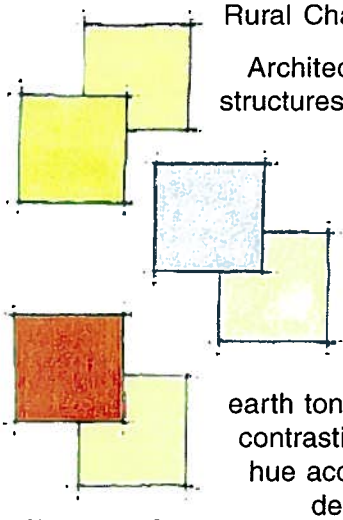


Figure 3-3: Rural Character

The Rural Character

Architecture in rural Collier County comprises minimum adornments, symmetrical facades, and a combination of roof types with a fair degree of articulation. Wood detailing, cupolas, and dormers are some of the major architectural elements that shall define the Rural Character theme. Figure 3-3 illustrates elements represented in the Rural Character.



Architectural structures shall exhibit colors that support the Rural Florida theme. As shown in Figure 3-4, soft, natural earth tones with contrasting deep hue accents are desirable.

Figure 3-4: Rural Colors

Old Florida Character

Old Florida architecture is unpretentious and inviting. It is beautifully adapted to its climate and quietly enhanced. Old Florida is a synthesis of many vernacular traditions ranging from the Victorian to those of Cracker and antebellum South. Peaked tin roofs, deep roof overhangs, generous porches, and ample windows are some of the traditional vernacular features of the Old Florida theme. Figure 3-5 illustrates elements represented in the Old Florida Character.

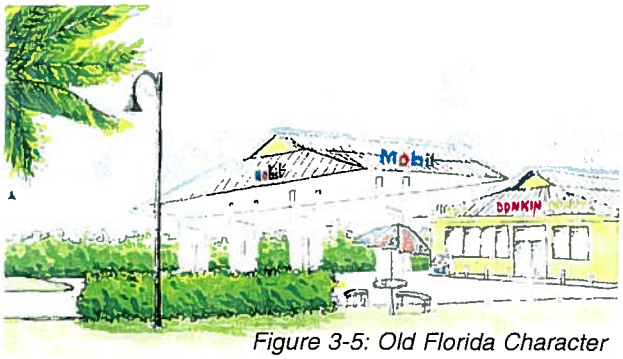


Figure 3-5: Old Florida Character

Architectural structures shall exhibit colors to support the Old Florida theme. As shown in Figure 3-6, light or white trim colors coupled with soft, pastel tones are desirable.

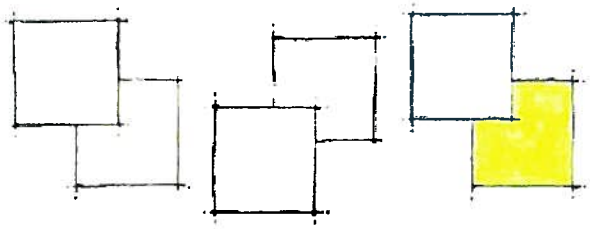


Figure 3-6: Old Florida Colors

Landscape Buffers

Two landscape buffer requirements shall apply to Activity Center #9:

- Buffers adjacent to major arterial roadways
- Buffers not adjacent to arterial roadways

Adjacent Buffers

Landscape buffers adjacent to arterial roadways shall include formal plantings to create a feeling of familiarity and continuity for the visitor in Activity Center #9. Primary landscape elements shall be chosen to reduce the scale of the adjacent roadway and commercial structures and to provide pedestrian comfort. Secondary landscape elements shall include formal, orderly planting beds with highly defined edges. Subtropical trees and plants in layered arrangements will provide visitors with a well-planned garden experience.

Nonadjacent Buffers

Landscape buffers that are not adjacent to arterial roadways shall be consistent with the established character themes by using relaxed rhythms in planting areas. This will create a soft, natural effect that transitions from the formal pedestrian and vehicular paths. Native palms, grasses, and stands of hardwood trees with a natural progression of undergrowth shall comprise the major landscape elements within buffers.

The landscaping plant palette selected for Activity Center #9 includes, but is not limited to, the following:

Trees

- Southern Magnolia
- Live Oak
- Red Maple
- Slash Pine
- Dahoon Holly

- Bald Cypress
- White Geiger
- South Florida Slash Pine

Palms

- Cabbage Palm
- Paurotis Palm
- Washington Palm

Accents

- Cardboard Zamia

Shrubs

- Leather Fern
- Marlberry
- Myrsine
- Walters Viburnum
- Sweet Viburnum
- Indian Hawthorn
- Florida Privet
- Saw Palmetto
- Fakahatchee
- Shillings Holly

- Necklace Pod
- Thryallis
- Dwarf Fakahatchee
- Sandankwa Viburnum

Aquatic Plants

- Leather Fern
- Yellow Canna

Vines

- Bougainvillea
- Confederate Jasmine

Annuals

- Egyptian Star Flower

Ground Covers

- Pink Muhly Grass
- Swordfern
- Sand Cordgrass

Boundary Gateway Features

Boundary gateway features shall define the entry/exit points of Activity Center #9. They shall be located within the right-of-way at the north and south boundaries on Collier Boulevard and at the west boundary on Davis Boulevard.

A major gateway feature at the intersection of Collier Boulevard and I-75 shall introduce Activity Center #9 to motorists on I-75 by providing the following:

- Directional signs/monumentation that are architectural in nature
- Intensified plantings that introduce color, massing, and layering
- Areas for display of local sculpture/ art elements that are intended for public display and enjoyment

Each gateway feature shall be designed to complement the character themes, which will help define and implement Activity Center #9's Vision Statement. Figure 3-7 presents a conceptual design for a boundary gateway.

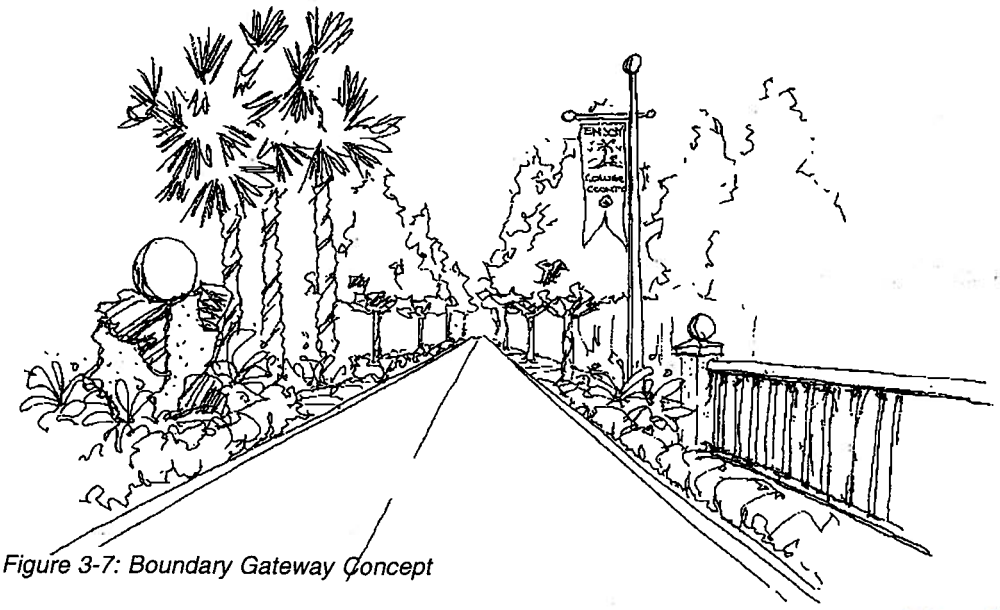


Figure 3-7: Boundary Gateway Concept

Arterial Roadway

Landscaping

As illustrated in Figure 3-8 on the following page, arterial roadways shall include the following:

- Sidewalks along all arterials to promote pedestrian activity and to interconnect adjacent commercial buildings
- Street trees for shade, appropriate scale, and to separate pedestrians from motorists
- Intersections that have pigmented crosswalks and colorful plantings to aid in motorist and pedestrian recognition
- Median plantings for contrast with formal street trees through clustering and layering
- Median plantings should have view corridors to commercial buildings; appropriate view triangles shall be maintained at intersections

Lighting and Directional Signage

Special lighting fixtures shall be used along Activity Center #9's arterial roadways. The selected light fixture style shall complement all of the selected character themes.

All directional signage within Activity Center #9 shall be unified and designed in a manner that is complementary to the selected character themes.

Figure 3-8: Conceptual Roadway Treatment

WilsonMiller

Section 4—Land Use & Transportation

Land Use

The BCC adopted a study parameter to develop a land use plan that identifies the type and amount of land uses. As demonstrated in Figure 4-1, the IMP accomplishes this by developing an IMP Land Use Map that recognizes the existing zoning. It is guided by the study parameters and objectives. The IMP Land Use Map is not intended to be used as a zoning map, but rather as a general indicator of desirable future land use relationships.

The Activity Center #9 GMP amendment defined the following:

"The uses allowed in Interchange Activity Center #9 shall include the full array of commercial uses; residential and non-residential uses; institutional uses; Business Park with Activity Center #9; hotel/motel uses at a density consistent with the Land Development Code; industrial uses in the northeast, southwest and southeast quadrants. The entire Interchange Activity Center is eligible for up to 100% of the entire acreage to be developed for and of the uses referenced, except the maximum amount of commercial acreage shall not exceed 55% of the total acreage (632.5 ac.)."

The location and configuration of the following four proposed land use designations with Activity Center #9 are delineated on the IMP Land Use Map:

- Commercial—60 acres
- Industrial—139 acres
- Mixed-use Commercial—223 acres
- Mixed-use Industrial—218 acres

The following describes each land use designation including purpose, permitted uses, and intensity/density.

Commercial

This designation is intended to accommodate the full array of commercial uses as allowed in each commercial zoning district in the LDC, institutional uses, office, and hotel/motel uses at a density consistent with the LDC.

Industrial

This designation is reserved primarily for industrial type uses. Intensities of use shall be consistent with the GMP Industrial District.

Mixed-use Commercial

This designation is intended to accommodate a mix of commercial, office, and residential uses within the activity center. Land areas appropriate for this designation include retail, office, service, and residential. Residential density is allowed consistent with the GMP Density Rating System. Hotel/motel uses are allowed at a density consistent with the LDC.

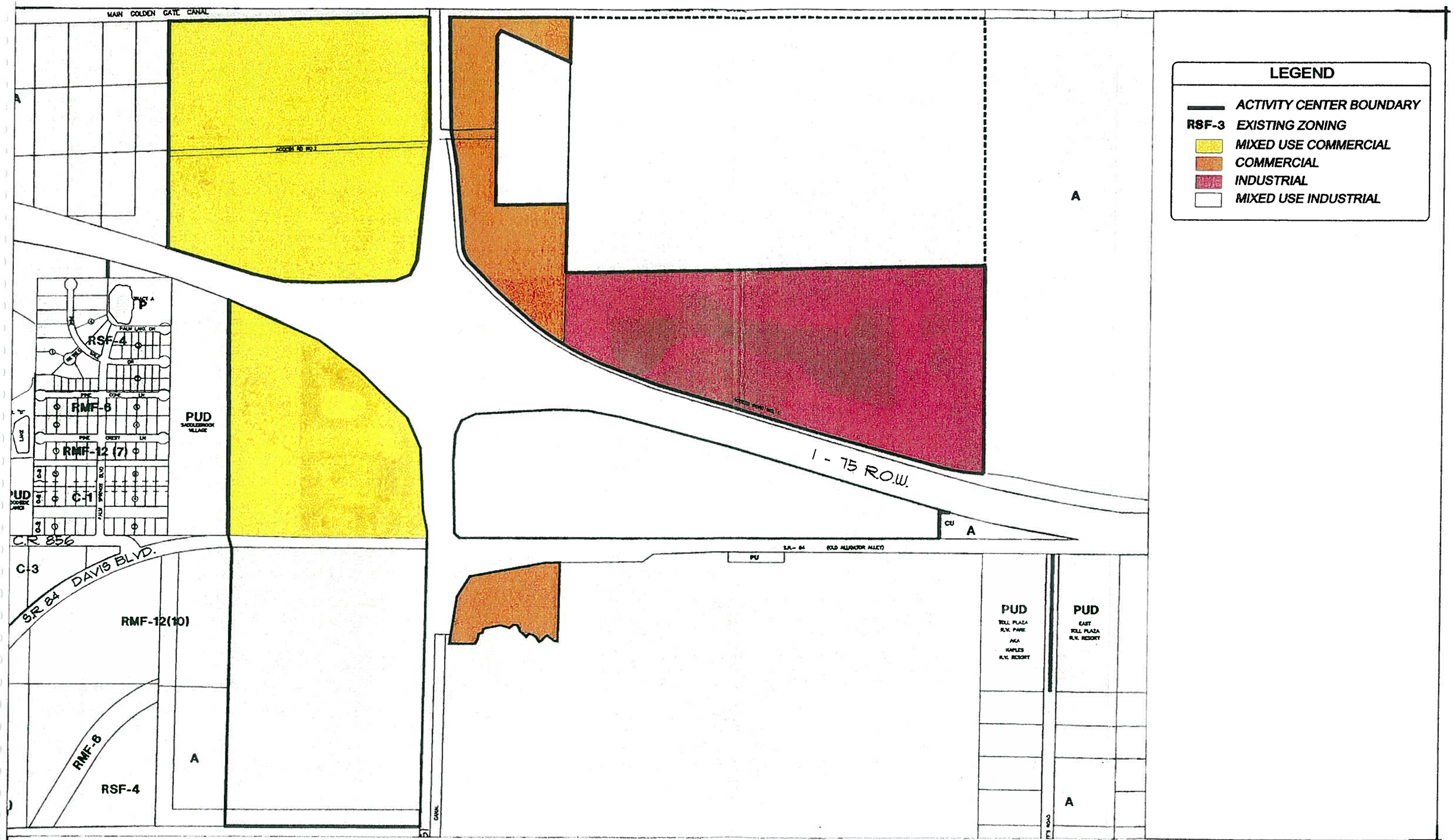
Mixed-use Industrial

This designation is intended to identify the land areas appropriate for light industrial, retail, office, service, and residential. Intensities of industrial uses shall be consistent with the GMP Urban-Industrial District. The full array of commercial uses are allowed consistent with the commercial zoning districts in the LDC. Hotel/motel uses are allowed at a density consistent with the LDC. Residential density is allowed consistent with the GMP—Density Rating System.

