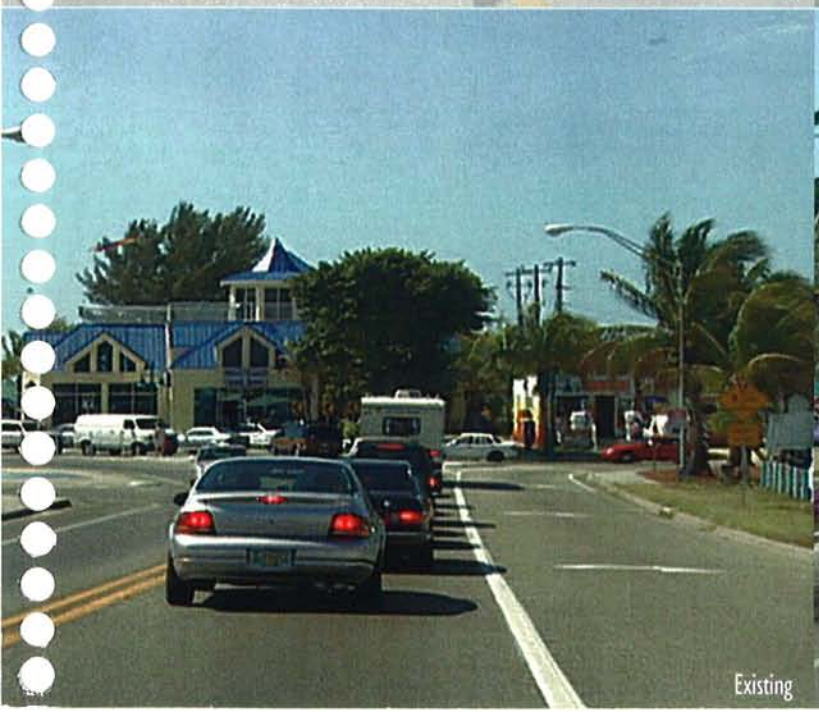
Estero Boulevard Streetscape Master Plan

WilsonMiller

June 5, 2000

Existing

Future



Acknowledgement of Leadership

A special note of tribute is given in memory and honor
of John Mulholland, Mayor deceased,
of the Town of Fort Myers Beach.

His vision and dedication provided
the leadership to begin the journey
to create a plan for streetscape
and safety enhancements for Estero Boulevard.

His smile and wit are but a memory,
but his mission remains
and will be accomplished
through the efforts of the Town Council,
citizens, and staff of a caring and grateful community.

Project Leadership

Daniel Hughes Mayor
Ray Murphy Vice Mayor
Anita Cereceda Council Member
Terry Cain Council Member
Garr Reynolds Council Member

Town of Fort Myers Beach
Marsha Segal-George Town Manager
John Gucciardo Deputy Town Manager
Pam Houck Service Delivery Coordinator
Debbie Lasich Administrative Assistant
Janneen Paulauskis Accounts Supervisor
Richard Roosa Town Attorney

Walkable Communities, Inc.

Dan Burden Director
Peter Swift, P.E. Principal Engineer
Ramon Trias Principal Town Planner
Mario Rubio Principal Architect

Special Thanks:
Larry Welty, P.E. Project Assistant
Kelly LaRosa Project Assistant

Alternate Street Design, P.A.

Michael Wallwork, P.E. President

Aerial Cartographics of America, Inc.

Steve Kuda, P.S.M. Vice President

Ken Sneeden & Associates

Multimedia Production
Ken Sneeden President

WilsonMiller, Inc.

Richard Woodruff, PhD Community Liaison
Bruce Rankin, RLA Landscape Architecture
Steve Beyer, RLA Landscape Visualization
Bill Bowers Landscape Design
Dayna Fendrick, RLA, AICP Landscape Architecture
Matt Horton Landscape Design
Ken Natoli, RLA Landscape Architecture
Robin Renfroe, RLA Landscape Architecture
Anita Jenkins, AICP Bicycle/Pedestrian Design
Randy Coen Transportation Planning/Design
Wayne Hartt, P.E. Traffic Engineering
Arnold Kenly, E.I. Transportation Design
Jason Mosley Roadway Design
Jeffory Perry, AICP Transportation Planning/Design
Jerry Graham, E.I. Transportation Planning/Design
Steve Pivnicki, P.E., AICP Traffic Engineering
Pat Jennings, P.E. Drainage
Dorothea Zysko, CE, PWS Ecological Services
Sharon Jenkins-Owen, AICP Concept Planning
Keith Morrow, RLA Urban Design/Resort Design
Andrea Tyson, AICP Written Communications
Jennifer Chase Graphic Design
Danielle Johnson Written Communications
Katherine Chachere Computer Design/Graphics
Chris Pereira Computer Design/Graphics
David Place Computer Design/Graphics

Estero Boulevard STREETSCAPE

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Introduction

Town of Fort Myers Beach

Estero Boulevard STREETSCAPE

Section 1—Introduction

Background

In 1995, the newly formed Town of Fort Myers Beach (the Town) initiated a visioning process to focus on implementing its long-term goals, one of which included beautifying Estero Boulevard. In January 1999, the *Town of Fort Myers Beach Comprehensive Plan* (the *Comprehensive Plan*) took effect. This document identified the Town's overall goals and established policies to implement them, guiding the area's future development and redevelopment. In the fall of 1999, the WilsonMiller team began working with the Town to initiate the beautification portion of the *Comprehensive Plan*, the *Estero Boulevard Streetscape Master Plan*.

Residents of the Town of Fort Myers Beach seek a sense of purpose, place, and a greater mix of activity and excitement along Estero Boulevard—it should be a destination of its own.

Vision

A central element of the Town's vision concentrates on beautifying Estero Boulevard, the seven-mile corridor that traverses the entire island. Objective 1-A of the *Comprehensive Plan* is to "Improve the functioning and appearance of Estero Boulevard as the premier public space and primary circulation route of Fort Myers Beach." The *Comprehensive Plan* summarizes this vision for the Town's future:

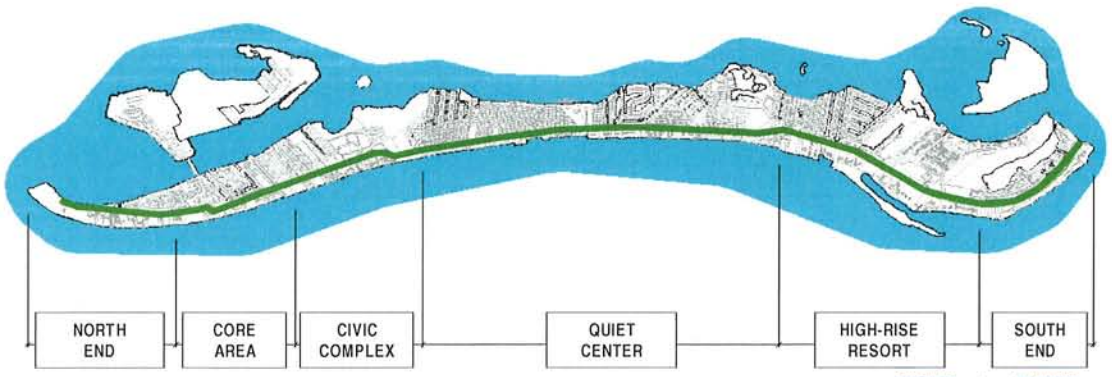
"The sidewalk and streetscape system has been continued beyond its 1997 terminus at the Lani Kai to the civic center and areas beyond. Motorists on Estero Boulevard during the peak tourist season move slowly but enjoy the beauty and interest of the public space, having learned to relax during the unavoidable season of the 'beach crawl.' Bicyclists and pedestrians share the public space but can also find quieter alternate routes off of the boulevard to get to their shopping or recreational destinations. Traffic calming measures have been introduced in areas that used to invite speeding whenever congestion lessened. Pedestrians now cross safely, and many people use the expanded fleet of trolleys to move around the island."

The *Comprehensive Plan* describes the six key components included in the vision for Estero Boulevard:

- Do not four-lane the road
- Expand Times Square streetscape project
- Institute traffic calming measures
- Put buildings closer to the street
- Improve sidewalks and bikeways
- Require traffic impact analyses be prepared for new development

In addition, the *Comprehensive Plan* divides the road into the following geographical sections, which have been used consistently throughout the *Streetscape Master Plan*:

- North Area
- Core Area
- Civic Complex
- Quiet Center
- High Rise Resort
- South End



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Section 1—Introduction

Implementing the beautification portion of the Comprehensive Plan will help the Town of Fort Myers Beach achieve a long-term goal.

The community has helped create the excitement and momentum that will bring this vision to reality.

Reality

Estero Boulevard has matured over the past 40 years, largely without any special attention focused on its appearance. Although the area once felt like a tropical village, major portions now feel like "suburban everywhere." Today, motorists along Estero Boulevard see graying parking lots, heavily congested roads, utility poles, and ponding water after it rains.

Walking along Estero Boulevard today is frequently unsafe, uncomfortable, and unwelcoming. Shade is limited. The corridor offers no safe walking or bicycling access to Times Square, the Civic Complex, the Quiet Center, Santini Plaza, and most area businesses. Crossing the roadway is challenging and risky along some parts of Estero Boulevard. Some trolley stops have no benches, while others offer uncomfortable benches that are located too close to the road.

Although the community has an elementary school and a few churches, residents must make numerous off-island automobile trips to reach other major institutions, such as secondary schools, colleges, or hospitals. The permanent population of 7,000 swells to over 40,000 during peak season. Traffic begins queuing onto the island from the north as early as 10:00 a.m., reaching one- to four-mile backups during peak season. Traffic during these times slows to a walking pace.

Estero Boulevard has no clear sense of place, uniformity, or identity. It also lacks opportunities to support social and civic events, which are necessary to transform it into the island's premier public space.

Estero Boulevard Has Great Potential

The time to begin transforming Estero Boulevard is now. The community deserves an inviting tropical village atmosphere—a place of beauty that is restful, comfortable, welcoming, and serene. Estero Boulevard has the potential to become the premier place on the island—the single element that can unify and bring character to the Town. It has a successful mix of retail, civic, and residential uses. It is rich in "ma and pa" retail shops; new and older franchise stores; affordable, fun housing and hotels; and moderate to upscale condominiums. This mix of uses is the basis for the opportunity of human interaction—for people to enjoy and use the street's environment.

The community's commitment to maintain Estero Boulevard as a two-lane corridor enhances the ability to create a pedestrian-friendly environment; a place where people feel welcome and safe to walk down the street. Land available for public improvements varies along the seven-mile corridor. This offers the perfect opportunity to design different solutions to capture the community's diverse characteristics. For instance, some segments were designed to urban standards and include street trees in grates along a wide sidewalk. Other segments accommodate beautifully landscaped medians.

Most notably, Estero Boulevard has great potential because its residents, Town Council, and Town staff are committed to improving the street, to move the Town forward rather than being satisfied with the status quo. The community wants to be involved, and that is the cornerstone for supporting efforts as complex as this one.

Achieving a New Reality

The Town is young, enterprising, and ready to invest energy and funds to improve its village life. Residents understand that together, they can realize this vision of "remaking" Estero Boulevard. The time is right for implementing this

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vision and attracting new local and regional investors to help make the vision a reality.

STREETSCAPE MASTER PLAN

The goal of this *Streetscape Master Plan* is to implement the vision established by the Town residents and as outlined in the *Comprehensive Plan*. The Streetscape *Master Plan* recreates Estero Boulevard into a pedestrian-friendly street by using innovative techniques in streetscape design to add more greenery, shade, and walkways; to calm traffic; to improve trolley access; and to develop safer methods for pedestrians to cross the street. The *Streetscape Master Plan* creates an enjoyable tropical sense of place, bringing added value to the street and to the community as a whole.

Innovative techniques in streetscape design deliver the results that the community wants for a safer, more beautiful Estero Boulevard.

The developed and approved design solutions presented here implement the *Comprehensive Plan's* objectives related to Estero Boulevard. To help achieve its goal, the study effort focused on methods to recreate Estero Boulevard into a healthy, appealing form; to keep traffic in motion; and to generate a clean, attractive, walkable, welcoming environment. The conceptual designs presented as part of the *Streetscape Master Plan* are ready to be refined into design development plans.