TRANSPORTATION EVALUATION

Overview

The transportation evaluation process included an evaluation of the travel demand model simulation and other non-modeling transportation assessment results. The process identified and



ACTIVITY CENTER #9

IMP LAND USE MAP

JUNE, 2000 Figure 4_1

quantified problems/problem areas found in the evaluation. The transportation evaluation was used to assess a variety of improvements that may be recommended for consideration as part of the IMP. Certain previously identified future improvements to the transportation network were assumed, including ramp improvements to the I-75 interchange and the construction of a grade separation at the SR-84 and CR-951 intersection. Appropriate performance measures and evaluation criteria (eg., LOS, delay, volume to capacity ratio, etc.) were used to evaluate the future conditions.

The transportation evaluation process also identified and evaluated potential transportation/land use strategies and infrastructure improvements that address system problems/problem areas. It considered strategies such as non-capital operational improvements, transportation demand management (TDM), and other land use/site-related techniques that may be applicable to the activity center concept.

A variety of potential transportation and land use strategies and infrastructure improvements were tested. The results were evaluated against the established criteria. Performance measures and evaluation criteria results for potential strategies and improvements were compared against those of the base condition. Transportation infrastructure improvements that were considered included (but were not be limited to) access management improvements, intersection modifications, additional or modified freeway ramps, additional through-lanes, grade-separated intersection improvements, new road segments, etc. Close cooperation with state and local implementing transportation agencies ensured coordination in developing and analyzing potential strategies and improvements.

Assumptions

For the purposes of the future conditions analysis (FCA), a single land use data set for a buildout scenario was used to generate system traffic in and around Activity Center #9. The land use data set developed by the County/ Metropolitan Planning Organization (MPO) for use in the "density reduction" buildout assessments was used. Although the study horizon year was undetermined, the analysis year data set was assumed to represent the area's buildout.

The traffic analysis zones (TAZs) within the study area were reviewed and evaluated for consistency with the proposed development potential of lands included within Activity Center #9. A consensus on the appropriate land use variables (eg., number of dwelling units, number of employees, etc.) to be included in the study data set was achieved before any transportation alternatives assessment began.

With regard to future land use improvements, several projects within the area (but not within the activity center boundary) that may impact the transportation system within the activity center were identified and considered in the analysis, either directly as part of the modeling effort or indirectly through observations.

A number of initial assumptions were made based on approved plans and programs: the capacity improvements recognized in Collier County's Transportation Element of the GMP; the MPO's 2020 Long-Range Transportation Plan, including the 2020 Needs Assessment; and the recently completed SR-84 Corridor Study, which made specific recommendations about future improvements at the intersection of SR-84 and CR-951.

Section 4—Land Use & Transportation

Base (Current) Operating Conditions

The major transportation system components within Activity Center #9 include I-75, CR-951, and SR-84. Currently, the area is not served by public transportation, except for the occasional taxi cab and demand-response vehicles that may serve employers in the area.

Tables 4-1a and 4-1b present the 1998 operational conditions of the major roadways and signalized intersections.

The northern quadrants, which are substantially vacant of immediately adjacent land uses, are separated by CR-951, a four-lane divided highway. This area is served by existing and future east/west "access" roads located immediately outside the "limited access" (LA) boundaries of I-75 (immediately north of the ramps). Additionally, a planned access point approximately 900 feet north of the existing access roads will provide signalized access control for future major developments east and west of CR-951. To allow all developments within the northwest quadrant to access the future northern signalized access point, an interconnection is planned on the west side of CR-951. A similar, more circuitous connection is defined in planning documents approved for developments on the east side of CR-951.

Facility	Number of Lanes	Adopted LOS	Maximum Service Volume @ Adopted LOS	1998 AADT	1998 LOS Condition (V/Std Ratio)
CR-951 (north of I-75)	4	D	46,300	33,075	B (0.71)
CR-951 (south of I-75)	4	D	46,300	33,075	B (0.71)
CR-951 (south of SR-84)	4	D	44,300	23,739	C (0.54)
SR-84 (west of CR-951)	2	D	10,800	15,790	F (1.46)

Table 4-1a

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
CR-951 @ I-75 N. Ramps	D	C
CR-951 @ I-75 S. Ramps	C	F
CR-951 @ SR-84	E	F

Table 4-1b

Existing Geometric Conditions Problems/ Problem Areas

The interchange activity center will be populated by multiuse developments in all four quadrants. The problems/problem areas associated with transportation impacts, and most acutely, those issues dealing with access on the north side of the interstate corridor, are profoundly different from those issues on the south side.

Looking southeast across Activity Center #9.

The major transportation links that serve Activity Center #9 include I-75 (via exit #15), Collier Boulevard (CR-951), and Davis Boulevard (SR-84). The existing roadway lane geometry in Activity Center #9 is depicted in Figure 4-2 on the following page.

Current (base condition) problems are concentrated at the existing unsignalized access point. These problems are primarily associated with high volumes of truck traffic using the access road to reach the Collier County Water Treatment Plant and the Collier County Landfill. White Lake, a major industrial development, has

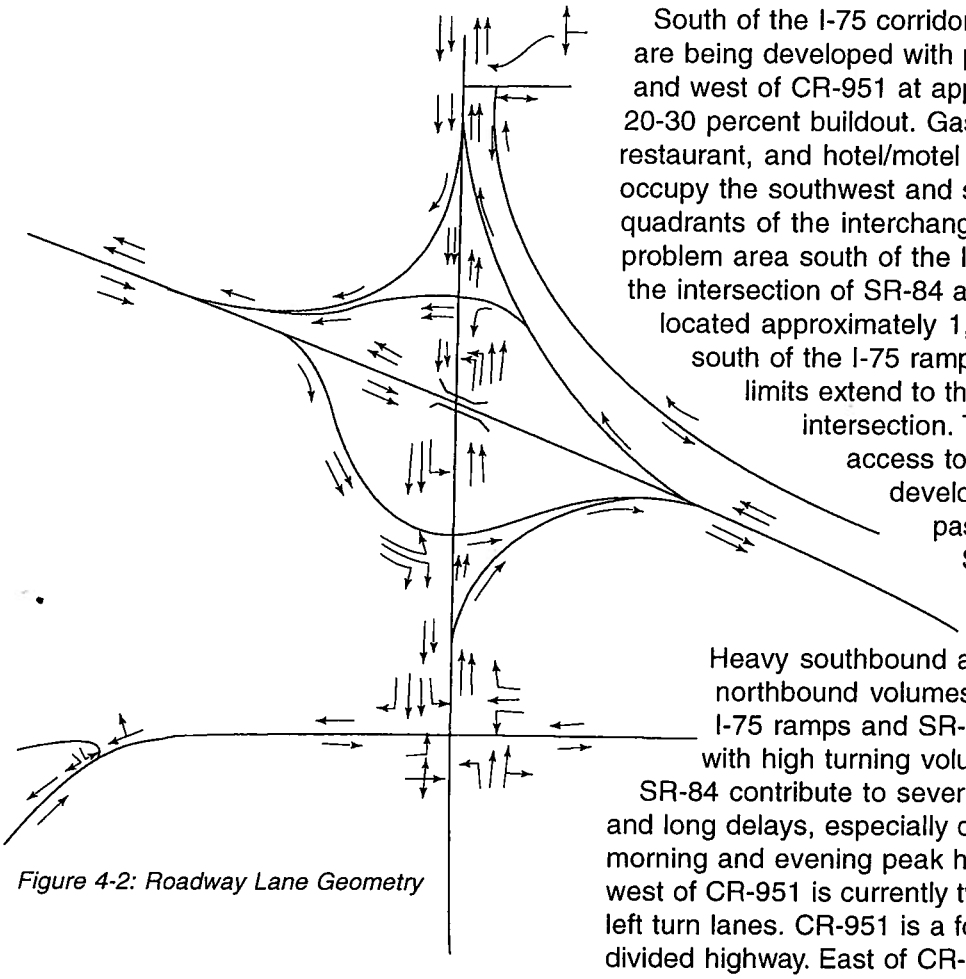


Figure 4-2: Roadway Lane Geometry

South of the I-75 corridor, land uses are being developed with projects east and west of CR-951 at approximately 20-30 percent buildout. Gas station, restaurant, and hotel/motel facilities occupy the southwest and southeast quadrants of the interchange. The problem area south of the I-75 corridor is the intersection of SR-84 and CR-951, located approximately 1,400 feet south of the I-75 ramps. The LA limits extend to the SR-84 intersection. Therefore, all access to commercial development must pass through the SR-84/CR-951 intersection. Heavy southbound and northbound volumes between the I-75 ramps and SR-84 coupled with high turning volumes to/from SR-84 contribute to severe congestion and long delays, especially during the morning and evening peak hours. SR-84 west of CR-951 is currently two lanes with left turn lanes. CR-951 is a four-lane divided highway. East of CR-951, "Old SR-84" is a two-lane roadway serving land development. It terminates east of the activity center boundary. With the exception of the delay at CR-951, no traffic problems were identified for "Old SR-84" east of CR-951.

begun to attract land uses that will increase the intersection's traffic. A secondary problem is the access road's lack of adequate throat distance at the intersection with CR-951.

Problems associated with the northern quadrants are summarized in Table 4-2.

It should be noted that a recently approved I-75 interchange at Golden Gate Parkway scheduled for construction

North of I-75 Corridor	Problem(s)
Access Road #1 & #2	May be too close to I-75 ramps to be signalized
	Inadequate throat distance
	Heavy truck movements to/from Access Road #1
	Planned interconnection to future northern access (on east side of CR-951) is not direct and dependent upon others
	No currently available interconnection to future northern access (on east side of CR-951)

Table 4-2

in 2004 may reduce the traffic bound for I-75 at this intersection. However, congestion will continue due to access to the land development activities competing with the projected increases in through-volumes that CR-951 will carry.

Table 4-3 summarizes the problems associated with the southern quadrants.

South of I-75 Corridor	Problem(s)
SR-84/CR-951 intersection	Too close to I-75 ramps
	Inadequate distances from intersection to driveways on SR-84 (west of CR-951)
	Inadequate R/W for additional turn lanes (eastbound approach)
	Excessive delays due to heavy east to north, south to west and north to west turning movements
	Heavy peak hour traffic volumes
SR-84	Over capacity in its current 2-lane configuration (LOS "F")

Table 4-3

Potential Infrastructure Improvements

A number of key system improvements have been identified previously and are either approved or being evaluated. As stated earlier, the future (2004) interchange at Golden Gate Parkway should provide an alternative for I-75-bound traffic, thereby reducing some of the traffic that traverses the SR-84/CR-951 intersection to access the interstate.

The SR-84 Corridor Study recently completed for the FDOT recommended improving SR-84 to a multilane configuration along the existing alignment instead of realigning the corridor eastward to intersect with CR-951 one mile south of the current intersection. During the course of the study, it was determined that regardless of the alignment, the existing SR-84/CR-951 intersection would have to be grade separated due to the significant influence (and vicinity) of the I-75 interchange coupled with the activity center development. Widening along the existing alignment was found to be more cost-effective and have fewer environmental impacts. A Preliminary Development and Environmental (PD&E) study is underway to determine the appropriate grade separation concept for the intersection. As a result of what likely is to be a staging of improvements (first a multilaning of SR-84 followed by a grade separation improvement), special access management considerations will be needed.

Although currently not planned to be extended west, future Access Road #2, north of I-75, was tested and evaluated as a connection between CR-951 and Santa Barbara Blvd.

Table 4-4 summarizes the major roadway improvements that the Collier County MPO identified as necessary by 2024 within the activity center boundary.

Table 4-5 identifies additional relatively low-cost infrastructure enhancements and operational improvements as potential of transportation system management (TSM) strategies.

Potential Land Use Strategies

Most of the lands within Activity Center #9 are zoned for a nonagricultural land use. The remaining A-Agriculture parcels likely will be rezoned in the future.

Section 4—Land Use & Transportation

Facility	Planned Improvement	Benefits & Effects on Congestion
CR-951 (north of I-75)	Widen from 4 to 6-lanes	Improved traffic flow; reduced delay; improved LOS
CR-951 (south of I-75)	Widen from 4 to 8-lanes	Improved traffic flow; reduced delay; improved LOS
CR-951 (south of SR-84)	Widen from 4 to 6-lanes	Improved traffic flow; reduced delay; improved LOS
SR-84 @ CR-951	Grade Separation & signal modifications	Reduced congestion during peak periods; Improved traffic flow; reduced delay; improved LOS
SR-84 (west of CR-951)	Widen from 2 to 4-lanes	Improved traffic flow; reduced delay; improved LOS

Table 4-4

Transportation System Management (TSM) Strategy	Examples, Techniques, etc.	Benefits & Effects on Congestion
Traffic Signalization Improvements	Enhanced computer controlled traffic signal system; additional coordination	Improved traffic flow; reduced delay; improved LOS
Minor Intersection Improvements	Additional turn lanes	Improved traffic flow; reduced delay; improved LOS
Multimodal Traveler Information Systems	Variable Message Boards; in-vehicle information systems; advanced warning systems	Reduces delay; allow travel plan adjustments
Incident Management & Emergency Response	Quick response traffic control; motorist aid services; accident investigation areas; agency awareness; traffic signal preemption	Reduced congestion due to incidents; improves response time to accidents; improves system recovery time
Enhanced Traffic Maintenance During Construction	Non-Peak hours of Construction; minimization of lane closures; advanced traveler information	Reduces delay; allow travel plan adjustments; improves work-zone safety
Commute Trip Management	Park-n-Ride Facilities; transit stations	Reduced SOV usage; reduced congestion during peak periods

Table 4-5

Collier County will have an opportunity to ensure that the development that follows the adoption of the IMP is planned and coordinated to be consistent with the Plan and subsequent LDC amendments. A variety of land use strategies that may be considered are discussed below.

Due to the area's currently undeveloped land, significant opportunities exist to manage the appropriate development of much of the area north of the I-75 corridor. Although generally identified for commercial or industrial uses such as retail, office (corporate and general), and warehousing and distribution centers, lands within the activity center are suitable for a mix of uses, including multifamily residential and institutional and support services, such as adult congregate living facilities, medical facilities, churches, and child care facilities. Mixed-use developments can significantly reduce the traffic impacts of land development within the activity center by providing varying peak periods of travel and by providing opportunities to minimize travel through maximizing "chained" or multipurpose trips. Residents in these developments are often able to shop for groceries, pick-up/drop-off dry cleaning, conduct personal banking, and pick up the kids—all without having to use the adjacent highway system.

Section 4—Land Use & Transportation

The value of varied peak hour travel demand of a mixed-use development should not be overlooked. Approximately 60-90 percent of the activity center's "congestion" is generally concentrated during the 2-3 peak hours during the morning/evening. In all but the most severely over-congested facilities, traffic during the remaining times of the day (the non-peak hours) is manageable. Historically (and currently), facilities are built to handle peak demands. Adopted LOS standards are based on the measure of congestion during the peak hour of the day.

In addition to the infrastructure improvements that are needed as congestion increases, "gentler" approaches that involve travel behavior or TDM can effectively reduce peak hour demand and congestion.

The TDM strategies in Table 4-6 should be considered where appropriate.

Future Conditions

The Future Conditions Analysis (FCA) examined the activity center in two parts: the northern half and southern half. This was done because 1) the northern quadrants are both substantially undeveloped and/or will be the subject of further land use decision-making processes, and 2) the FDOT is analyzing the southern quadrant's network as part of the SR-84/CR-951 PD&E.

For the northwest quadrant, land owners provided potential buildout scenarios for analysis. Existing approved zoning was used for lands in the northeast quadrant.

Activity Center North

This portion of the analysis determined the future traffic impacts north of I-75 on CR-951 with the addition of traffic generated by the proposed/approved development in the immediate vicinity. It also analyzed one signalized access versus two signalized access drives for the proposed development.

Future year 2024 traffic volumes were derived using the MPO's Collier County 2024 travel demand model. Model modifications were made to the highway

Transportation Demand Management (TDM) Strategy	Examples, Techniques, etc.	Benefits & Effects on Congestion
Mixed-Use Planned Developments	Commercial Retail/Office and Residential	Provides opportunities for internal capture and "trip chaining"
Mixed Use Commercial & Developments	Hotel, Service Warehouse/Distribution	Provides for different peak hour/peak direction travel demands
High Density Multi-family Residential Development	Market rate rental housing; Affordable housing; Workforce housing	Concentrations of housing units that are available to the neighboring workforce; close proximity to retail/office services w/in the Activity Center
Public Facilities, Civic, Cultural and Institutional Uses	Passive and active parks; greenways; Churches, Civic organizations	Reduced traffic impact; services provided to neighboring residents; increased open space
Commute Trip Management	"Flex-time"; staggered start/stop times; alternative work schedules	Reduces peak hour demand; spreads out demand over greater length of time
Increase Vehicle Occupancy	Transit, ridesharing, and van-pooling incentives	Reduces peak hour demand, reduces parking requirements
Increase Non-Motorized Travel	Improved bicycle & pedestrian facilities	Reduces vehicular demand between uses; reduces congestion
Freight Delivery Coordination	Activity Center Freight Management System; "Delivery Only" Hours; Delivery Access Routes	Coordinate & consolidate deliveries to minimize the number of freight vehicles needed, particularly during peak periods
Communication Substitutions	Telecommuting, teleconferencing, teleshopping	Reduces peak and non-peak travel demand

Table 4-6

network and socioeconomic data (ZDATA) to better reflect the proposed development and the network's physical constraints. Figure 4-3 shows the FSUTMS highway network changes made to the model.

The changes included removing the proposed SR-84 east/west extension (eliminated by the MPO as a result of the SR-84 Corridor Study), removing the centroid connection to/from zone 310 to Golden Gate Parkway, and relocating the centroid connection to more accurately represent the travel paths to/from zone 289.

Land use ZDATA revisions included refining forecast development levels for the zones surrounding the interchange. The employment level in zone 310 decreased from 1458 to 1030 while total dwelling units increased from 708 to 1319. Zone 311 was revised to include a 250-room hotel. Table 4-7 on the next page summarizes generation data.

Proposed traffic from development in the northeast and northwest quadrants was derived using the Institute of Traffic Engineer's (ITE's) current Trip Generation Manual (6th ed.) for the five developments on CR-951 north of I-75:

- White Lake
- City Gate
- Golden Gate Health Park (aka Commerce Park)
- The Homan Parcel
- Magnolia Pond

Development potential was based on approved or planned project expectations. Traffic was assigned to the roadway network using the MPO model's traffic distribution for these zones. Model volume and distribution plots are included in the Appendix A. Background traffic was derived by applying a 9 percent k factor and 60 percent d factor to the MPO model's background peak season weekday traffic (PSWT).

ACTIVITY CENTER #9 - REVISED 2024 FSUTMS MODEL NETWORK OVERLAY

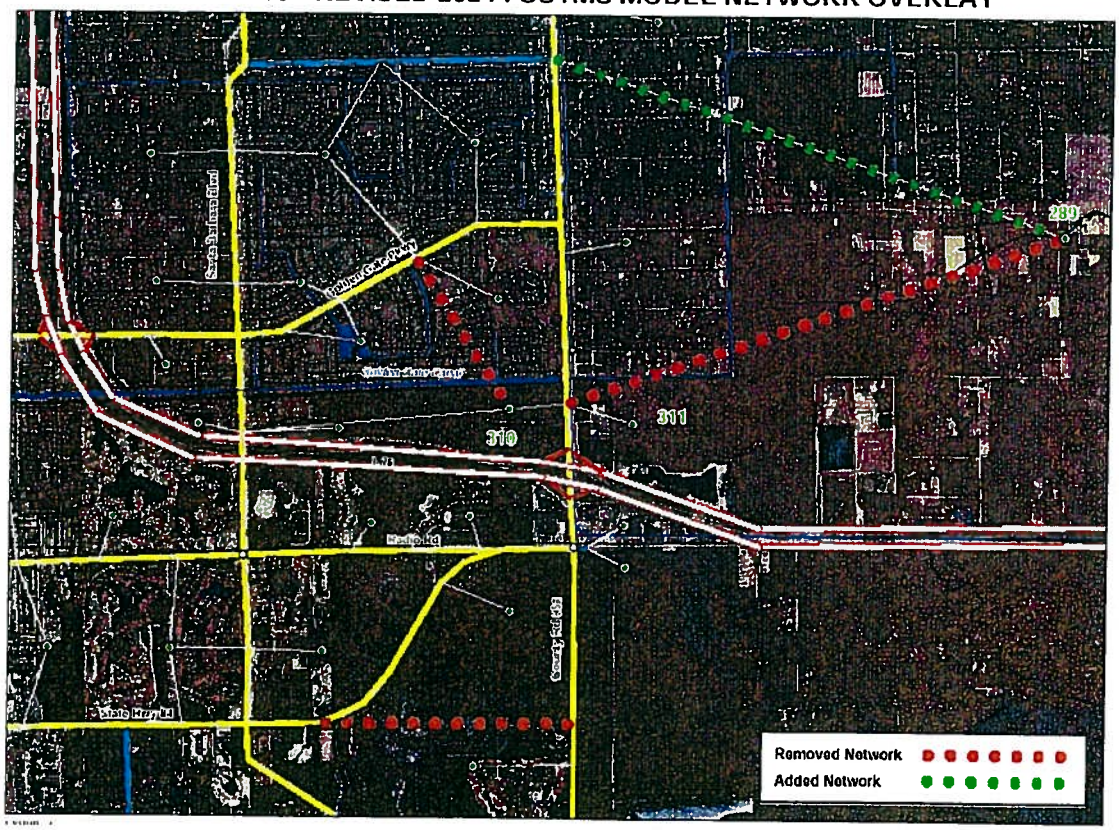


Figure 4-3

Section 4—Land Use & Transportation

ACTIVITY CENTER #9
PM Peak Hour Trip Generation

CITYGATE			Gross P.M. Peak Hour		Internal Capture		Passer-by Capture		Net P.M. Peak Hour	
Land Use	ITE Land Use Code	Size	In	Out	In	Out	In	Out	In	Out
Office	**710**	916,000 sf	188	918	111	111	0	0	77	807
Retail	**820**	116,000 sf	332	361	69	69	124	134	139	158
Light Industrial	**110**	1,860,000 sf	300	2201	250	250	0	0	50	1951
Restaurant	**831**	34,000 sf	170	85	26	26	0	0	145	60
Gas Station	**845**	3,000 sf	145	145	29	29	101	101	15	15
Totals			***1135***	***3710***	***485***	***485***	***225***	***235***	***426***	***2991***

GOLDEN GATE COMMERCE PARK			Gross P.M. Peak Hour		Internal Capture		Passer-by Capture		Net P.M. Peak Hour	
Land Use	ITE Land Use Code	Size	In	Out	In	Out	In	Out	In	Out
Office	**710**	30,000 sf	19	94	2	9	0	0	17	85
Retail	**820**	220,000 sf	508	549	31	47	157	170	320	332
MFDU	**220**	588 du	226	111	45	22	0	0	181	89
Totals			***753***	***754***	***78***	***78***	***157***	***170***	***518***	***506***

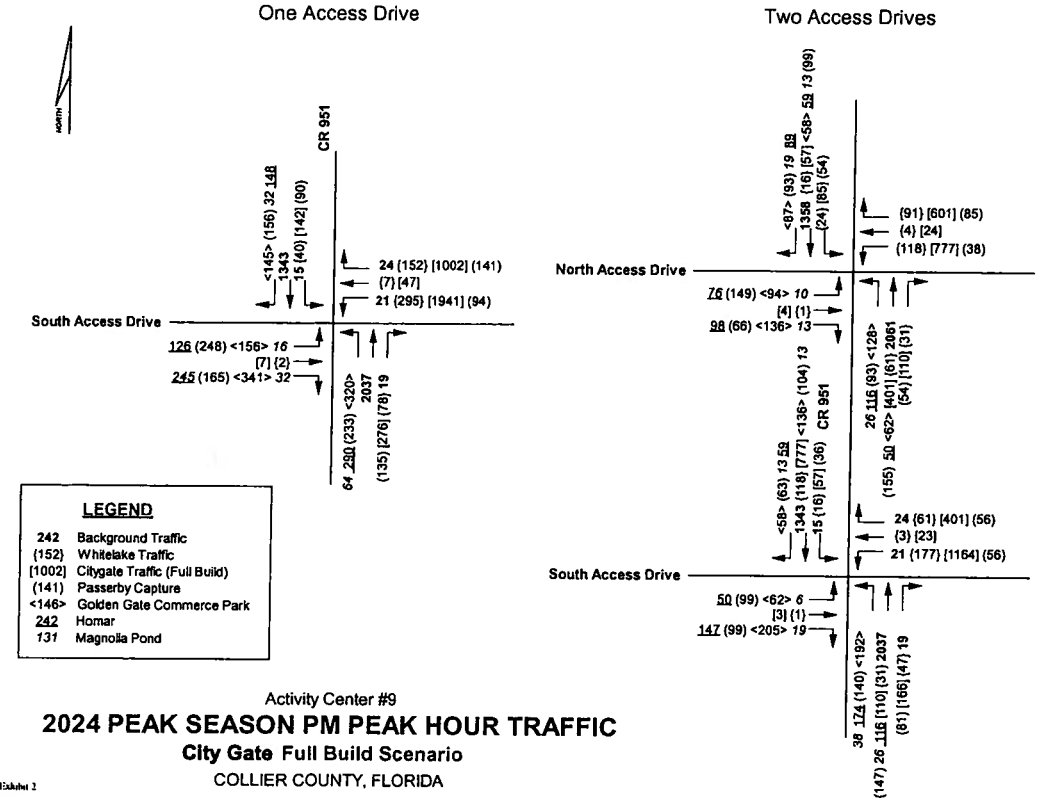
MAGNOLIA POND			Gross P.M. Peak Hour		Internal Capture		Passer-by Capture		Net P.M. Peak Hour	
Land Use	ITE Land Use Code	Size	In	Out	In	Out	In	Out	In	Out
MFDU	**220**	231 du	96	48	7	7	0	0	89	41
Totals			***96***	***48***	***7***	***7***	***0***	***0***	***89***	***41***

HOMAN TRACT			Gross P.M. Peak Hour		Internal Capture		Passer-by Capture		Net P.M. Peak Hour	
Land Use	ITE Land Use Code	Size	In	Out	In	Out	In	Out	In	Out
Retail	**820**	250,000 du	552	598	115	115	164	178	273	305
MFDU	**220**	500 du	194	95	29	29	0	0	165	66
Totals			***746***	***693***	***144***	***144***	***164***	***178***	***438***	***371***

WHITE LAKE			Gross P.M. Peak Hour		Internal Capture		Passer-by Capture		Net P.M. Peak Hour	
Land Use	ITE Land Use Code	Size	In	Out	In	Out	In	Out	In	Out
Industrial Park	**130**	65 ac	121	454	0	0	0	0	121	454
Totals			***121***	***454***	***0***	***0***	***0***	***0***	***121***	***454***

1. ITE's Trip Generation Manual, 6th Edition
2. Golden Gate Health Park internal capture is base on the following percentages: 10% office to retail; 20% residential to retail; other developelopment internalization rate assumed at 10% of gross trips.