The Process

In mid-November 1999, Town residents participated in a series of workshops during which they offered valuable insight to help develop the *Streetscape Master Plan*. The goal of these workshops was to identify and address issues, collect and prioritize the community's "wish list," and begin identifying the elements that eventually would be included in the final *Streetscape Master Plan*. *The Charrette Summary Report* (February 2000) summarizes the design concepts that were gathered during ten days of work, fun, and creativity. More than 200 people worked together to breathe new life, color, safety, and efficiency into an overall design theme for this corridor—to create *their* Estero Boulevard.

The charrette process achieved a remarkable degree of community consensus and provided an effective forum to explore the planning and design ideas that helped shape the design solutions that have been incorporated into the *Streetscape Master Plan.* Workshop participants identified the elements that Estero Boulevard must have in order to transform it—the true heart of the Town—into a more attractive, functional, safe, and enjoyable place to work, live, shop, and be entertained. Developed properly, Estero Boulevard will function as a center of public activity; provide access to residences, businesses, services, and entertainment; and provide better linkages to parks and open spaces. The redesigned street will provide new opportunities for social interaction. The designs that the community helped create will significantly improve mobility along Estero Boulevard by providing increased opportunities to walk, bicycle, and use the trolley. It also will relieve some of the single occupant vehicle trips that contribute toward the daily traffic congestion along this corridor.

Community Recommendations

General recommendations from the charrette participants included the following:

- Make Estero Boulevard pedestrian friendly
- Create greatly improved conditions for walking along and crossing the street
- Create functional travel ways for bicyclists
- Reduce dependency on automobile
- Balance the needs between residents and businesses
- Improve and better manage traffic

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conditions throughout the corridor
- Improve trolley services and create fun places to wait
- Improve Americans with Disabilities Act (ADA) access throughout the corridor
- Incorporate curbs to improve drainage
- Segment Estero Boulevard for different solutions—do not create a single design for the entire corridor
- Improve safety in the corridor
- Improve efficiency of automobile, bicycle, and pedestrian movements to reduce congestion
- Reduce traffic speeds at the South End
- Bury overhead utility lines

Additional Safety and Transit Elements

To include the appropriate safety and transit elements throughout the design, additional interviews with emergency services providers and trolley service providers were conducted.

The emergency services providers stressed the importance of their four-minute response time. They believe the best way to accomplish this goal is to maintain Estero Boulevard's existing center turn lanes. In those areas where the center turn lane does not exist, they suggest travel ways be at least 19 feet in width to accommodate areas for emergency vehicles to pass through traffic. Emergency services providers also suggested that enhancing the visibility of crosswalks should be a priority.

Designs to accommodate emergency access maintain a safe environment.

The trolley drivers suggested the need for more trolley pull-off areas and better management of pedestrian movements. The greatest challenges facing trolley drivers include merging into traffic, staying on schedule, and managing conflicts with bicyclists. The drivers also agreed that crosswalks need to be visually enhanced for the benefit of motorists, bicyclists, and pedestrians.

The Next Step

The next step to recreating Estero Boulevard involves identifying existing conditions, developing design objectives/ criteria and alternatives, and developing the recommended designs. Section 2—Estero Boulevard Today, discusses existing conditions, design criteria, and design analysis of each segment. Section 3—Design Solutions, explores the elements involved in the design solutions and presents the selected option for each of the six roadway segments. Section 4—Implementation Strategies, identifies the recommended steps and strategies that the Town should consider in order to implement the adopted designs.

Estero Boulevard Today

Section 2—Estero Boulevard Today

Existing Conditions

As discussed in the *Existing Conditions Report* (November 1999), Estero Boulevard supports a variety of the Town's functions. The corridor is the sole link onto and off of the island. New stores, lodging, condominiums, and single family housing; increased tourism; lack of schools and other institutions; and other land use demands all contribute to increased traffic along Estero Boulevard. In addition, recreational "cruising" adds to the traffic volumes, especially during evenings, weekends, and during a variety of island events. In recent years, residents and visitors have come to view Estero Boulevard as a graying, wide, ragged, puddle-lined, pole-lined, hot, roadway that is harsh on pedestrians, bicyclists, and motorists alike.

Ownership

Three different agencies have jurisdiction over portions of Estero Boulevard:

- Lee County maintains most of Estero Boulevard
- The Town maintains the section of Estero Boulevard north of San Carlos Boulevard (the North End)
- The state maintains Matanzas Pass bridge to the pedestrian signal

Existing Roadway System

Estero Boulevard is the only roadway that traverses the entire length of the island. Local streets access the rest of the island from points along Estero Boulevard. Two bridges provide the transportation links to each end of the island. The Matanzas Pass bridge at the north end near Times Square connects San Carlos Island to the mainland. The Big Carlos Pass bridge at the south end of the island connects to Bonita Beach.

Roadway Width and Lane Arrangement

As identified in the table below, the right-of-way width and lane arrangement varies in each of the six segments.

Roadway Segment	Right-of-Way Width	Lane Arrangement
North End	60 feet	11-foot travel lanes
Core Area	50 feet	11-foot travel lanes 12-foot center turn lane
Civic Complex	50 feet	11-foot travel lanes 12-foot center turn lane
Quiet Center	65 feet	11-foot travel lanes 12-foot center turn lane Transitions to 12-foot travel lanes 5-foot paved shoulders
High Rise Resort	85-100 feet	11-foot travel lanes 12-foot center turn lane
South End	85-100 feet	12-foot travel lanes 5-foot paved shoulders

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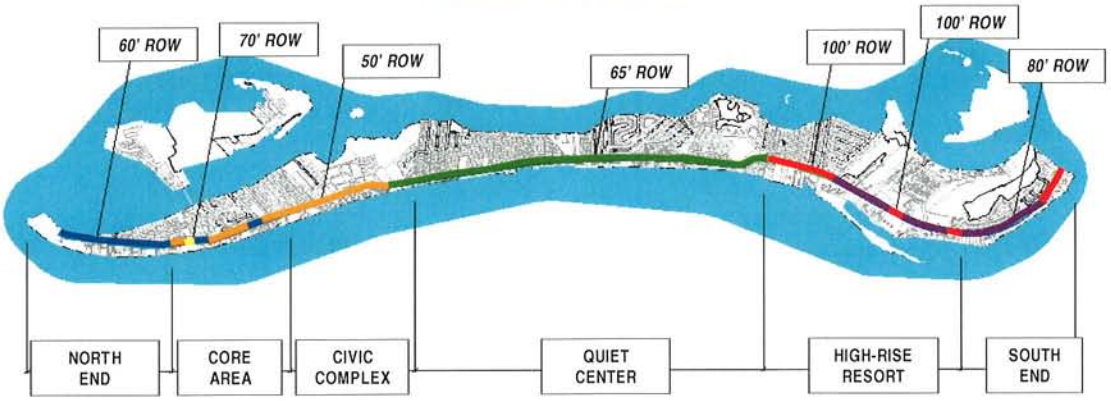
Right-of-Way Index



Traffic Volumes

Traffic volumes vary along Estero Boulevard from a low of 8,000 vehicles/day in the North and South Ends to a high of more than 20,000 vehicles/day in the Core Area. During peak season, these figures increase approximately 12 percent. Estero Boulevard operates at or above capacity from the Quiet Center to the South End during the peak season.

Estero Boulevard is heavily congested in the Core Area and Civic Complex during season. These areas are characterized by a narrow 50-foot right-of-way, a lack of access management, backout/pull-in parking, and unpredictable pedestrian movements. The Core Area and Civic Complex generate much of the congestion that contributes to the low vehicle speed that characterizes this part of the corridor. During season, motorists can expect average speeds of 4 mph for most of the day. By nature, this low-speed area has resulted in a low crash rate for this section of the island. However, it still is important to improve traffic flow and reduce the congestion that characterizes this area. The Town's *Comprehensive Plan* does not allow four-laning the road nor adding a bridge. Therefore, developing an enhanced modal shift—that is, converting automobile traffic to pedestrian and bicycle movements—is the most feasible solution to ease traffic congestion through Estero Boulevard.

Existing Traffic Conditions

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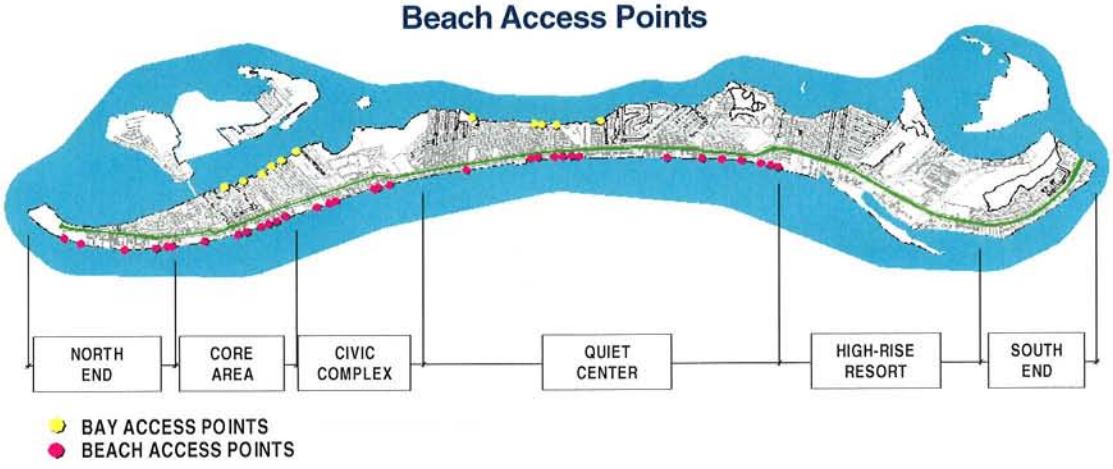
Beach Access Points



Traffic Generators

Motorists, pedestrians, and bicyclists all move toward the same attractions in the Town—shopping, entertainment, restaurants, hotels, and the beach. Estero Boulevard has more than 25 public beach access points. Motorists searching for beach parking generate a significant portion of the traffic congestion on Estero Boulevard. In addition, beach accesses offer very limited bicycle parking.

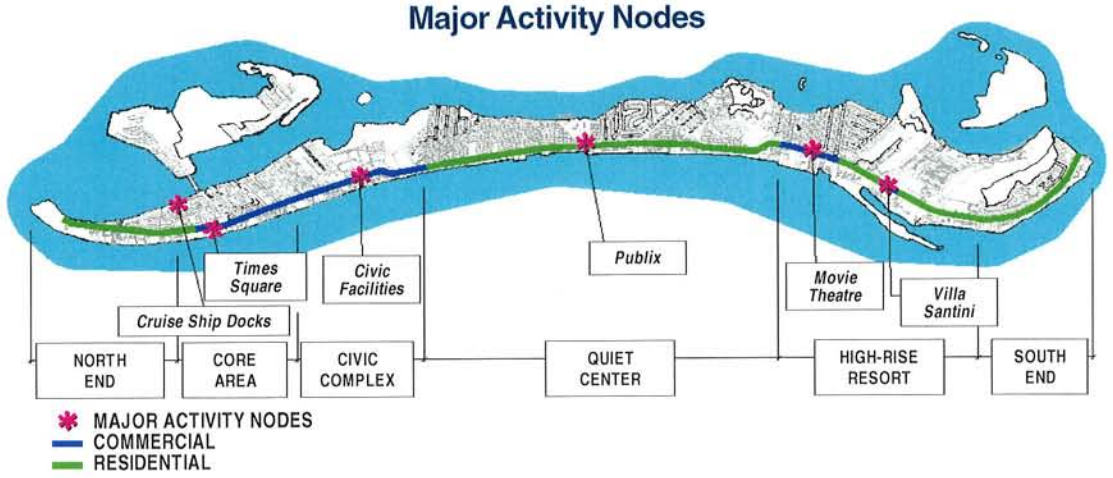
Safety

From 1997 to 1999, four intersections on Estero Boulevard were listed as high crash locations: Crescent Street, Palermo Circle, San Carlos Boulevard, and Donora Boulevard. Pedestrian and bicycle crash data from 1996 to 1999 list Palermo Street and Bay Road as the intersections with the highest crash incidents.