Table 4-7



Activity Center #9

2024 PEAK SEASON PM PEAK HOUR TRAFFIC

City Gate Full Build Scenario

COLLIER COUNTY, FLORIDA

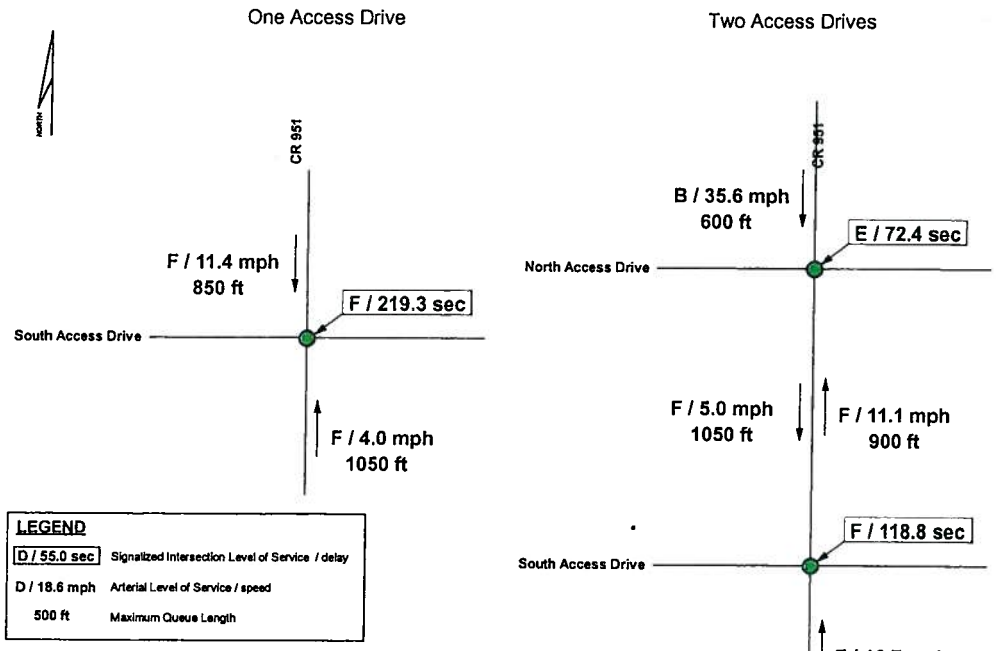
Figure 4-4 shows the expected 2024 PM peak hour peak season traffic for both one signal and two signalized access scenarios for full buildout of the proposed developments.

Capacity calculations were performed for the traffic volumes shown in Figure 4-4 using 1997 Highway Capacity Software (HCS 3.1). These calculations were performed for at-grade intersections with both one and two signalized access points along CR-951 for the proposed development. Signalized intersection and detailed arterial analyses were performed for the two scenarios and are included in Appendix B. Additionally maximum queue lengths were calculated using the red time equation for movements along CR-951.

As shown in Figure 4-5, full buildout of the proposed developments will result in unacceptable LOS in the year 2024 with either one or two signalized at-grade intersections. Due to the proximity of I-75 to the south, any type of grade separation does not seem feasible. Any loading to the north at Golden Gate Parkway seems improbable due to physical constraints (canals and neighborhoods). The only solution appears to be a reduction in proposed development.

Of the five developments shown in Figure 4-4's traffic volumes, City Gate is the largest traffic generator and is the single project most likely to not build out to its maximum potential. For testing purposes, City Gate traffic was reduced to obtain acceptable operation of CR-951 north of I-75. Figure 4-6 shows these reduced traffic volumes for City Gate for the one and two signal scenarios.

As shown in Figure 4-6, City Gate traffic would have to be reduced by 80 percent for one signalized access point to operate acceptably. For two signalized access



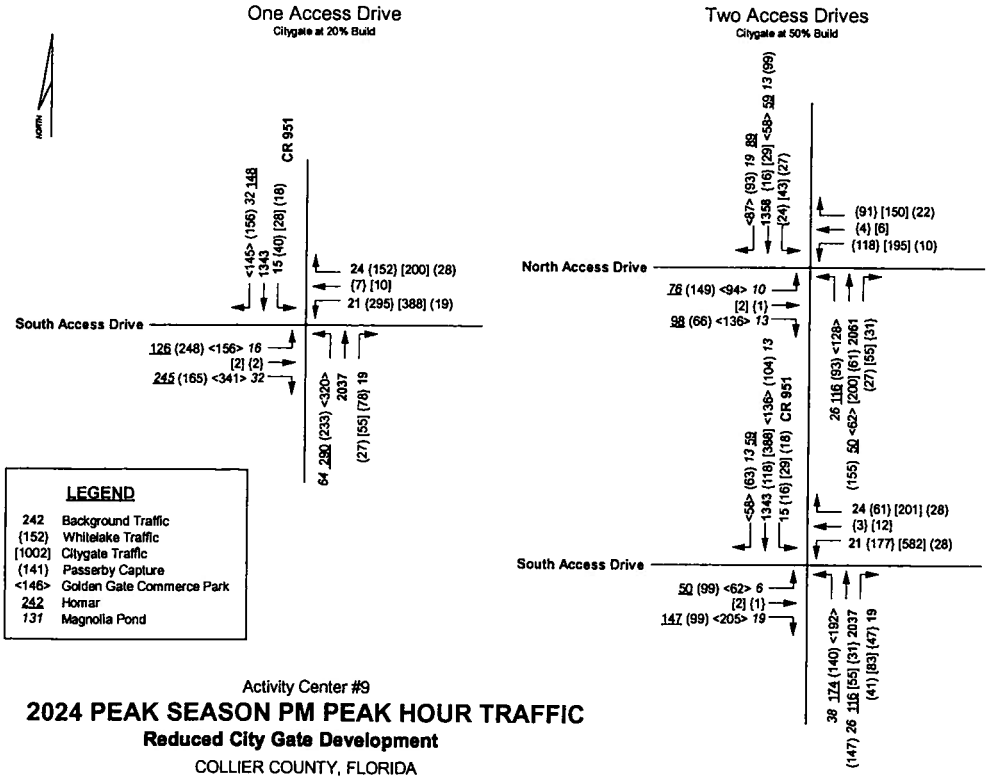
Activity Center #9

2024 PEAK SEASON PM PEAK HOUR LEVEL OF SERVICE

City Gate Full Build Scenario

COLLIER COUNTY, FLORIDA

Figure 4-5



Activity Center #9

2024 PEAK SEASON PM PEAK HOUR TRAFFIC

Reduced City Gate Development

COLLIER COUNTY, FLORIDA

Figure 4-6

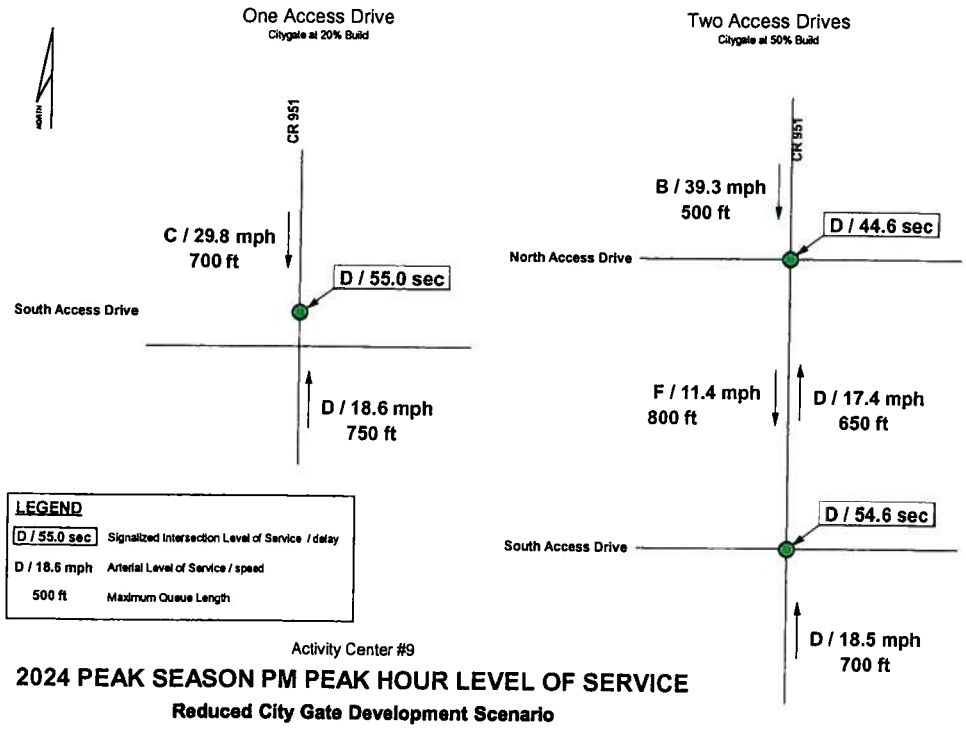
points to operate acceptably, City Gate would have to reduce its traffic by 50 percent.

As shown in Figure 4-7, all intersections and arterial links are expected to operate at LOS D or better with the reduced CityGate traffic, with the exception of the southbound arterial link between the signalized access drives. This is due primarily to the short distance (900 ft.) between the two. Maximum queues were checked using the red time equation and were found to be acceptable. However, if LOS D is required for this link, City Gate traffic would need to be further reduced to approximately 65 percent of its maximum buildout condition.

During the preparation of this report, additional research on the signalization of the Access Rd. #1 intersection at CR-951 was being conducted by Tindale-Oliver, Inc. Results of that research were not available at the time of this printing.

Alternative East-West Collector Roadway Analysis

As part of the assessment of future roadway conditions, the study examined the impacts of an interconnecting roadway (Access Road #2) extending between Santa Barbara Blvd. and CR-951. The extension was tested as a four-lane collector in 2024. The assignment of traffic by the MPO model produced volumes of 7,100 (PSDT) on the new collector with little or no change to volumes on CR-951 and the other surrounding roadways. This indicates a rebalancing of traffic where increases in certain trips as a result of a network change are offset by reductions of certain other trips (i.e., gains offset losses). In addition, the relatively low volume of traffic (7,100 PSDT) assigned to the new extension indicates that a small portion of the trips to and through the area find the extension of much value. An examination of the model's trip-making



Activity Center #9

2024 PEAK SEASON PM PEAK HOUR LEVEL OF SERVICE

Reduced City Gate Development Scenario

COLLIER COUNTY, FLORIDA

Figure 4-7

characteristics indicates that approximately 80 percent of the new road's traffic is generated in the immediate vicinity of the access road by TAZ 310 (the zone bisected by the new roadway) and the zone immediately to the east of CR-951 (TAZ 311). This indicates that the road is of primary benefit to those developments immediate adjacent to it, with little or no benefit derived by the surrounding roadway network.

Traffic volumes assigned to the major roads within the study simulated by the 2024 "with" and "without" models are presented in Table 4-8.

additional changes were assumed for the land use forecast that the FDOT is using. However, access management strategies have been developed for the quadrants and have been included in the Access Management Plan contained herein.

Future conditions related to the Access Management Plan assume two scenarios:

- Interim at-grade improvements to SR-84 and the SR-84/CR-951 intersection
- Buildout with a grade separation at the SR-84/CR-951 intersection

Road	Segment	Without Access Rd. #2 Extended	With Access Rd. #2 Extended
Access Rd. #2	Santa Barbara Blvd. to CR-951	NA	7,100
CR-951	N. of Access Rd. #2	54,600	54,500
CR-951	S. of Access Rd. #2	65,600	63,900
CR-951	S. of I-75	92,800	92,400
CR-951	S. of SR-84	75,700	76,000
SR-84	W. of CR-951	35,300	33,600
Santa Barbara Blvd.	N. of Access Rd. #2	51,600	54,600
Santa Barbara Blvd.	S. of Access Rd. #2	51,400	51,500
Santa Barbara Blvd.	S. of Radio Rd. (CR-856)	43,300	42,600
I-75	W. of CR-951	48,000	45,200

Table 4-8

Activity Center South

The transportation network in the southern portion of the activity center is the subject of a PD&E analysis that URS Greiner is conducting under the FDOT's direction. The PD&E is intended to finalize the design concept(s) for the proposed at-grade and grade-separated improvements needed at the junction of SR-84, CR-951, and I-75 to accommodate 20-year traffic.

Because the future improvements will be dictated by the results of the FDOT's study, the activity center future conditions work did not include any additional travel demand analysis of the southern quadrants of Activity Center #9. No

IMP Recommendations

The IMP recommendations are divided into two areas:

- Land Use Strategies
- Infrastructure Improvements

Land Use Strategies

The following land use strategies should be considered for future land development requests within the activity center.

1. Require mixed-use developments for all future rezone requests. The value of mixed-use developments, especially when a residential component is included, should be maximized. Trip

"chaining" and internal capture can significantly reduce the "new external trips" of a mixed-use project.

2. Promote low trip-generating commercial and industrial uses within existing and future commercial/ industrial developments. Consider maximum square footage or trip generation thresholds for high trip-generating land uses. Provide land development incentives for low trip-generating uses.
3. Require internal site interconnections between adjacent land uses to facilitate convenient and safe internal vehicular movements without affecting the external roadway network.
4. Consider site planning strategies that allow and encourage safe and convenient pedestrian movements between adjacent uses.
5. Require all future developments to commit to the support of future public transportation operations. New developments should be encouraged to anticipate future transit stop locations when designing the site access and circulation to land uses.