Drainage

North of Alva Drive through the Times Square area, Estero Boulevard has an underground storm drainage system (pipe system). A swale and pipe storm drainage system is located south of Flamingo Street. The area between Alva Drive and Flamingo Street has a poorly defined storm drainage system. For the majority of this area, stormwater runoff flows off the road onto adjacent property, generally to the east side of the road. In most cases, the runoff flows to the east down the side streets to the Matanzas Pass/Estero Bay. Additional drainage information collected during the study is included in the Appendix.

Major Activity Nodes



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Utilities

The entire length of Estero Boulevard has gravity sewer, potable water, and force mains at various locations. These utilities should be disturbed only as required to support construction of the project.

Florida Power and Light (FP&L) has aerial electric power lines the entire length of Estero Boulevard. The lines around Times Square were buried during that area's redevelopment. Telephone and cable television lines also exist along the entire length of Estero Boulevard.

TECO/Peoples Gas is expanding its transmission system to include the Town. The utility plans to extend a 4-inch line under Matanzas Pass by April 2001. A 2-inch distribution line will continue down through the Civic Complex to the Red Coconut and up through the North End to the Pink Shell. The conceptual plan is to bury the distribution lines under the sidewalk, but the final location has not yet been determined.

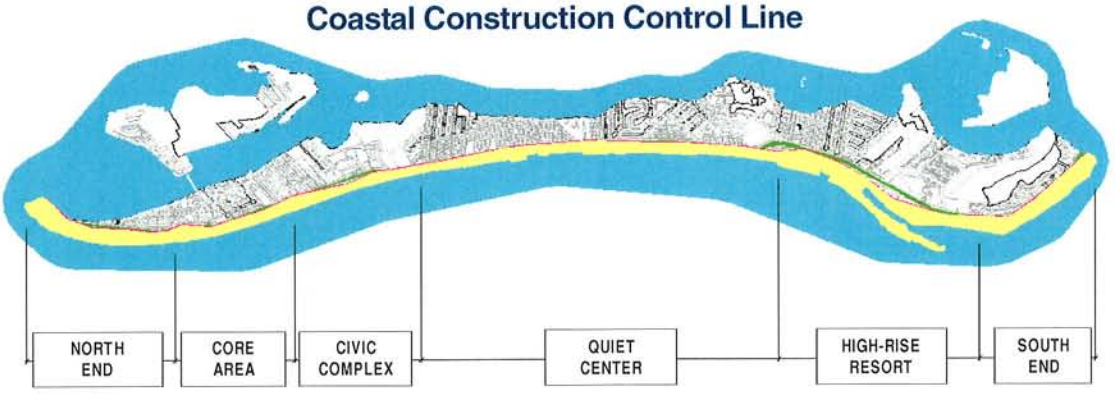
Coastal Construction Control Line

Upon reviewing the proposed project and the state Coastal Construction Control Line (CCCL) maps for Lee County, it is apparent that several areas of the project fall seaward of the CCCL. Activities in areas seaward of the CCCL will require a permit from the Department of Environmental Protection (DEP). All structures (sidewalks, shelters, etc.) that fall within the CCCL must be designed according to DEP standards. Since the project is a significant distance from any coastal dunes, DEP likely will not require that all native vegetation be planted. However, DEP recommends using salt-spray tolerant vegetation in any landscaping. In addition, the DEP may scrutinize any new lighting for its potential affect on sea turtles.

Pedestrian Facilities

Estero Boulevard has limited sidewalks throughout the corridor. In many locations, the sidewalks are very narrow, disappear through driveways, and blend into the edge of the travel lane. Sidewalks are often covered with sand (a problem created by poor drainage infrastructure) and frequently in need of repair. Puddles of water often cover portions of the sidewalks. ADA access is inadequate, and the corridor lacks places to sit, get a drink of water, and dispose of litter.

Coastal Construction Control Line



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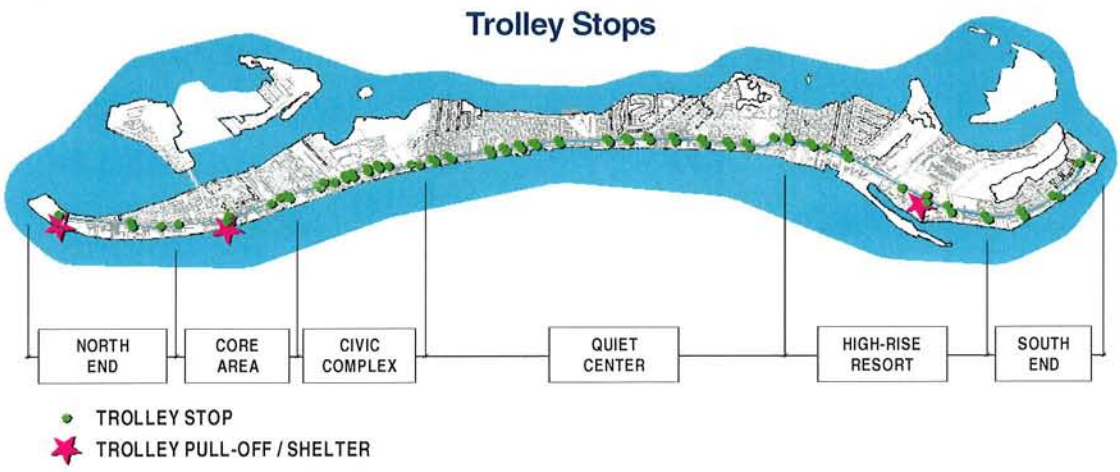
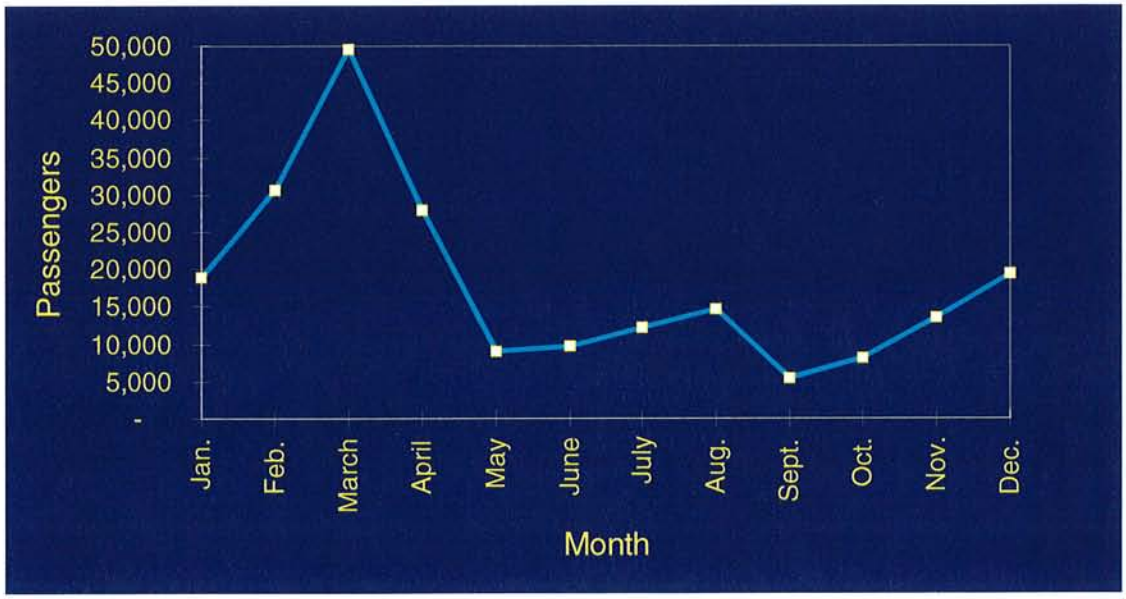


Crossing Estero Boulevard is frequently challenging, with no safe refuges for pedestrians or bicyclists crossing the street. Motorists frequently overlook or ignore the existing crosswalks, placing pedestrians at risk. Likewise, pedestrians routinely ignore the existing crosswalks and cross the street where it's convenient for them. It has been observed that uncontrolled pedestrian crossings contribute to the traffic congestion in the Core Area and Civic Complex.

Transit

Lee County Transit operates a year-round trolley system through the corridor. Four trolleys run during in-season and two run during off-season. The system currently has 81 stops. Each trolley can carry 34 passengers. While the trolley is popular, many residents and visitors consider it unreliable. The graph below reflects the dramatic increase in trolley ridership during season.

Trolley Service – Annual Ridership



Section 2—Estero Boulevard Today

Bicycle Facilities

Bicycling Estero Boulevard is difficult. Since paved shoulders throughout the corridor are inconsistent, bicyclists either share the inadequate sidewalks with pedestrians or try to share the road with motor vehicles. In addition, the area has few bicycle racks that otherwise would encourage cycling as a convenient mode of transportation.

Landscape

Landscaping along Estero Boulevard is minimal, disorganized, and arbitrary. The road has very limited shade. Existing trees, mostly palms, are located at the outside edge of the sidewalk, forcing pedestrians to walk closer to travel lanes. Frequently, the landscaping is not maintained well. Residents have expressed concern about the future maintenance of any new landscaping.

Lighting

Decorative street lights and pedestrian lights are located throughout Times Square south to the Lani Kai. The rest of Estero Boulevard has standard-issue FDOT street lights. This high vehicular-level lighting is not conducive to pedestrian comfort. The lack of pedestrian-level lighting creates shadows and unlit areas that make certain areas feel unsafe.

Street Furniture

Street furniture, such as benches, trash receptacles, and bicycle racks are limited primarily to the Times Square area. Trash receptacles and advertising-adorned benches are located at trolley stops.

Introducing Walkable Communities Principles and Elements to Estero Boulevard

One resident described Estero Boulevard today as a "chaotic, nothing street." While this may be an overstatement, it is true that most of the area lacks identity, purpose, visual continuity, and place-making. Converting this area from a mixed suburban/urban commercial district to a walkable community requires intensive change; a high level of consensus among stakeholders; and new, long-term public and private reinvestments working from the vision that the Town developed.

During the charrette, Dan Burden of Walkable Communities presented the principles of transforming Estero Boulevard into a pedestrian-friendly environment. The main points of creating a walkable community are described below.

Walking Distance

Encourage walking by ensuring that community activities are located within a quarter-mile radius development pattern. In a walkable neighborhood or center, a range of residential, leisure, commercial, and educational activities focus around a quarter-mile radius. Most people will walk up to a quarter-mile; in an attractive area, they may walk up to a half-mile. Land use must be packaged to create a variety of attractions in this quarter- to half-mile limit. It is essential to mix activities to keep this space active. Many uses (eg., leisure and commercial) may be combined in one building and on each block.

Reduced Speed

Roadway speeds along Estero Boulevard must be moderate (20-30 mph are most common). Combining sidewalks, bike lanes, edge landscaping, and medians helps convert wide roads into tame, people-focused places.

Landscaped Edges and Walkways

Sidewalks should be on both sides of the street, with landscaping on both sides of the sidewalks. In areas that support commercial shopping activities, sidewalk widths of 12-14 feet are desirable. A width of 6 feet is an absolute minimum in residential areas.

Section 2—Estero Boulevard Today

Well Connected, Easy Crossings

Designs should incorporate high levels of connectivity and areas that allow pedestrians to cross streets safely and easily. Pedestrians will travel up to 150 feet out of their way to find an easy, safe crossing point of a "main street" environment such as Estero Boulevard. Organized crosswalks are needed every 300 feet to promote these crossings. Medians and curb extensions help define an inviting and well-used crossing. When a street is overly wide and travel speeds are high, refuge islands and medians help pedestrians safely cross the street.

Pedestrian Lighting

For decades, road building agencies have viewed pedestrian-scale street lamps as frill and fluff. Today, smart communities know that they must add benches, lighting, decorative features, and other amenities to create a sense of welcome. While this can add 10-15 percent to the total cost, the community recovers that cost through increased pride, tourism, and community spirit. Streets should be viewed as a living room or front porch—leave out the furniture and decorative trim, and the house loses much of its value. The same is true for Estero Boulevard.

Meet Five Basic Human Needs

The *Estero Boulevard Streetscape Master Plan* designs must address a complement of five basic human needs:

Security. The Estero Boulevard design needs to provide for both real and perceived security. Applying Crime Prevention Through Environmental Design (CPTED) design guidelines puts many "eyes on the street." This sense of security comes from nearby buildings, an abundance of human activity, open landscaping, lighting, and other design.

Convenience. To be useful and functional, Estero Boulevard needs to provide most of the commercial needs of the community, residents, and visitors. Once motorists park their cars, they should have no need to return to their vehicle until they are ready to leave the island. People working in the retail shops and restaurants should be encouraged to walk or ride bikes to their work places, to lunch, and to run errands.

Efficiency. People seek ways to make efficient use of their time. Pedestrian efficiency fully depends on the ability to take short walks between multiple needs and services. This efficiency can be achieved along Estero Boulevard by clustering development in pedestrian pockets—a tight combination of public space, shops, work places, parking garages, and residential needs.

Comfort. Along Estero Boulevard, pedestrians should find their comfort needs met through shade; breezes; convenient store placement; buffers; benches; litter canisters; clean, conveniently located restrooms; water fountains; gardens; and other details of the built environment.

Welcome. People feel a sense of welcome when they visit an attractive, relaxing place that has been developed with close attention to detail. The "building blocks" to create a sense of welcome along Estero Boulevard include island gateway entries; colorful buildings and awnings; comfortable trolley stops; well-kept walkways; public art; screening of dumpsters, parking lots, and other elements that offend the senses; nicely landscaped streets; activities; diversity and choice; a clean, well-kept environment; and low traffic speeds.

By incorporating these five elements into the design objectives, the Town can create a successful *Estero Boulevard Streetscape Master Plan.*

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Estero Boulevard Design Criteria

To achieve a walkable community, the following design criteria were developed specifically for the *Estero Boulevard Streetscape Master Plan*. These criteria were used to evaluate each design option.

- ***Comprehensive Plan* Consistency**. The Town's *Comprehensive Plan* was reviewed carefully and used as a guide to develop recommendations. The applicable objectives and policies are attached in Appendix A.

- **Public Input**. The charrette provided a forum for the public to offer suggestions, concerns, and put pencil to paper and help develop design ideas. Following the charrette, five public presentations of the design concepts were made. The public also offered comments and suggestions during these presentations. In addition, discussions were held with emergency services providers and trolley service providers to gain their input on the design concepts.

- **Utilize Existing Right-of-Way**. All design solutions were developed on the basis of remaining within the existing right-of-way. Designing any options outside of the right-of-way would lead to the potential of condemning property, which would substantially increase the cost estimates of the improvements.

- **Design is "Traffic Neutral" or "Traffic Positive."** It was not an objective of this plan to solve the island's traffic congestion. However, the design criteria assumed that all design solutions would do no harm to the existing traffic conditions; that all solutions would be either "traffic neutral" or "traffic positive."

- **Design is Neutral or Positive to Emergency Services**. Emergency services providers discussed their response constraints and needs. These issues were carefully considered during the evaluation of each design option.

- **Enhance Pedestrian and Bicycle Safety**. Each design option considered how to best enhance the safety of pedestrians and bicyclists.

- **Improve Trolley Operations**. Each design option considered how to best improve trolley operations.

- **Enhance Landscaping**. Each design includes attractive landscaping to provide shade, create a protective edge between pedestrians and motorists, and improve the appearance of Estero Boulevard.

- **Analyze Left Turn Lanes**. Several design options that removed or changed the function of left turn lanes were developed. Each of these options was evaluated based on how they would affect emergency services providers, traffic operations, surrounding residents, and businesses.

- **Design Assumptions**. During the charrette, the community identified two elements that should be established for the entire length of Estero Boulevard: improve the drainage with curb and gutter and underground the utilities. These two elements are included in all of the design solutions.

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Design Analysis

Developing the Design Options

During the workshops, the community achieved consensus on a number of significant design issues and priorities for the projects to be included in the *Streetscape Master Plan*. The community requested that Estero Boulevard be segmented and have appropriate solutions identified and developed for each segment. To design the *Streetscape Master Plan*, the same six street segments identified in the Town's *Comprehensive Plan* were used:

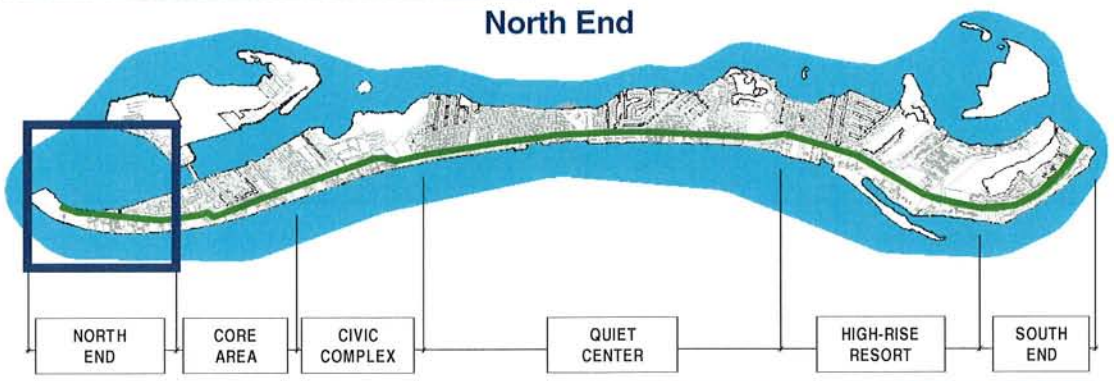
- North End
- Core Area
- Civic Complex
- Quiet Center
- High Rise Resort
- South End

Several options for each segment were evaluated to develop the design solutions. The existing conditions/challenges in each segment, the design alternatives that were presented for each segment, the design criteria in the form of pros and cons, and a summary of the options in a comparison chart are presented below. Section 3—Design Solutions discusses the design solutions adopted for each segment.

North End

Existing

At 3,885 linear feet, the North End is the shortest segment in the *Streetscape Master Plan*. It has 22 feet of pavement (two 11-foot travel lanes) in a 60-foot right-of-way. Traffic volume and speeds are low. A sidewalk follows the west side of the road and then switches to the east side, forcing pedestrians either to cross the road to stay on the sidewalk, or to walk in the street. The roadway and sidewalk edges are poorly defined. The sidewalk, driveways, and travel lanes meld together. The edge of the pavement has crumbled from years of automobile and truck traffic. Dirt, gravel, and sand cover the roadway edges and sidewalk. Bowditch Point, a public park and beach access, is the northernmost point of this segment. While Bowditch Point has no public parking, it has an existing trolley stop. Five additional beach access points are located in the North End. This segment has some shade, but the landscaping is not uniform or consistent. Street lights are FDOT standard-issue Cobra-head lights.



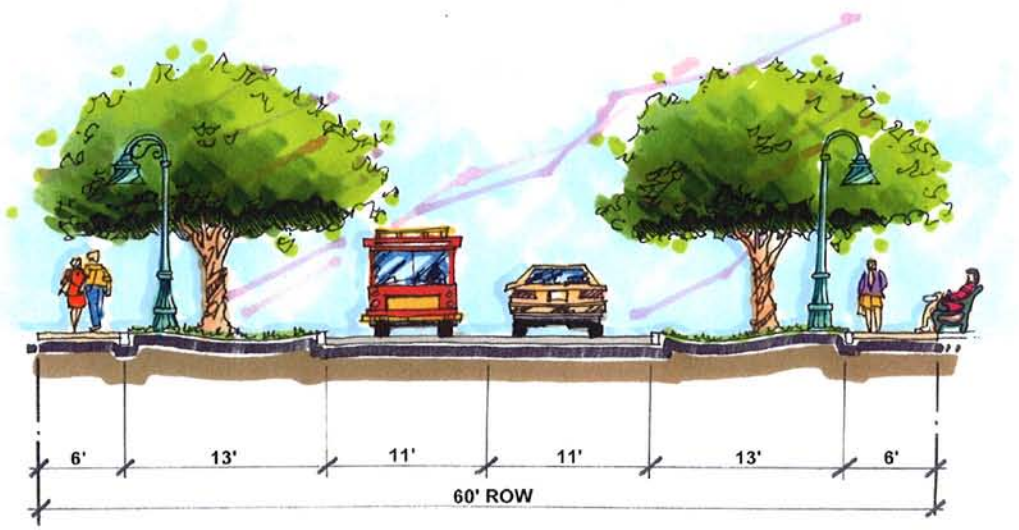
Section 2—Estero Boulevard Today

Design Options

Three options were evaluated for the North End.

Option A. Option A maintains the existing 11-foot travel lanes, provides generous 13-foot wide landscaped edges, and 6-foot sidewalks.

North End Option A
Landscape Edges/Sidewalks



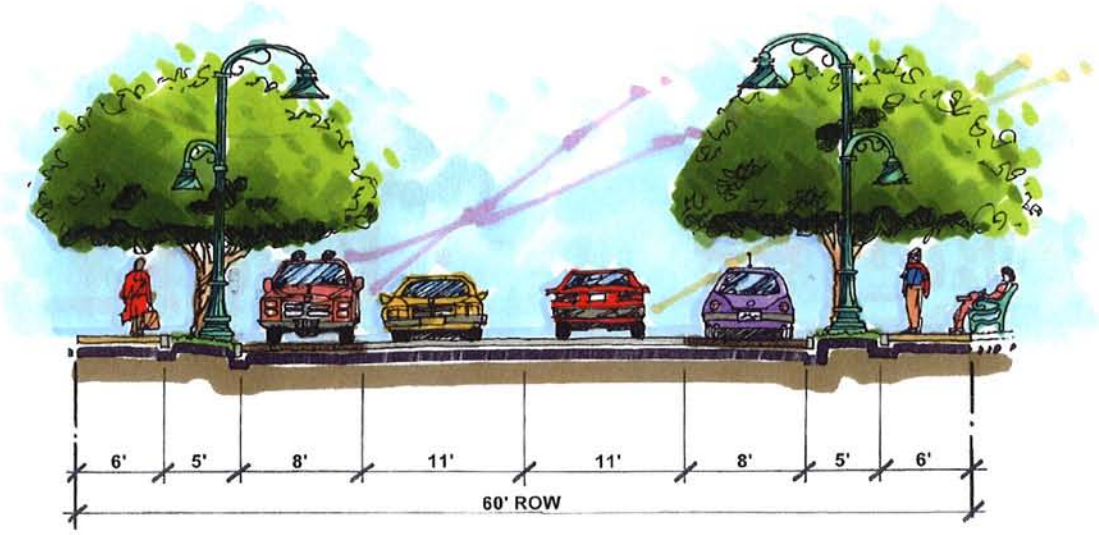
Pros
- No added street pavement
- Maximum landscape area
- Shade
- Pedestrian positive
- Traffic neutral
- Trolley neutral
- Emergency Services neutral
- Minimum cost
- Consistent with Comp Plan

Cons
- Bicycle neutral
- No additional parking

Section 2—Estero Boulevard Today

Option B. Option B maintains the 11-foot travel lanes, provides parking on both sides of the street, has adequate width for landscaped edges, and 6-foot sidewalks.

North End Option B
With Parking



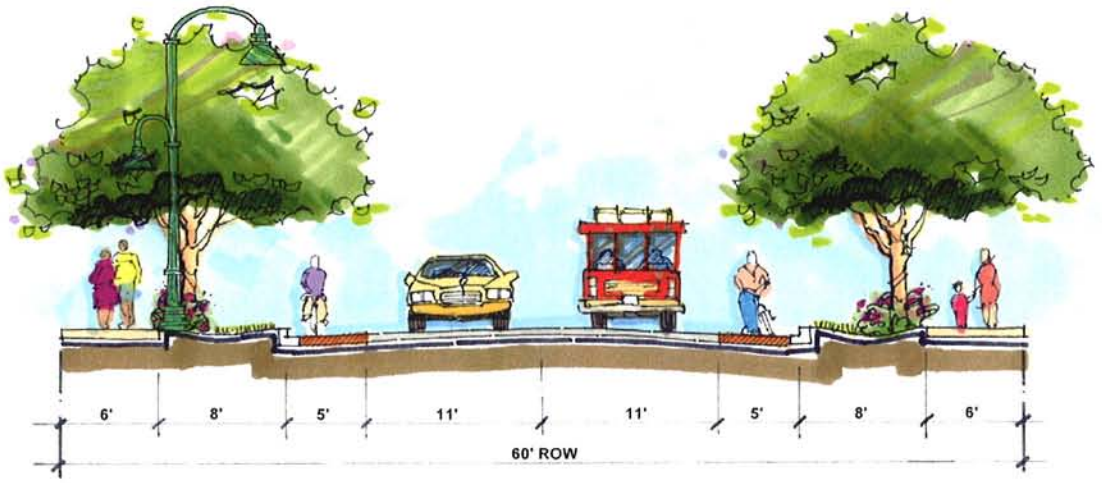
Pros
- Added public parking
- Parking revenue generator
- Pedestrian positive
- Shade
- Trolley neutral
- Emergency Services neutral
- Consistent with Comp Plan

Cons
- Added pavement
- Minimum landscape area
- Bicycle negative
- Traffic negative
- Neighborhood impacts

Section 2—Estero Boulevard Today

Option C. Option C maintains the 11-foot travel lanes, provides 5-foot colorized bike lanes, has adequate width for landscaped edges, and 6-foot sidewalks.