Infrastructure Improvements

I-75 separates infrastructure improvements geographically and functionally:

North of I-75

1. Six-lane CR-951 (consideration should be given to an eight-lane section south of the new access road).
2. New signalized intersection of City Gate and Golden Gate Commerce Park project access roads approximately 900 feet north of the intersection of CR-951 with While Lake Boulevard and Access Road #2.
3. Interconnect Access Road #2 to new project access road through the Golden Gate Commerce Park development.
4. Relocate White Lake Boulevard to the east and interconnect it to new City Gate access road.
5. Maintain and signalize the existing median opening at intersection of CR-951 with White Lake Boulevard and Access Road #2.
6. Relocate and bring the I-75 westbound off-ramp under signal control.
7. Add northbound right turn deceleration lane at CR-951 and White Lake Boulevard.
8. Interconnect all signals.
9. Locate a park-and-ride lot within the activity center (may also be south of I-75).
10. Maintain access management restrictions as shown on the Access Management Plan.

South of I-75

1. Six-lane CR-951 (further consideration should be given to an eight-lane section south of I-75 through the SR-84 intersection).
2. Six-lane SR-84 from relocated Radio Road intersection to CR-951.
3. Interim at-grade improvements as part of the multilane reconstruction of SR-84 (will require right-of-way acquisition):
   - Extend the southbound right turn lane of CR-951 approaching SR-84
   - Design the SR-84 leg of the intersection to accommodate a free-flow southbound right turn movement
   - Construct a dedicated eastbound right turn lane on SR-84 approach to CR-951
   - Construct a second eastbound left turn lane on SR-84 approach to CR-951
   - Construct a second northbound left turn lane on CR-951 approach to SR-84

- Remove access connection to Burger King parcel and relocate access connection to Bedzel Circle in the Commerce Center
- Analyze and modify existing gas station driveways (northwest and southwest of SR-84/CR-951 intersection) during multilaning

4. Interconnect all signals.
5. Future grade-separated improvements (to be determined by FDOT study).
6. Maintain access management restrictions as shown on the Access Management Plan.

Access Management Plan

Access management is a critical component to the safe and efficient operational interface between land uses and the adjacent street system. Strategies that help preserve the integrity of the arterial and collector roadways while accommodating the safe and convenient vehicle movement into and out of abutting land uses is the goal and hallmark of a well-managed system.

On August 18, 1992 the Collier County BCC adopted Resolution No. 92-442 that established a policy for access management for the county's arterial and collector roadways.

Recognizing the importance of access management issues regarding the uses within activity centers, Collier County adopted Policy 4.4 of the Future Land Use Element of the GMP. This required the development and adoption of Access Management Plans for each activity center shown on the county's Future Land Use Map. These Access Management Plans, ultimately adopted as part of the LDC (Appendix "E"), include the location of existing and future access connections (eg., driveways, entrance and access roads, etc.), median openings, and traffic signals. Additionally, the plans included the identification of existing conditions that may be subject to retrofit measures (eg., closing a median or removing a driveway connection).

Because of the expansion of the boundary of Activity Center #9 and because of the level of current and projected traffic, it is appropriate for Collier County to reexamine the current Access Management Plan for Activity Center #9 and modify it as needed.

Current Access Management Plan

The currently adopted Access Management Plan originally was developed to be as consistent as possible with the access management guidelines and standards in the County's access management policy (Res. 92-442).

The currently adopted Activity Center #9 Access Management Plan map as shown in Figure 4-8 reflects the current conditions and identifies proposed additions. The majority of the lands in this activity center will be part of planned developments that were subjected to a heightened level of scrutiny regarding access management issues. This helped establish a reasonable access management environment. Many of the projects are still undeveloped, which creates opportunities for adjusting the standards and guidelines to improve access management features without placing unnecessary burden on the landowners.

Lastly, the current plan, while addressing access for adjacent lands, does not adequately address the need for future arterial and collector roadway improvements. In its current form, the plan does not include/anticipate the future need for turn lanes, additional through-lanes, grade-separated travel lanes, new interstate ramps, ramp modifications, etc. It also lacks measures to encourage and manage internal connections between projects to help minimize access connections to the arterial/collector system.

ACTIVITY CENTERS

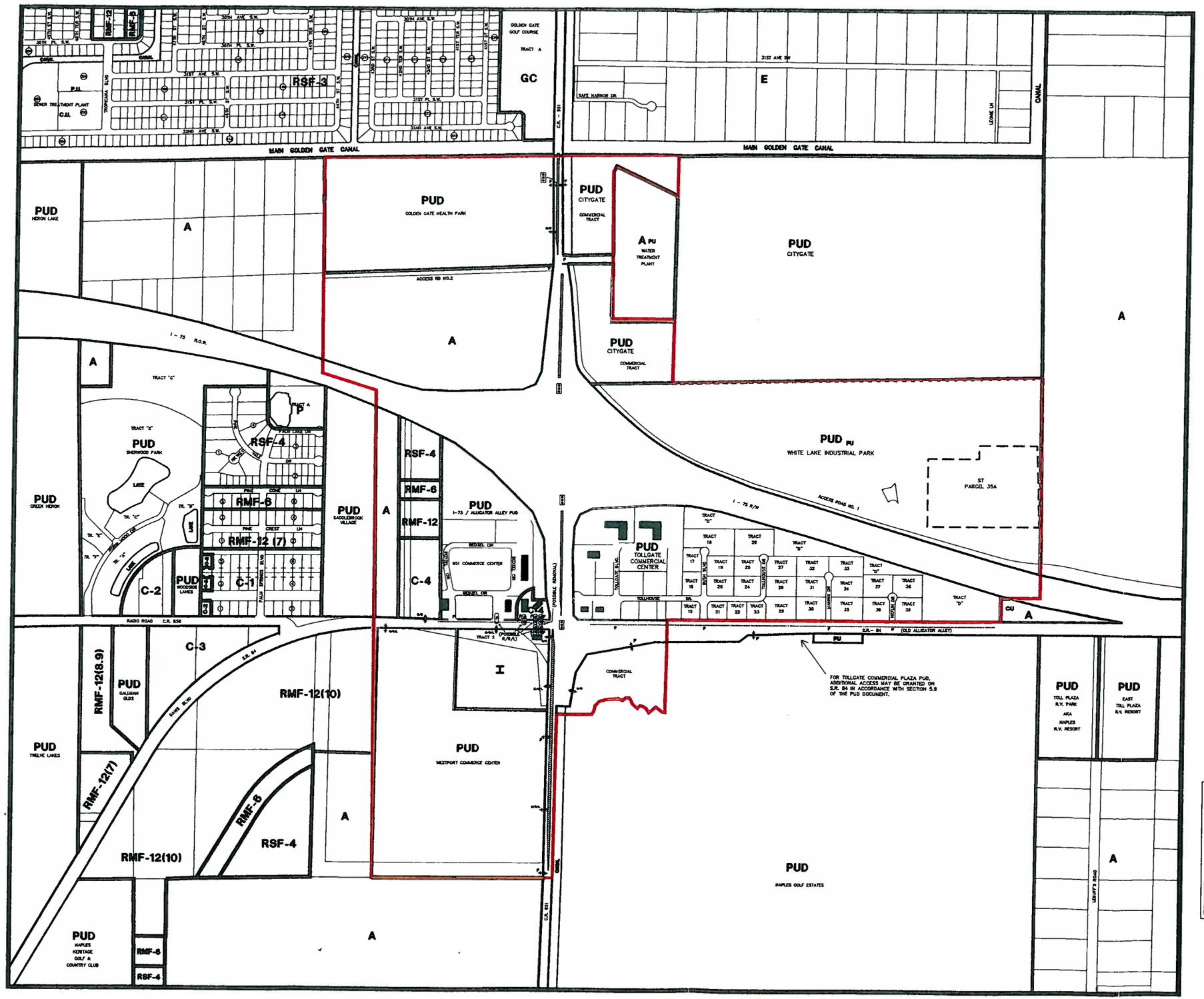
C.R. 951 - INTERSTATE 75

ACTIVITY CENTER # 9

Collier County, Florida

ZONING	ACREAGE	DEVELOPED	UNDEVELOPED
C-4	2.10	2.10	0.00
I	20.85	.74	20.11
PUD	510.13	22.34	487.79
RMF-6	4.57	0.00	4.57
RMF-12	9.53	0.00	9.53
RSF-4	2.28	0.00	2.28
A	71.62	0.00	71.62
TOTAL	621.08	25.18	595.90

* NOTE: FINAL ACREAGE CALCULATIONS WILL BE COMPLETED PRIOR TO ADOPTION.



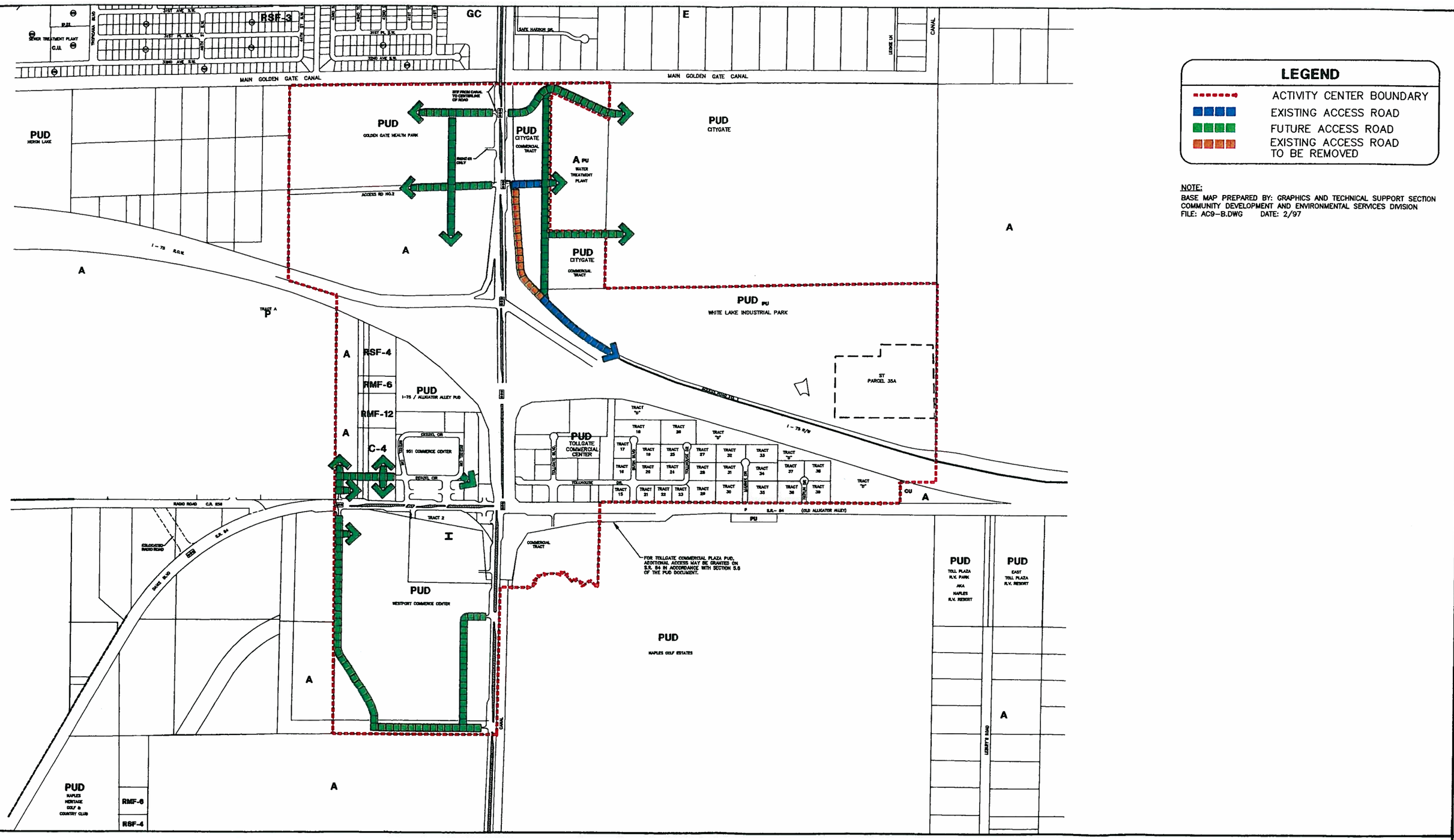
LEGEND

- ACTIVITY CENTER BOUNDARY
- RSF-3 EXISTING ZONING
- DEVELOPED LAND USE (NOTE: DEVELOPED LAND USE, EXISTING BUILDINGS AND STRUCTURES COMPILED FROM FEBRUARY 1993 AERIAL PHOTO)
- EXISTING BUILDINGS AND STRUCTURES

Figure 4-8

Nov 13, 2000 - 17:26:57 KCHACHER|X:\Pla\3125\03\ac9-b.dwg

PREPARED BY: GRAPHICS AND TECHNICAL SUPPORT SECTION
COMMUNITY DEVELOPMENT AND ENVIRONMENTAL SERVICES DIVISION
FILE: AC9-B.DWG DATE: 2/97



ACTIVITY CENTER #9

PROPOSED ACCESS MANAGEMENT PLAN

Figure 4–9

RSF-3

44TH ST. S.

31ST PL S.W.

32ND AVE S.W.

SAFE HARBOR DR.

MAIN GOLDEN GATE CANAL

MAIN GOLDEN GATE CANAL

375' FROM CANAL TO CENTERLINE OF ROAD

PUD
GOLDEN GATE HEALTH PARK

RIGHT-IN ONLY

ACCESS RD NO.2

PUD
CITYGATE
COMMERCIAL TRACT

A PU
WATER TREATMENT PLANT

PUD
CITYGATE

A

PUD
CITYGATE
COMMERCIAL TRACT

PUD PU
WHITE LAKE INDUSTRIAL PARK

TRACT A
P

A

RSF-4

ST PARCEL

LEGEND

- EXISTING ACCESS ROAD
- FUTURE ACCESS ROAD
- EXISTING ACCESS ROAD TO BE REMOVED

ACTIVITY CENTER #9

ACCESS MANAGEMENT PLAN (NORTH)

Figure 4–10

NORTH

0' 250' 500' 1000' 1500'

Nov 13, 2000 – 17:42:07 KCHACHER|X:\Plo\3125\03revisions\3125031b.dwg

Proposed Access Management Plan

As demonstrated in Figure 4-9, the proposed Access Management Plan has been developed to be more specific than the current one. Once adopted as amendments to the LDC, the changes will serve as strict guidance to the state and county permitting agencies in the review and consideration of access management improvements. The proposed Access Management Plan maps have been developed in cooperation with state and county access management officials and in consultation with adjoining property owners.

For ease of feature identification and use, the Access Management Plan maps have been divided into one or more panels for the areas north (Figure 4-10) and south (Figure 4-11) of I-75. Access connections shown are to be regarded as specific in number and location; minor adjustments in the locations may be appropriately determined at the time of permitting. Specific features (eg., directional median openings) shall not be changed to another feature type, nor shall additional features be added (including driveway connections) without an appropriate amendment to the Access Management Plan map adopted in the LDC.

ACTIVITY CENTER #9

ACCESS MANAGEMENT PLAN (SOUTH)

Figure 4–11

Nov 13, 2000 – 17:41:47 KCHACHER|X:\Pla\3125\03revisions\3125031a.dwg

APPENDIX B

SIGNALIZED INTERSECTION ANALYSES

ARTERIAL ANALYSES

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: NORTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 2 SIGNAL CITY GATE @ 50 %
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	329	3	313	526	16	434	363	2589	113	94	1632	288
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds						Peds				
WB	Left	A	A			SB	Left	A			
	Thru		A	A			Thru			A	
	Right		A	A			Right			A	
	Peds						Peds				
NB	Right	A	A			EB	Right	A	A		
SB	Right	A				WB	Right	A			
Green		17.0	7.0	6.0				6.0	9.0	109.0	
Yellow		4.0	4.0	4.0				4.0	4.0	4.0	
All Red		0.0	0.0	0.0				0.0	0.0	2.0	

Cycle Length: 180.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	350	3502	0.99	0.100	125.8	F		
T	74	1900	0.04	0.039	83.5	F	101.7	F
R	474	2842	0.56	0.167	70.5	E		
Westbound								
L	564	3502	0.98	0.161	108.5	F		
T	190	1900	0.09	0.100	73.8	E	102.1	F
R	442	2842	0.89	0.156	94.3	F		
Northbound								
L	389	3502	0.98	0.111	90.4	F		
T	3544	5187	0.77	0.683	19.1	B	27.4	C
R	1409	1615	0.04	0.872	1.5	A		
Southbound								
L	136	3502	0.73	0.039	95.0	F		
T	3170	5187	0.54	0.611	20.4	C	22.5	C
R	1193	1615	0.20	0.739	7.2	A		

Intersection Delay = 44.6 (sec/veh) Intersection LOS = D

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: NORTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 2 SIGNAL CITY GATE FULL BUILD
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	329	5	313	933	28	777	363	2790	195	163	1660	288
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds						Peds				
WB	Left	A	A			SB	Left	A			
	Thru		A	A			Thru			A	
	Right		A	A			Right			A	
	Peds						Peds				
NB	Right	A	A			EB	Right	A	A		
SB	Right	A				WB	Right	A			
Green		13.0	31.0	6.0				6.0	4.0	94.0	
Yellow		4.0	4.0	4.0				4.0	4.0	4.0	
All Red		0.0	0.0	0.0				0.0	0.0	2.0	

Cycle Length: 180.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	272	3502	1.27	0.078	231.0	F		
T	74	1900	0.07	0.039	83.7	F	163.9	F
R	395	2842	0.67	0.139	78.1	E		
Westbound								
L	953	3502	1.03	0.272	102.7	F		
T	443	1900	0.07	0.233	53.8	D	91.1	F
R	821	2842	0.92	0.289	77.4	E		
Northbound								
L	292	3502	1.31	0.083	223.8	F		
T	2968	5187	0.99	0.572	41.3	D	59.8	E
R	1409	1615	0.10	0.872	1.6	A		
Southbound								
L	136	3502	1.26	0.039	231.6	F		
T	2738	5187	0.64	0.528	30.5	C	44.7	D
R	1023	1615	0.23	0.633	14.3	B		

Intersection Delay = 72.4 (sec/veh) Intersection LOS = E

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: SOUTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 1 SIGNAL CITY GATE @ 20 % DEV
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	546	9	783	723	54	404	907	2037	179	101	1343	481
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left		A			NB	Left	A	A		
	Thru				A		Thru		A	A	
	Right				A		Right		A	A	
	Peds						Peds				
WB	Left		A	A		SB	Left	A			
	Thru			A	A		Thru			A	
	Right			A	A		Right			A	
	Peds						Peds				
NB	Right		A	A		EB	Right	A	A		
SB	Right		A			WB	Right	A			
Green			33.0	8.0	9.0			15.0	32.0	57.0	
Yellow			4.0	4.0	4.0			4.0	4.0	4.0	
All Red			0.0	0.0	0.0			0.0	0.0	2.0	

Cycle Length: 180.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	661	3502	0.87	0.189	82.9	F		
T	106	1900	0.08	0.056	81.0	F	66.0	E
R	1026	2842	0.74	0.361	53.1	D		
Westbound								
L	895	3502	0.85	0.256	71.6	E		
T	232	1900	0.25	0.122	72.0	E	68.8	E
R	647	2842	0.56	0.228	62.6	E		
Northbound								
L	1012	3502	0.94	0.289	65.0	E		
T	2709	5187	0.79	0.522	35.2	D	42.8	D
R	1301	1615	0.10	0.806	3.7	A		
Southbound								
L	311	3502	0.34	0.089	77.4	E		
T	1671	5187	0.85	0.322	59.0	E	52.7	D
R	870	1615	0.51	0.539	26.6	C		

Intersection Delay = 55.0 (sec/veh) Intersection LOS = D

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: SOUTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 1 SIGNAL CITY GATE FULL BUILD
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	546	9	783	2351	54	1319	907	2037	508	287	1343	431
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left		A			NB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds						Peds				
WB	Left		A	A		SB	Left	A			
	Thru			A	A		Thru			A	
	Right			A	A		Right			A	
	Peds						Peds				
NB	Right		A	A		EB	Right	A	A		
SB	Right		A			WB	Right	A			
Green			19.0	70.0	5.0			8.0	19.0	33.0	
Yellow			4.0	4.0	4.0			4.0	4.0	4.0	
All Red			0.0	0.0	0.0			0.0	0.0	2.0	

Cycle Length: 180.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	370	3502	1.55	0.106	342.8	F		
T	53	1900	0.17	0.028	87.0	F	246.9	F
R	632	2842	1.20	0.222	176.4	F		
Westbound								
L	1809	3502	1.37	0.517	212.8	F		
T	834	1900	0.07	0.439	29.2	C	154.6	F
R	1437	2842	0.92	0.506	51.3	D		
Northbound								
L	603	3502	1.58	0.172	345.0	F		
T	1614	5187	1.33	0.311	214.2	F	221.2	F
R	1391	1615	0.34	0.861	2.6	A		
Southbound								
L	156	3502	1.94	0.044	529.8	F		
T	951	5187	1.49	0.183	298.2	F	283.8	F
R	520	1615	0.85	0.322	69.8	E		

Intersection Delay = 219.3 (sec/veh) Intersection LOS = F

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: SOUTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 2 SIGNAL CITY GATE @ 35%
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	217	4	470	600	11	245	544	2396	152	64	1986	193
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds						Peds				
WB	Left	A	A			SB	Left	A			
	Thru		A	A			Thru			A	
	Right		A	A			Right			A	
	Peds						Peds				
NB	Right	A	A			EB	Right	A	A		
SB	Right	A				WB	Right	A			
Green		11.0	13.0	6.0				6.0	18.0	110.0	
Yellow		4.0	4.0	4.0				4.0	4.0	4.0	
All Red		0.0	0.0	0.0				0.0	0.0	2.0	

Cycle Length: 190.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	221	3502	1.03	0.063	158.0	F		
T	70	1900	0.06	0.037	88.7	F	104.1	F
R	583	2842	0.74	0.205	75.8	E		
Westbound								
L	535	3502	1.18	0.153	180.1	F		
T	240	1900	0.05	0.126	73.1	E	152.8	F
R	509	2842	0.38	0.179	69.2	E		
Northbound								
L	535	3502	1.07	0.153	116.9	F		
T	3631	5187	0.69	0.700	16.7	B	34.2	C
R	1420	1615	0.07	0.879	1.5	A		
Southbound								
L	129	3502	0.52	0.037	91.7	F		
T	3030	5187	0.69	0.584	27.9	C	28.7	C
R	1088	1615	0.13	0.674	11.1	B		

Intersection Delay = 54.1 (sec/veh) Intersection LOS = D

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: SOUTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 2 SIGNAL CITY GATE @ 50%
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	217	4	470	808	15	313	544	2412	190	78	2102	193
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left		A			NB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds						Peds				
WB	Left		A	A		SB	Left	A			
	Thru			A	A		Thru			A	
	Right			A	A		Right			A	
	Peds						Peds				
NB	Right		A	A		EB	Right	A	A		
SB	Right		A			WB	Right	A			
Green			11.0	23.0	6.0			6.0	18.0	88.0	
Yellow			4.0	4.0	4.0			4.0	4.0	4.0	
All Red			0.0	0.0	0.0			0.0	0.0	2.0	

Cycle Length: 178.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	236	3502	0.97	0.067	131.7	F		
T	75	1900	0.05	0.039	82.6	F	89.5	F
R	623	2842	0.69	0.219	67.3	E		
Westbound								
L	767	3502	1.11	0.219	136.3	F		
T	363	1900	0.04	0.191	58.8	E	116.4	F
R	703	2842	0.38	0.247	56.0	E		
Northbound								
L	571	3502	1.00	0.163	87.2	F		
T	3235	5187	0.78	0.624	24.8	C	34.9	C
R	1406	1615	0.10	0.871	1.6	A		
Southbound								
L	138	3502	0.59	0.039	87.5	F		
T	2594	5187	0.85	0.500	40.3	D	40.5	D
R	962	1615	0.15	0.596	16.0	B		

Intersection Delay = 54.6 (sec/veh) Intersection LOS = D

HCS: Signals Release 3.1b

Inter:
Analyst: WILSONMILLER
Date: 12/13/99
E/W St: SOUTH ACCESS RD

City/St: COLLIER CO FL
Proj #: 2 SIGNAL CITY GATE FULL BUILD
Period: PM PEAK 2024
N/S St: CR 951

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	2	2	1	2	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	217	4	470	1418	26	542	544	2467	313	124	2491	193
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			60			60			60			60

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru			A		Thru		A	A	
Right			A		Right		A	A	
Peds					Peds				
WB Left	A	A			SB Left	A			
Thru		A	A		Thru			A	
Right		A	A		Right			A	
Peds					Peds				
NB Right	A	A			EB Right	A	A		
SB Right	A				WB Right	A			
Green	6.0	47.0	6.0			6.0	10.0	79.0	
Yellow	4.0	4.0	4.0			4.0	4.0	4.0	
All Red	0.0	0.0	0.0			0.0	0.0	2.0	

Cycle Length: 180.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capcity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	136	3502	1.68	0.039	420.8	F		
T	74	1900	0.05	0.039	83.6	F	203.5	F
R	489	2842	0.88	0.172	89.9	F		
Westbound								
L	1128	3502	1.32	0.322	212.9	F		
T	612	1900	0.04	0.322	42.0	D	168.0	F
R	1074	2842	0.47	0.378	42.7	D		
Northbound								
L	409	3502	1.40	0.117	261.5	F		
T	2709	5187	0.96	0.522	42.5	D	75.9	E
R	1409	1615	0.19	0.872	1.8	A		
Southbound								
L	136	3502	0.96	0.039	130.8	F		
T	2305	5187	1.14	0.444	115.0	F	111.3	F
R	825	1615	0.17	0.511	23.6	C		

Intersection Delay = 118.8 (sec/veh) Intersection LOS = F

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name: CR 951
File Case: 2024 2 SIGNAL CITY GATE @ 100%
Prepared By: WILSONMILLER
Direction: North-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	0.28	2	45	28.3	1
2	NORTH ACCESS RD	0.20	2	45	21.8	2
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.522	0.959	2709		3	1.000	3.0	0	50.8	0.0	D
2	180.0	0.572	0.990	2968		3	0.187	3.0	0	43.1	0.0	D
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	28.3	50.8	0.0	79.1	0.28	12.7	F
2	2	21.8	43.1	0.0	64.9	0.20	11.1	F
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 144.0 sec
Grand Sum of Length (y) = 0.48 miles
Arterial Speed = 3600 x (y)/(x) = 12.0 mph
Arterial Level of Service, LOS = F

Intersection Files in the Analysis

1: E:\activity9\S9512F.hcs
2: E:\activity9\N9512F.hcs
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name: CR 951
File Case: 2024 2 SIGNAL CITY GATE @ 100%
Prepared By: WILSONMILLER
Direction: South-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	NORTH ACCESS RD	1.06	1	50	76.3	1
2	SOUTH ACCESS RD	0.20	2	45	21.8	2
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.528	0.638	2738		3	1.000	3.0	0	31.0	0.0	C
2	180.0	0.444	1.138	2305		3	0.727	3.0	0	122.5	0.0	F
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	76.3	31.0	0.0	107.3	1.06	35.6	B
2	2	21.8	122.5	0.0	144.3	0.20	5.0	F
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 251.5 sec
Grand Sum of Length (y) = 1.26 miles
Arterial Speed = 3600 x (y)/(x) = 18.0 mph
Arterial Level of Service, LOS = E