North End Option C
With Bike Lanes



Pros

- Bicycle positive
- Pedestrian positive
- Shade
- Trolley neutral
- Traffic positive
- Emergency Services positive
- Consistent with Comp Plan

Cons

- Added pavement
- No added parking

Section 2—Estero Boulevard Today

Comparison Matrix. While each option meets many of the design criteria, Option A does not enhance bicycle safety and Option B is viewed as "traffic negative" because it adds cars to the residential area. Because Option C meets all of the design criteria, it is selected as the design solution for the North End.

Comparison Matrix

	OPTION "A" Landscape edges / sidewalks	OPTION "B" With parking	OPTION "C" With bike lanes
Comprehensive Plan consistency	●	●	●
Utilize existing right-of-way	●	●	●
Traffic neutral or positive	●		●
Emergency Services neutral or positive	●	●	●
Enhance pedestrian safety	●	●	●
Enhance bicycle safety			●
Improve trolley operations	●	●	●
Enhance landscaping	●	●	●
Analyze left turn lanes			

Section 2—Estero Boulevard Today

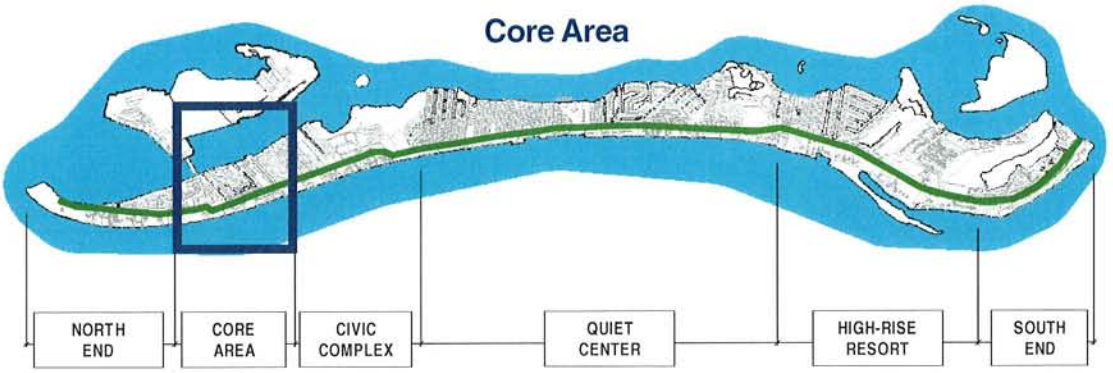
Core Area

Existing

The Core Area is 4,259 linear feet. It has the narrowest right-of-way and the most congestion on the island. It has 32 feet of pavement (two 10-foot travel lanes and a 12-foot center turn lane) in a 50-foot right-of-way. On the west side (beach side) from Times Square to the Lani Kai, the 10-foot sidewalk is made of colorful pavers. Even at 10 feet, the width of the sidewalk is inadequate during peak season, as pedestrians can be seen overflowing into the street. The width of the concrete sidewalk on the east side varies. The edges are poorly defined; driveways predominate in many areas. The Town's only pedestrian signal is located in Times Square. In season, the pedestrian signal is turned off during part of the peak hours (11 a.m. to 4 p.m.). A volunteer crossing guard helps pedestrians cross the road and helps manage the flow of traffic in this congested area. When the crossing guard leaves at 4 p.m., pedestrians begin using the signal and interrupt/stop the northbound traffic flow. Other crosswalks in the area have standard markings (paint/signs).

The Core Area is densely settled with intense commercial and hotel uses. Nearly all properties have individual driveways. This lack of access management necessitates the existing center turn lane. The area's high density and intense activity increase pedestrian traffic. A major activity node is located around the intersection of Estero Boulevard, Crescent Street, and Fifth Avenue. Lynn Hall Memorial Park offers beach access and public parking. The Core Area has four additional beach accesses.

Trolley stops are numerous in the Core Area. Palm trees planted in tree grates along the back of the sidewalk provide limited shade. Street lights and pedestrian lights were installed as part of the redevelopment of Times Square.



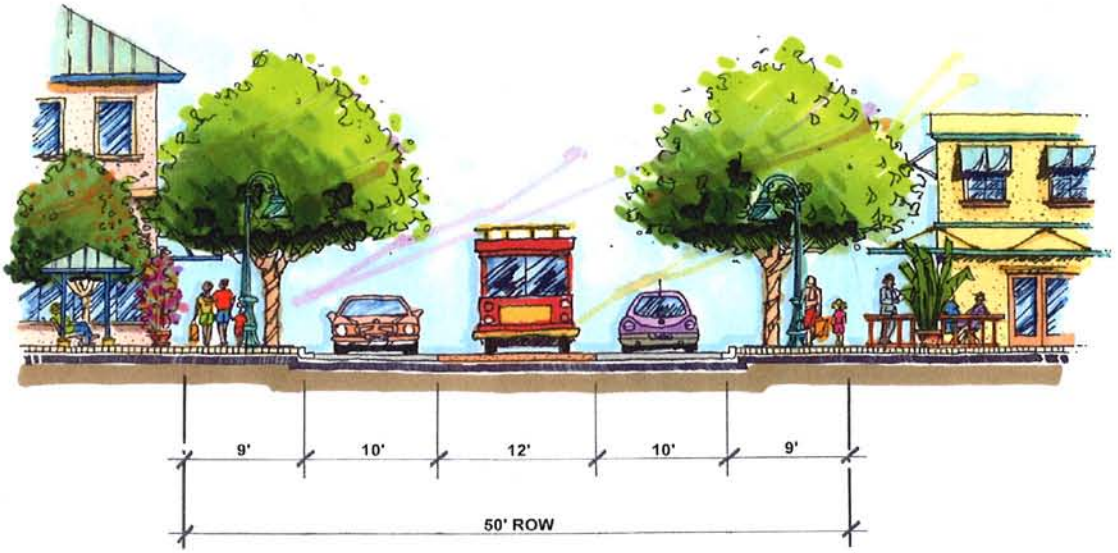
Section 2—Estero Boulevard Today

Design Options

Four design options were evaluated for the Core Area.

Option A. Option A includes 10-foot travel lanes, a 12-foot center multipurpose lane, and 9-foot sidewalks. The multipurpose lane allows motorists to make left turns. It also allows the trolleys to traverse the area.

Core Area Option A
Multipurpose Lane – Center



Pros

- Trolley positive
- Emergency Services positive
- Sidewalks both sides
- Shade
- Maintains left turn
- Consistent with Comp Plan

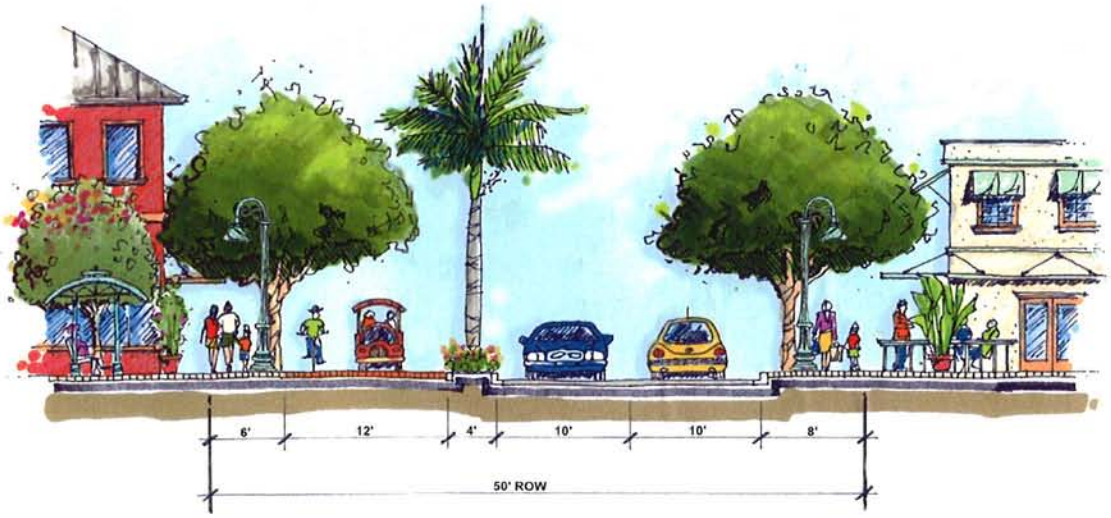
Cons

- Impacts deliveries
- Passing issues
- Bicycle neutral
- Traffic negative
- Trolley passenger unloading
- Liability issues
- Uniform traffic manual

Section 2—Estero Boulevard Today

Option B. Option B includes 10-foot travel lanes, a 12-foot dedicated trolley lane on the west (beach) side of the road, a 4-foot median separator between the travel lanes and trolley lane, an 8-foot sidewalk on the east side of the road, and a 6-foot sidewalk on the west side of the road.

Core Area Option B
Multipurpose Lane – Side



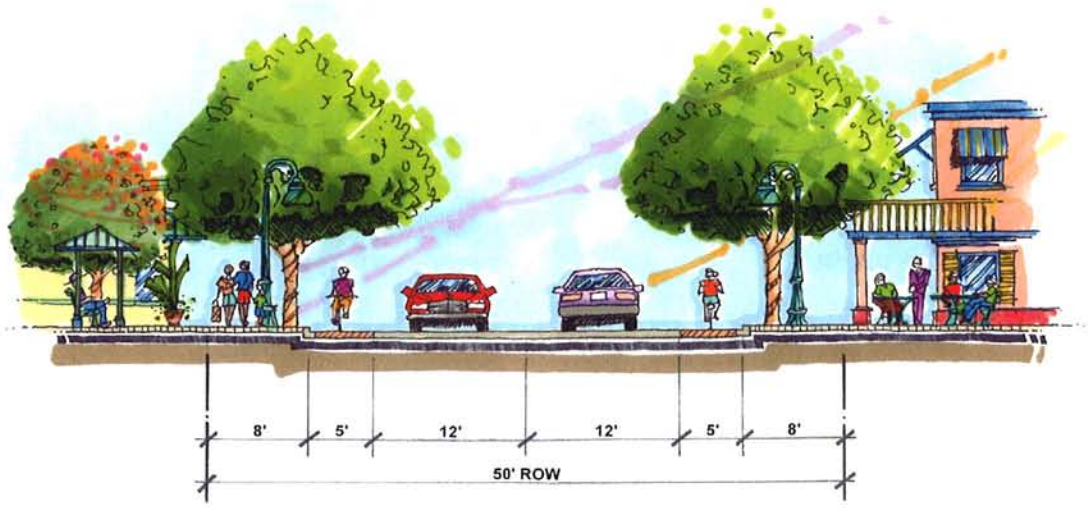
Pros
- Trolley positive
- Sidewalks both sides
- Pedestrian positive
- Bicycle positive
- Shade
- Consistent with Comp Plan

Cons
- Traffic negative
- Passing issues
- Emergency Services / trolley moving in "perceived" wrong direction
- Emergency Services negative
- New trolley type required
- Liability issues

Section 2—Estero Boulevard Today

Option C. Option C includes 12-foot travel lanes, 5-foot colorized bike lanes, and 8-foot sidewalks.

Core Area Option C
Two Lane



Pros

- Shade
- Increased pedestrian capacity
- Bicycle positive
- Consistent with Comp Plan

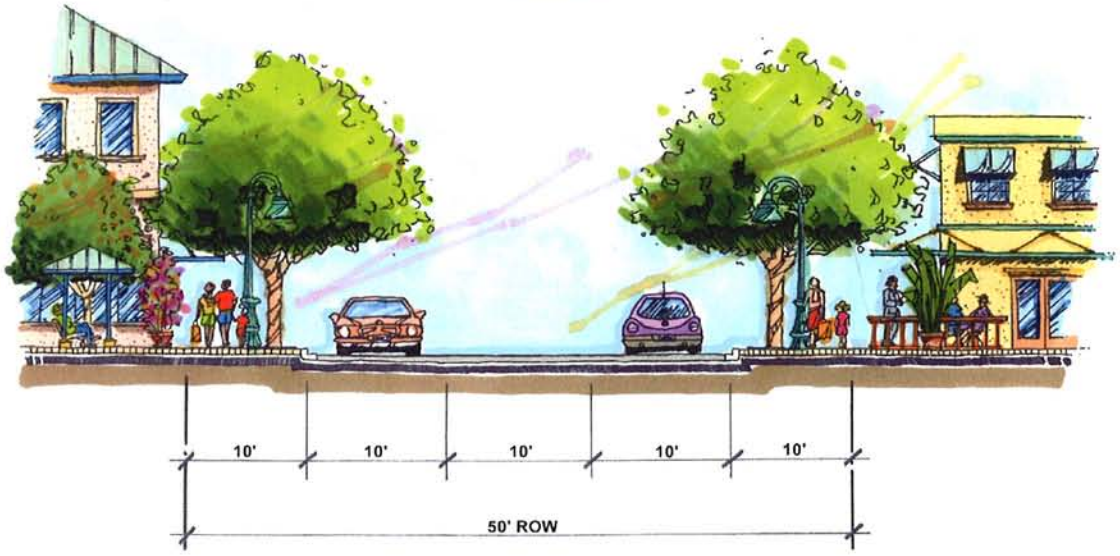
Cons

- Emergency Services negative
- Traffic negative
- Pedestrian unfriendly
- Greater accident potential
- Loss of residents' flexibility
- No crosswalk refuge

Section 2—Estero Boulevard Today

Option D. Option D includes 10-foot travel lanes, a 10-foot center turn lane, and 10-foot sidewalks.

Core Area Option D
Three Lane



Pros

- Emergency Services positive
- Traffic neutral
- Pedestrian positive
- Curb defines edge
- Access remains the same
- Shade
- Implements Comp Plan

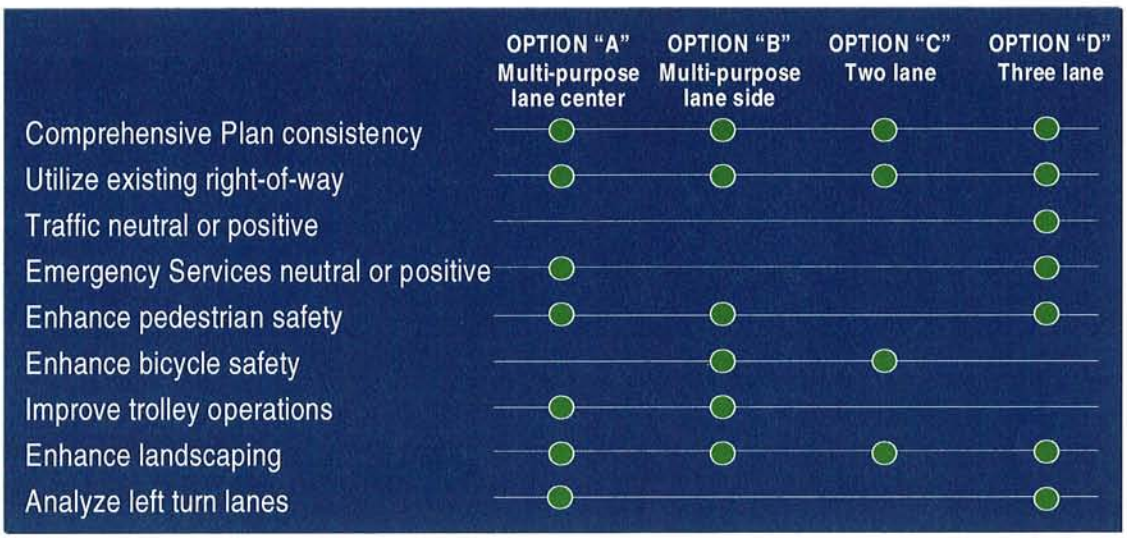
Cons

- Pedestrian / bicycles share space
- Bicycle neutral
- Trolley neutral

Section 2—Estero Boulevard Today

Comparison Matrix. Each option meets several of the design criteria. However, Options A, B, and C negatively affect traffic as they encroach or eliminate the center turn lane. The commitment to do no harm to the current traffic conditions eliminates Options A, B, and C as viable design solutions. Therefore, Option D is selected as the design solution for the Core Area.

Comparison Matrix



Section 2—Estero Boulevard Today

Center Street/Fifth Avenue Master Plan

As a supplement to the overall *Estero Boulevard Streetscape Master Plan* work, the potential for developing a gateway at the Center Street/Fifth Avenue intersection was explored. The *Center/Fifth Master Plan* was intended to examine the possible design alternatives that could be implemented at the foot of the Matanzas Pass bridge at the north end of Estero Boulevard.

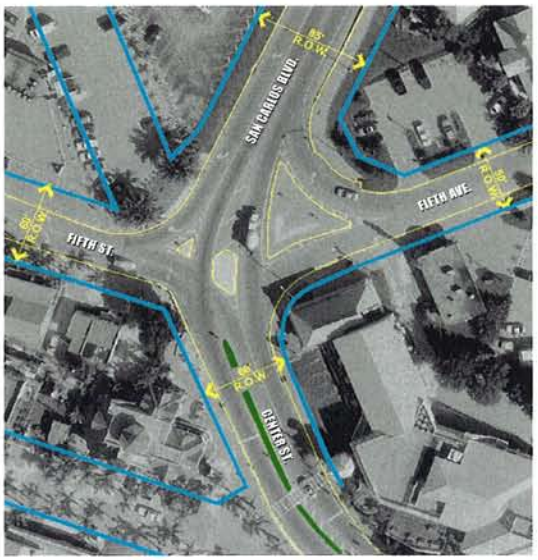
The design criteria included those discussed earlier as well as several specific objectives that were unique to the intersection:

- Permitting all turning movements at the intersection (presently a number of left turns are prohibited)
- Minimizing any increased delay as a result of allowing turning movements at the intersection
- Reducing the circuitous travel path now required for some motorists leaving the island to travel north over the bridge
- Increasing opportunities for landscape and beautification treatments (the "gateway" concept)
- Examining the pedestrian/traffic flow conflicts in the Time Square area
- Developing design alternatives to help manage pedestrian movements

To develop the *Center/Fifth Master Plan*, detailed traffic volume data (24-hour and peak hour turns), crash statistics, and pedestrian movement data were collected. Eight hours of videography facilitated the analysis of the various alternatives, especially those involving pedestrian movements. The following three design alternatives were developed for analysis:

Option A. The status quo alternative—leave the existing two-way stop control in place (no attempt to add turning movements was made to this alternative).

Option A
Status Quo



Pros
- *Minimize delays*
- *Operations and maintenance*
- *Fewer conflict points*
- *Cost*

Cons
- *Restricted movements*
- *Side street access*
- *More pedestrian conflicts*
- *No gateway*
- *Does not further FMB Comp Plan*

Section 2—Estero Boulevard Today

Option B. The fully signalized intersection improvements, including adding the appropriate turn lanes.

Option C. A roundabout, including the appropriate approach lane modifications and continuous "by-pass" lanes as appropriate.

summaries. In addition, several computer simulations of the roadway network were performed to analyze how pedestrians affect the traffic flow and to analyze the ability of "heavy vehicles," including the Town's Fire Control District's largest vehicle, to navigate the roundabout alternative.

Option B
Signalization

Pros
- All movements allowed
- Side street access
- Coordination
- Adaptability

Cons
- Delays
- Highest number of conflict points
- Operations and maintenance
- ROW consumed
- No gateway
- Inconsistent with FMB Comp Plan

Option C
Roundabout

Pros
- Allows all movements
- Reduced delay
- Safety
- Minimize operations / maintenance
- Cost
- Gateway
- Implements FMB Comp Plan policies

Cons
- Unfamiliar
- Operational issues
- Cost

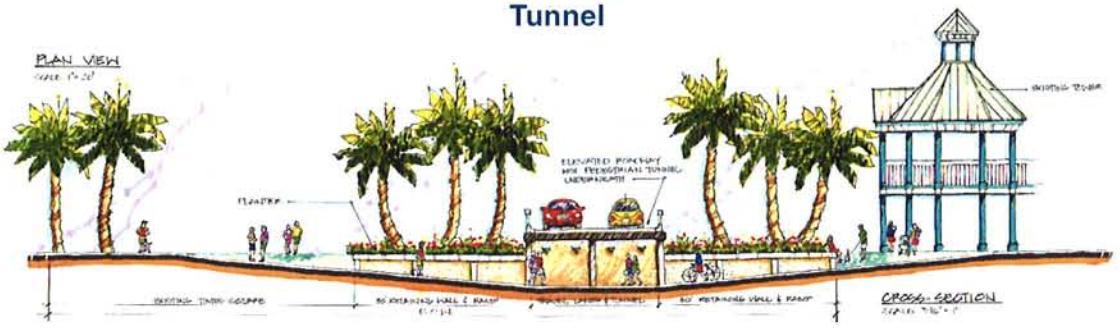
All of the alternatives were analyzed with the most recently available computer software. The Appendix includes the *Roundabout Justification Study*, consistent with FDOT guidelines; a detailed *Estero Boulevard Roundabout Design Report*; as well as level of service performance evaluations and all analysis details and

Section 2—Estero Boulevard Today

Pedestrian movement conflicts in the Times Square area were identified and three design alternatives were developed:

Option A. A pedestrian tunnel.

Option A
Tunnel



Pros
- Minimal auto / pedestrian conflicts

Cons
- Realign / raise road
- Parking / access / trolley stop impacts
- Perceived security issue
- Loss of pedestrian visual connection
- Probable pedestrian / auto conflicts shift
- Potential area economic impacts
- Ongoing maintenance / potential flooding
- Major financial investment
- Inconsistent with FMB Comp Plan

Option B. A pedestrian overpass.

Option B
Pedestrian Overpass

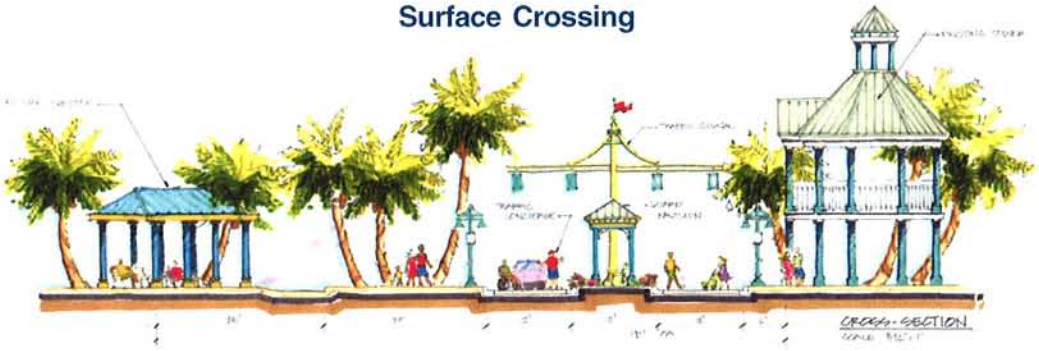
Pros
- Minimal auto / pedestrian conflicts
- Public gathering place / opportunity
- Architectural "gateway" opportunity
- Implements FMB Comp Plan policy

Cons
- People will not use it
- Pedestrian / auto conflicts remain
- Business visibility impacts
- Public / private partnership required
- Major financial investment
- Liability issues

Section 2—Estero Boulevard Today

Option C. At-grade improvements intended to channel pedestrian movements and restrict pedestrian/vehicle conflicts.