Intersection Files in the Analysis

1: E:\activity9\N9512F.hcs
2: E:\activity9\S9512F.hcs
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name:
File Case: 2024 1 SIGNAL CITY GATE @ 100%
Prepared By: WILSONMILLER
Direction: North-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	0.28	2	45	28.3	1
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.311	1.328	1614		3	1.000	3.0	0	224.9	0.0	F
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	28.3	224.9	0.0	253.2	0.28	4.0	F
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 253.2 sec
Grand Sum of Length (y) = 0.28 miles
Arterial Speed = 3600 x (y)/(x) = 4.0 mph
Arterial Level of Service, LOS = F

Intersection Files in the Analysis

1: E:\activity9\S9511F.hcs
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name:
File Case: 2024 1 SIGNAL CITY GATE @ 100%
Prepared By: WILSONMILLER
Direction: South-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	1.26	1	50	90.7	1
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.183	1.487	951		3	1.000	3.0	0	307.2	0.0	F
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	90.7	307.2	0.0	398.0	1.26	11.4	. F
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 398.0 sec
Grand Sum of Length (y) = 1.26 miles
Arterial Speed = 3600 x (y)/(x) = 11.4 mph
Arterial Level of Service, LOS = F

Intersection Files in the Analysis

1: E:\activity9\S9511F.hcs
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name: CR 951
File Case: 2024 2 SIGNALS CITY GATE @ 50%
Prepared By: WILSONMILLER
Direction: North-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	0.28	2	45	28.3	1
2	NORTH ACCESS RD	0.20	2	45	21.8	2
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	178.0	0.624	0.785	3235		3	1.000	3.0	0	26.2	0.0	C
2	180.0	0.683	0.769	3544		3	0.525	3.0	0	19.7	0.0	B
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	28.3	26.2	0.0	54.5	0.28	18.5	D
2	2	21.8	19.7	0.0	41.5	0.20	17.4	D
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 96.0 sec
Grand Sum of Length (y) = 0.48 miles
Arterial Speed = 3600 x (y)/(x) = 18.0 mph
Arterial Level of Service, LOS = D

Intersection Files in the Analysis

1: E:\activity9\S951250.hcs
2: E:\activity9\N951250.hcs
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name: CR 951
File Case: 2024 2 SIGNALS CITY GATE @ 50%
Prepared By:
Direction: South-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	NORTH ACCESS RD	1.06	1	50	76.3	1
2	SOUTH ACCESS RD	0.20	2	45	21.8	2
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.611	0.542	3170		3	1.000	3.0	0	20.7	0.0	C
2	178.0	0.500	0.853	2594		3	0.800*	3.0	0	41.4	0.0	D
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	76.3	20.7	0.0	97.0	1.06	39.3	B
2	2	21.8	41.4	0.0	63.2	0.20	11.4	F
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 160.2 sec
Grand Sum of Length (y) = 1.26 miles
Arterial Speed = 3600 x (y)/(x) = 28.3 mph
Arterial Level of Service, LOS = C

Intersection Files in the Analysis

1: E:\activity9\N951250.hcs
2: E:\activity9\S951250.hcs
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name:
File Case: 2024 2 SIGNALS CITY GATE @ 35
Prepared By: WILSONMILLER
Direction: South-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	0.20	2	45	21.8	1
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	190.0	0.584	0.690	3030		4	0.100*3.0		0	16.9	0.0	B
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	21.8	16.9	0.0	38.7	0.20	18.6	D
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x)	=	38.7	sec
Grand Sum of Length (y)	=	0.20	miles
Arterial Speed = 3600 x (y)/(x)	=	18.6	mph
Arterial Level of Service, LOS	=	D	

Intersection Files in the Analysis

1: E:\activity9\S951235.hcs
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name:
File Case: 2024 1 SIGNAL CITY GATE AT 20%
Prepared By: WILSONMILLER
Direction: North-bound
Date: 12/14/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 951					
1	SOUTH ACCESS RD	0.28	2	45	28.3	1
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.522	0.791	2709		4	0.100*3.0		0	25.8	0.0	C
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	28.3	25.8	0.0	54.1	0.28	18.6	D
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 54.1 sec
Grand Sum of Length (y) = 0.28 miles
Arterial Speed = 3600 x (y)/(x) = 18.6 mph
Arterial Level of Service, LOS = D

Intersection Files in the Analysis

1: E:\activity9\S951120.hcs
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

HCS: Arterials Release 3.1b

Steve Pivnicki
WilsonMiller Inc.

Phone: 727-615-1319 Fax:
E-Mail:

OPERATIONAL ANALYSIS

Arterial Name:
File Case: 2024 1 SIGNAL CITY GATE @ 20%
Prepared By: WILSONMILLER
Direction: South-bound
Date: 12/1·/99

Description of Arterial

Analysis Period Length 0.25 hr

Seg.	Cross Street Name	Length (mi)	Art. Class	Free Flow Speed (mph)	Running Time (sec)	Section
0	CR 961					
1	SOUTH ACCESS RD	1.26	1	50	90.7	1
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

Intersection Delay Estimates

Seg	Cycle Length C	Green Ratio g/C	v/c Ratio X	Lane Cap. c	PVG if Input	Arr. Type AT	I Factor	Unit Ext. (sec)	Init. Queue (veh)	Cntrl. Delay (sec)	Other Delay (sec)	Inter. LOS
1	180.0	0.322	0.846	1671		3	1.000	3.0	0	61.5	0.0	E
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

13
14
15

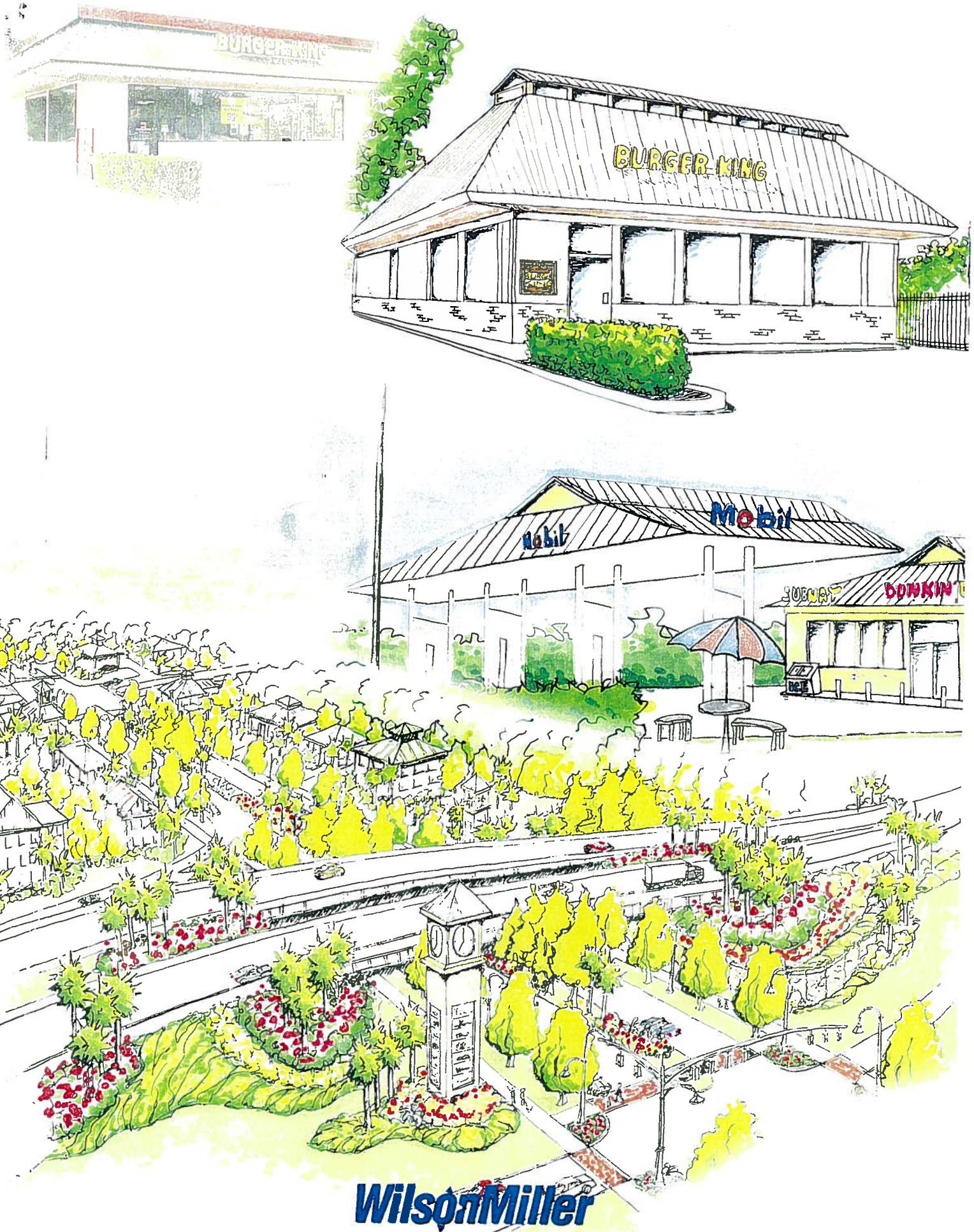
Arterial Level of Service

Seg.	Sect.	Running Time (sec)	Inter. Control. Delay (sec)	Other Delay (sec)	Sum of Time by Section (sec)	Sum of Length by Section (mi)	Arterial Speed (mph)	Arterial LOS by Section
1	1	90.7	61.5	0.0	152.2	1.26	29.8	C
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								

Grand Sum of Time (x) = 152.2 sec
Grand Sum of Length (y) = 1.26 miles
Arterial Speed = 3600 x (y)/(x) = 29.8 mph
Arterial Level of Service, LOS = C

Intersection Files in the Analysis

1: E:\activity9\S951120.hcs
2:
3:
4:
5:
6:
7:
8:
9:
10:
11:
12:
13:
14:
15:

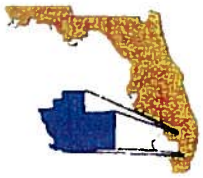


WilsonMiller

Naples Fort Myers Sarasota Bradenton Tampa Tallahassee

www.wilsonmiller.com 800-649-4336

WilsonMiller



Section 5—Implementation Strategies

Implementation Strategies

Implementation of the IMP requires a well planned strategy. The BCC must take certain steps to initiate the improvement process—to bring these design concepts off the paper and into Activity Center #9. The following strategies provide the structure under which the IMP's design concepts can be implemented.

Zoning Overlay

As required by the BCC's adopted IMP study parameters, establishing a zoning overlay district will be one of the implementation strategies. The purpose of the overlay district, which will encompass all properties within the boundaries of Activity Center #9, will be to encourage and direct development within the activity center. The overlay district will ensure that the design of landscape, architecture, and signage will be regulated and approved in accordance with the provision of the specific LDC section.

Land Development Code Amendments

When establishing the study parameters, the BCC decided that the IMP shall apply to all undeveloped property within Activity Center #9. The activity center contains approved PUDs that are required to be developed in accordance with cited sections of the LDC (i.e., landscaping and buffering, signage). Therefore, these sections will need to be amended to provide a directional link to the Activity Center #9 zoning overlay district. LDC sections that will need to be amended include the following:

- **Division 2.4** Landscaping and Buffering
- **Division 2.5** Signage
- **Division 2.6** Supplemental District Regulations
- **Division 2.8** Architectural and Site Design Standards and Guidelines for Commercial Buildings and Projects