Option C
Surface Crossing



Each design alternative was examined in detail using a variety of criteria, including:

- Impact on the roadway and surrounding lands (road grade change, driveway closures, lost parking, etc.)
- Potential for utilization (would pedestrians actually use the alternative)
- Likelihood that existing or new conflicts would remain

Pros
- *People will use it*
- *Reinforces pedestrian environment*
- *Low vehicular speed*
- *Short crossing distance*
- *Maintains pedestrian access to area*
- *Minimal financial investment*
- *Crossing guard improves traffic flow*
- *Gateway opportunity*
- *Implements FMB Comp Plan policies*

Cons
- *Probable pedestrian / auto conflicts*
- *Maintenance of crossing guard program*
- *Impaired "sight line" location*

Section 2—Estero Boulevard Today

Civic Complex

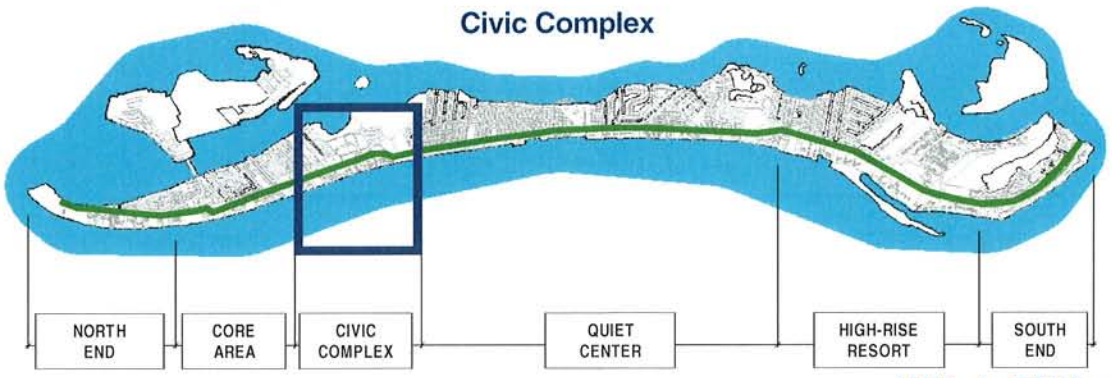
Existing

The Civic Complex is 4,412 linear feet. Like the Core Area, it is densely developed. It has 32 feet of pavement (10-foot travel lanes and a 12-foot center turn lane) in a 50-foot right-of-way. The numerous driveway connections to Estero Boulevard require that the center lane continue through this area. A sidewalk is located along the east side (Bay side) of the road. The edges are poorly defined, with no definition between the edge of the travel lane, the sidewalks, and driveways. The sidewalks are covered with sand and frequently collect puddles of water. Crosswalks have standard markings (paint/signs).

An activity node forms around the Town Hall, Topps grocery store, and the library. The Civic Complex area has seven beach access points. The area has no landscaping to provide shade. Street lights are the FDOT standard-issue Cobra-head lights.

Design Options

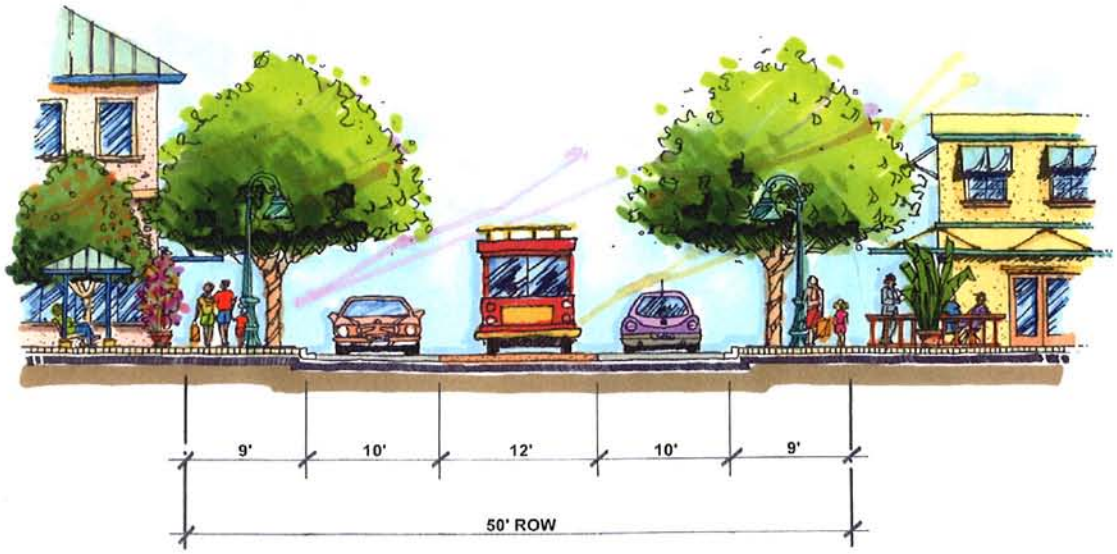
The Civic Complex has many of the same conditions as the Core Area: the 50-foot right-of-way, the same traffic congestion issues, and high pedestrian volumes. Therefore, the four options that were developed for the Core Area also were used in the Civic Complex.



Section 2—Estero Boulevard Today

Option A. Option A includes 10-foot travel lanes, a 12-foot center multipurpose lane, and 9-foot sidewalks. The multipurpose lane allows motorists to make left turns. It also allows trolleys to traverse the area.

Civic Complex Option A
Multipurpose Lane – Center



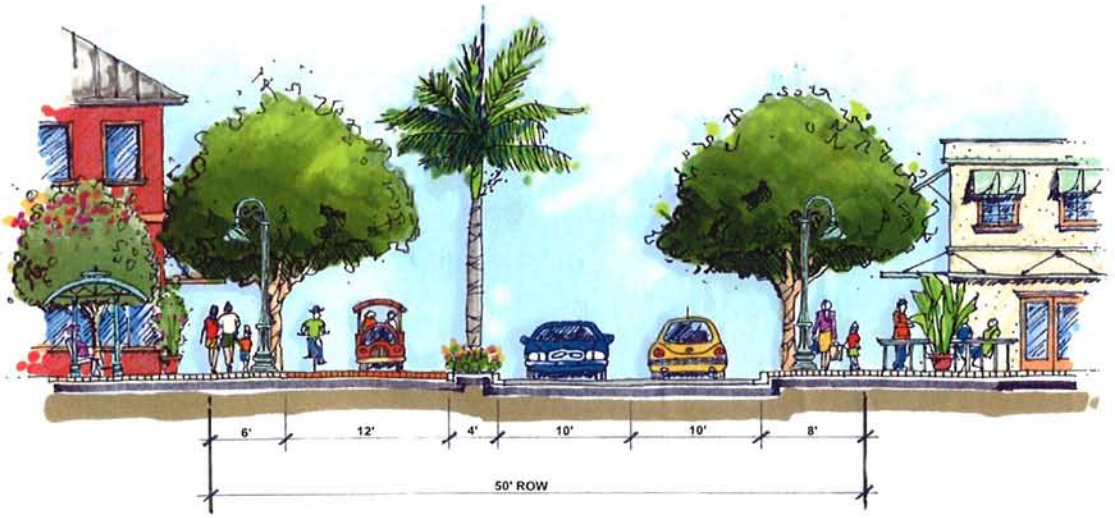
Pros
- Trolley positive
- Emergency Services positive
- Sidewalks both sides
- Shade
- Maintains left turn
- Consistent with Comp Plan

Cons
- Impacts deliveries
- Passing issues
- Bicycle neutral
- Traffic negative
- Trolley passenger unloading
- Liability issues
- Uniform traffic manual

Section 2—Estero Boulevard Today

Option B. Option B includes 10-foot lanes, a 12-foot dedicated trolley lane on the west (beach) side of the road, a 4-foot median separator between the travel lanes and trolley lane, an 8-foot sidewalk on the east side of the road, and a 6-foot sidewalk on the west side of the road.

Civic Complex Option B
Multipurpose Lane – Side



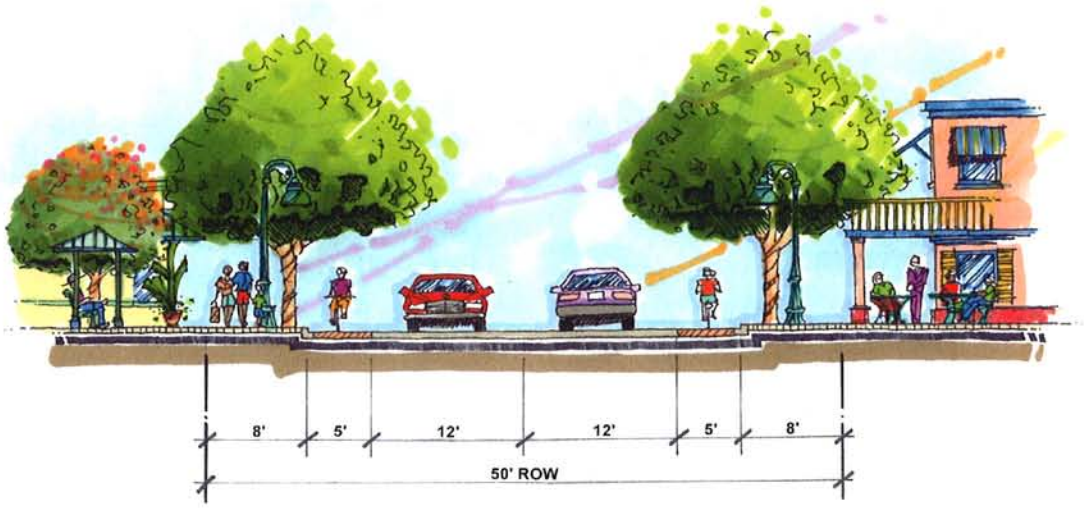
Pros
- Trolley positive
- Sidewalks both sides
- Pedestrian positive
- Bicycle positive
- Shade
- Consistent with Comp Plan

Cons
- Traffic negative
- Passing issues
- Emergency Services / trolley moving in "perceived" wrong direction
- Emergency Services negative
- New trolley type required
- Liability issues

Section 2—Estero Boulevard Today

Option C. Option C includes 12-foot travel lanes, 5-foot colorized bike lanes, and 8-foot sidewalks.

Civic Complex Option C
Two Lane



Pros

- Shade
- Increased pedestrian capacity
- Bicycle positive
- Consistent with Comp Plan

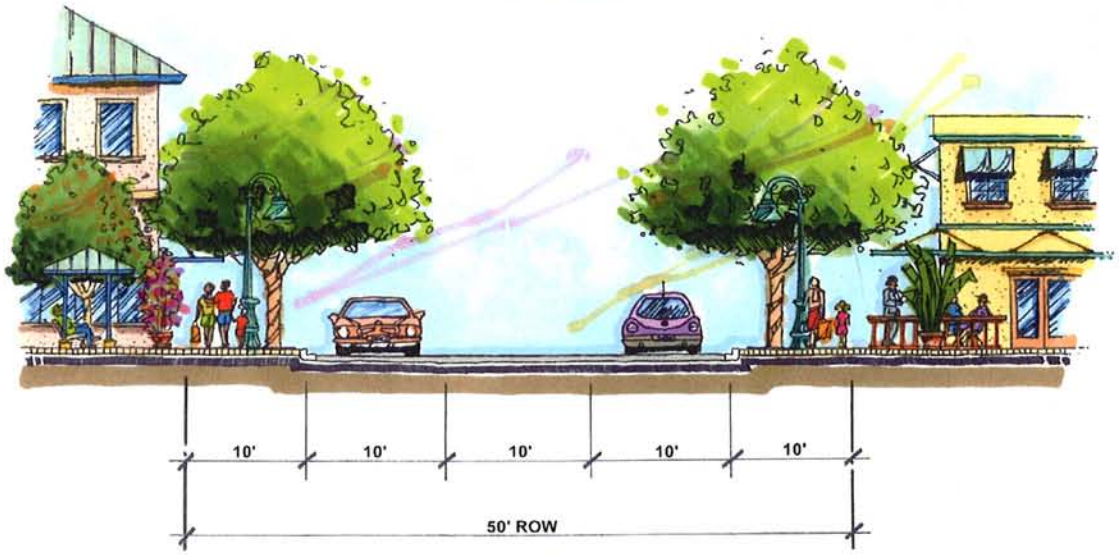
Cons

- Emergency Services negative
- Traffic negative
- Pedestrian unfriendly
- Greater accident potential
- Loss of residents' flexibility
- No crosswalk refuge

Section 2—Estero Boulevard Today

Option D. Option D includes 10-foot travel lanes, a 10-foot center turn lane, and 10-foot sidewalks.