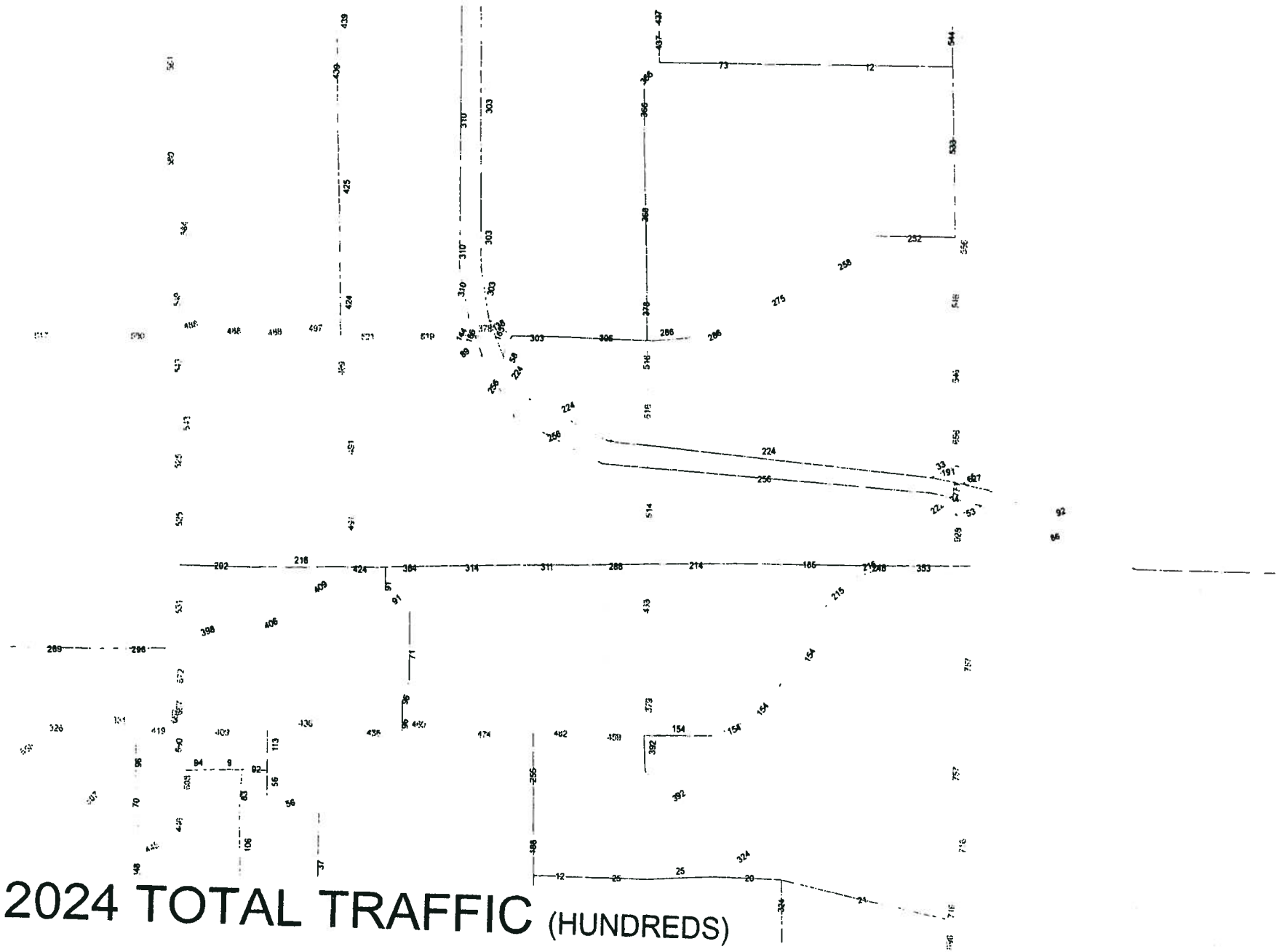
Capital Improvement Plan

The entry/exit gateway features, landscaping, directional signage, and lighting elements will occur within the public rights-of-way. The implementation mechanism for these projects will be the county's Capital Improvement Plan (CIP). Each element will have to be prioritized in the CIP with an identified funding source. In addition to local funding sources, such as general revenues and roadway revenues, Collier County should explore other applicable opportunities such as the Florida Highway Beautification Grant Program and Transportation Enhancement Activities.

WilsonMiller

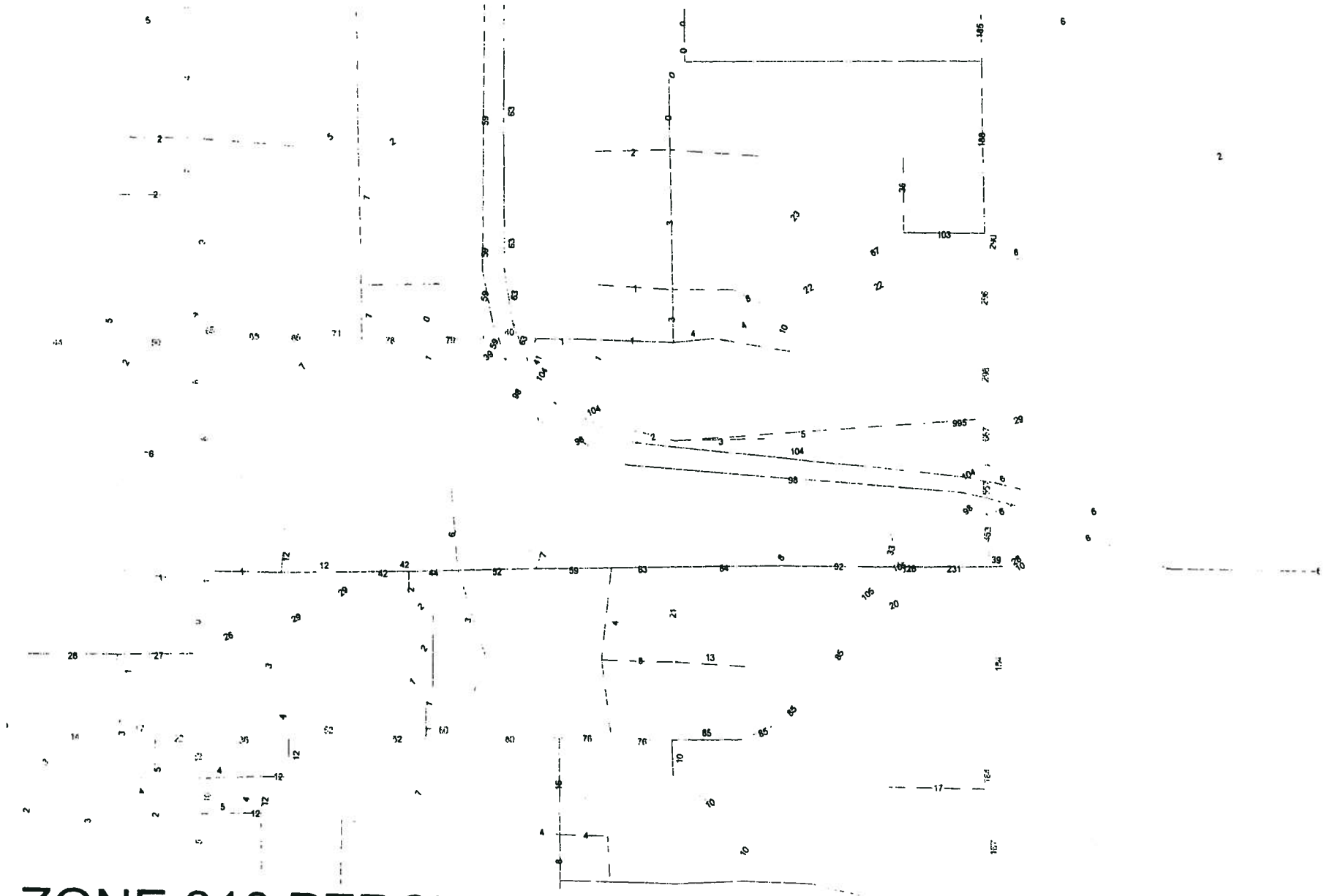
APPENDIX A

FSUTMS MODEL PLOTS



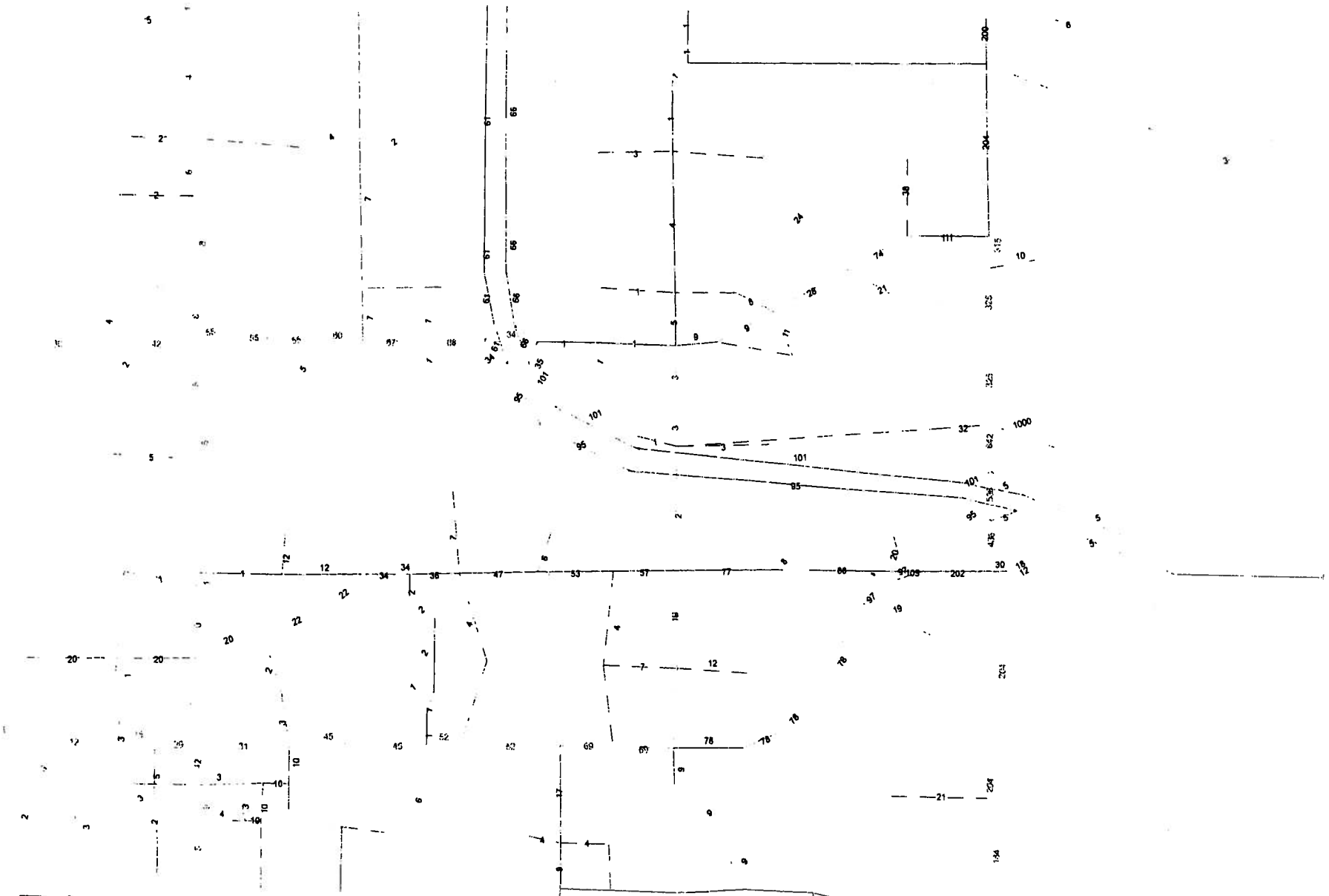
2024 TOTAL TRAFFIC (HUNDREDS)

12/13/99



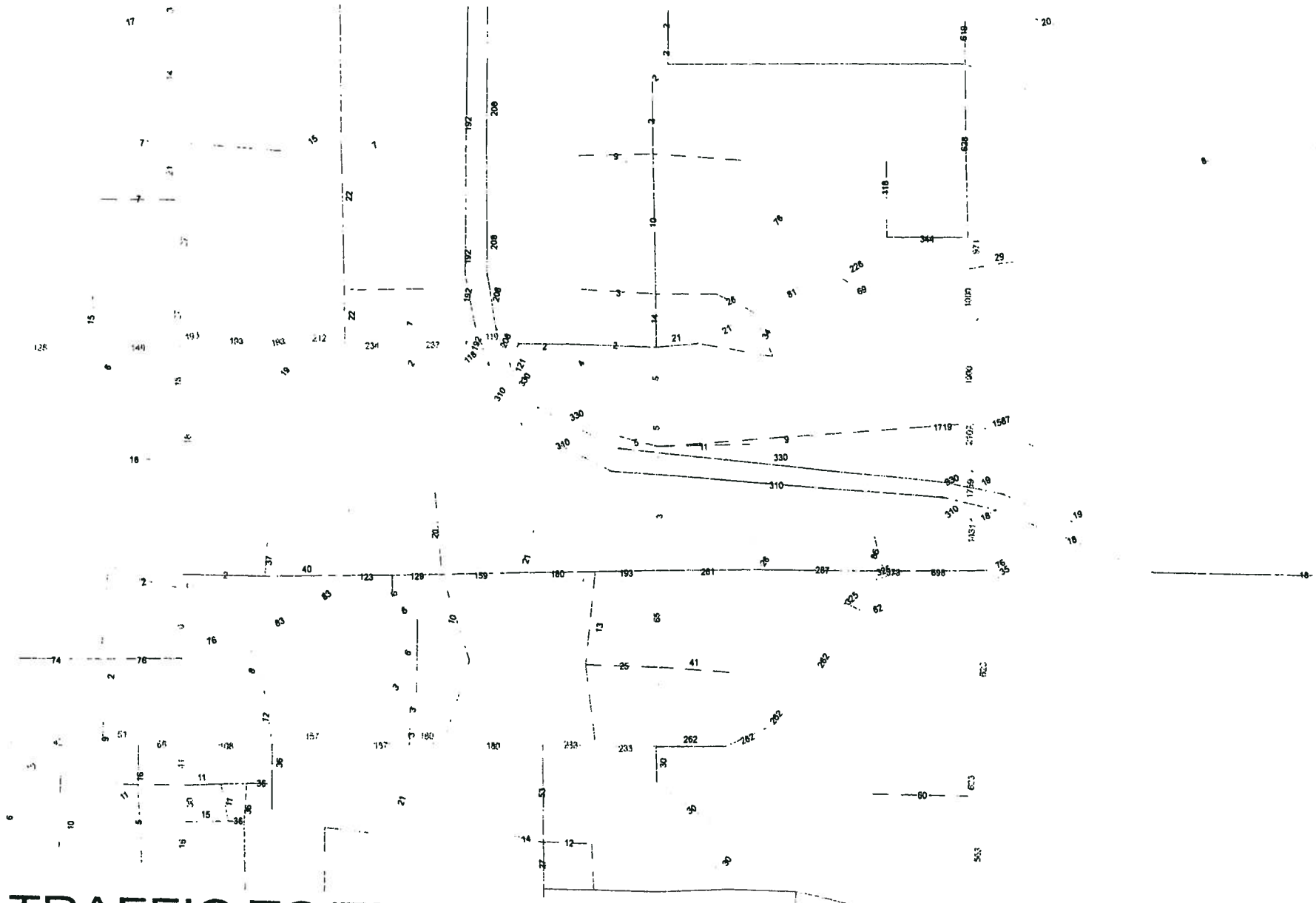
ZONE 310 PERCENT TRAFFIC (X10)

12/13/99



ZONE 311 PERCENT TRAFFIC (X10)

12/13/99



TRAFFIC TO/FROM ZONES 310 AND 311 (TENS)

12/13/99

WilsonMiller