Civic Complex Option D
Three Lane



Pros

- Emergency Services positive
- Traffic neutral
- Pedestrian positive
- Curb defines edge
- Access remains the same
- Shade
- Implements Comp Plan

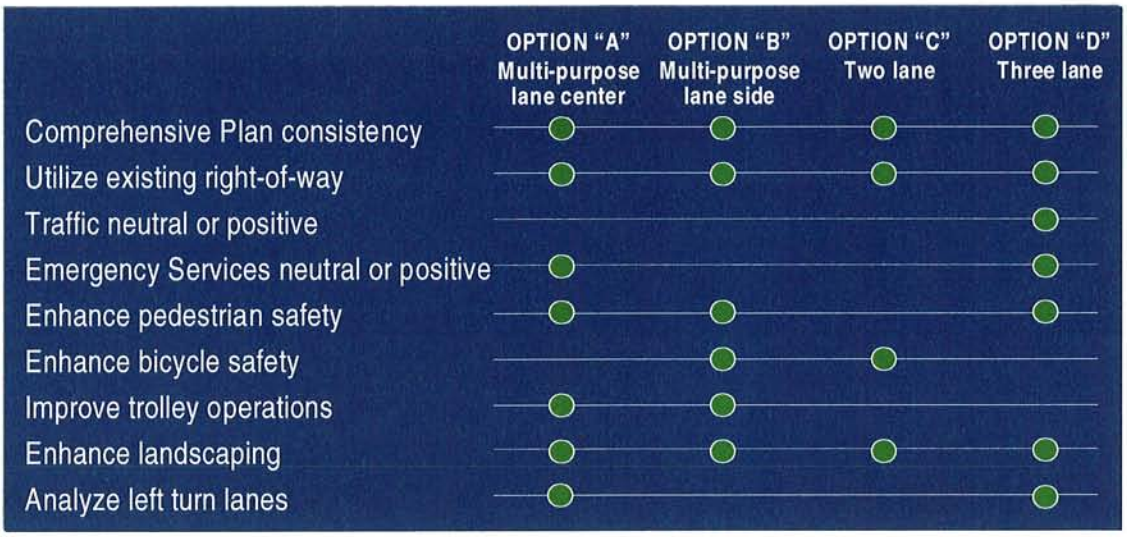
Cons

- Pedestrian / bicycles share space
- Bicycle neutral
- Trolley neutral

Section 2—Estero Boulevard Today

Comparison Matrix. Each option meets several of the design criteria. However, Options A, B, and C negatively affect traffic as they encroach or eliminate the center turn lane. The commitment to do no harm to the current traffic conditions eliminates Options A, B, and C as viable options. Therefore, Option D is selected as the design solution for the Civic Complex.

Comparison Matrix



Section 2—Estero Boulevard Today

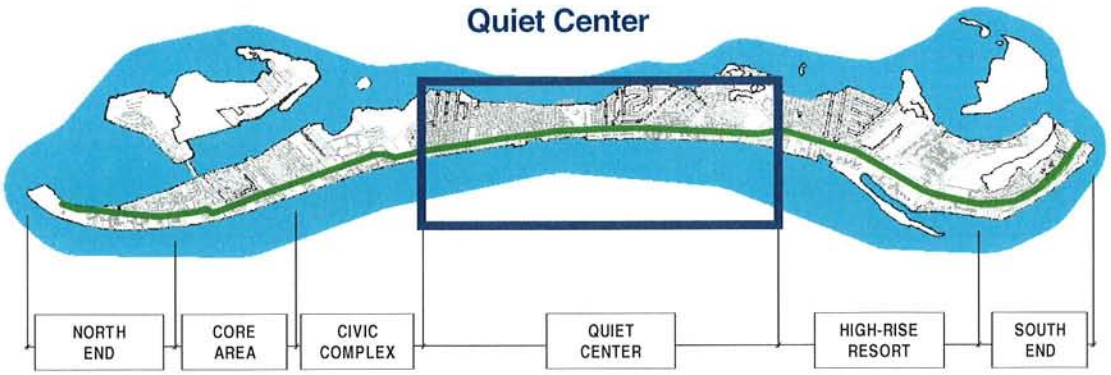
QUIET CENTER

Existing

At 11,979 linear feet, the Quiet Center is the longest segment in the *Streetscape Master Plan*. It is primarily a single family residential area. It has 32 feet of pavement in a 65-foot right-of-way. The center turn lane continues from the Civic Complex into the Quiet Center for a short distance before the roadway becomes two lanes with paved shoulders. The east side of the road has a poorly maintained sidewalk with poorly defined edges.

This segment has several trolley stops. Crosswalks are marked with white paint and standard pedestrian crossing signs at beach access points. Landscaping adjacent to the right-of-way is not uniform. Lighting is FDOT standard-issue Cobra-head street lights.

A Publix store is currently under construction. When complete this year, it will form an activity node within the Quiet Center, bringing the area more automobile, pedestrian, and bicycle traffic.



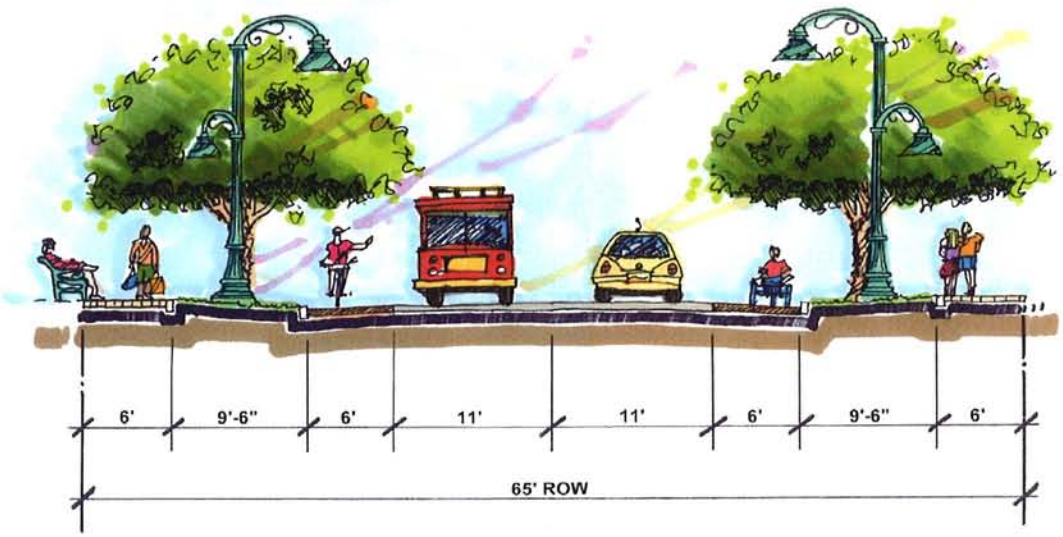
Section 2—Estero Boulevard Today

Design Options

Two options were evaluated for the Quiet Center.

Option A. Option A includes 11-foot travel lanes, 6-foot colorized bike lanes, 9½-foot landscaped edges, and 6-foot sidewalks.

Quiet Center Option A
Two Lanes



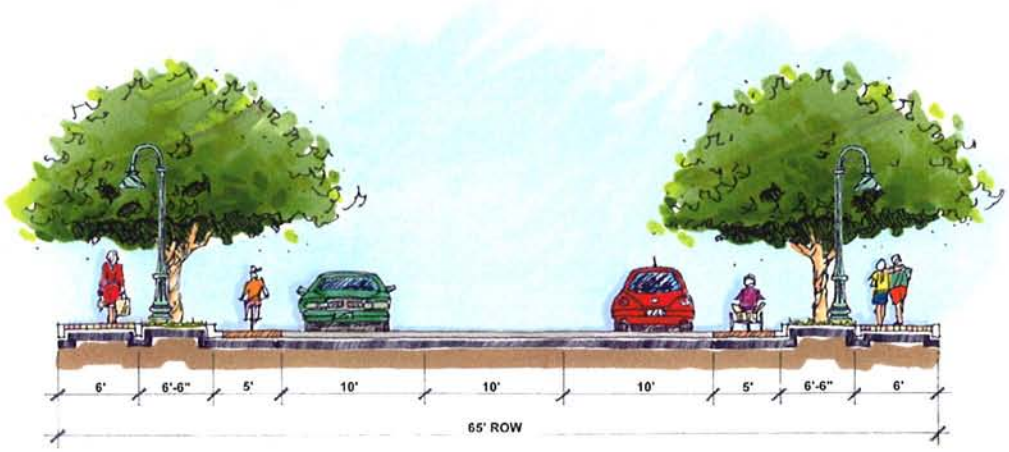
Pros
- Pedestrian positive
- Traffic neutral
- Emergency Services neutral
- Bicycle positive
- Shade
- Consistent with Comp Plan

Cons
- Trolley neutral

Section 2—Estero Boulevard Today

Option B. Option B includes 10-foot travel lanes, a 10-foot center turn lane, 6-foot bike lanes, 6½-foot landscaped edges, and 6-foot sidewalks.

Quiet Center Option B
Three Lanes with Center Turn Lane



Pros

- Pedestrian positive
- Bicycle positive
- Shade
- Traffic positive
- Emergency Services positive
- Consistent with Comp Plan

Cons

- Trolley neutral

Section 2—Estero Boulevard Today

Comparison Matrix. Both options meet most of the design criteria. The north end of the Quiet Center has an existing center turn lane that the community wishes to maintain. Both options were selected as the design solution for the Quiet Center.

Comparison Matrix

	OPTION "A" Two lanes	OPTION "B" Three lanes w/ center turn lane
Comprehensive Plan consistency	●	●
Utilize existing right-of-way	●	●
Traffic neutral or positive	●	●
Emergency Services neutral or positive	●	●
Enhance pedestrian safety	●	●
Enhance bicycle safety	●	●
Improve trolley operations		
Enhance landscaping	●	●
Analyze left turn lanes		●

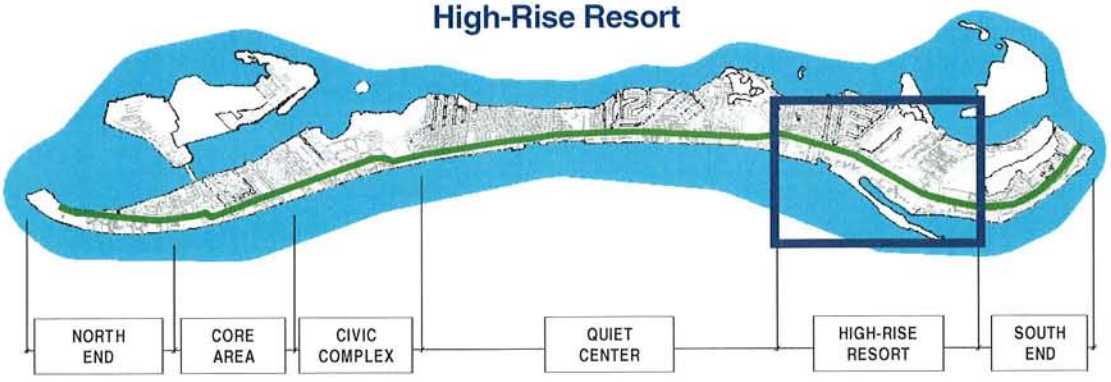
Section 2—Estero Boulevard Today

High Rise Resort

Existing

At 7,277 linear feet, the High Rise Resort area mostly comprises high-density condominiums and retail commercial. The right-of-way widens to 85 feet, but the pavement width continues at 32 feet. A center turn exists through most of the segment. Within the wider right-of-way, the edges are better defined as the sidewalk on the east side of the road is set back approximately 12 feet from the pavement's edge. This sidewalk was designed and built with funding from Transportation Efficiency Act (TEA-21) funds. No drainage improvements were made when the sidewalk was designed and built; rather, it was constructed on existing ground elevation immediately adjacent to drainage swales. According to state design standards, handrails are required along sidewalks where a retaining wall precludes filling the drainage swale. However, this is not conducive to creating an attractive sidewalk. Overall, the community is dissatisfied with the design and construction of the sidewalk in this area. Crosswalks are marked with white paint, but the high traffic speeds in the area make these unsafe pedestrian crossings.

The High Rise Resort area has two activity nodes: one around the movie theater and one around Villa Santini Plaza. This segment of Estero Boulevard has only one public beach access point.



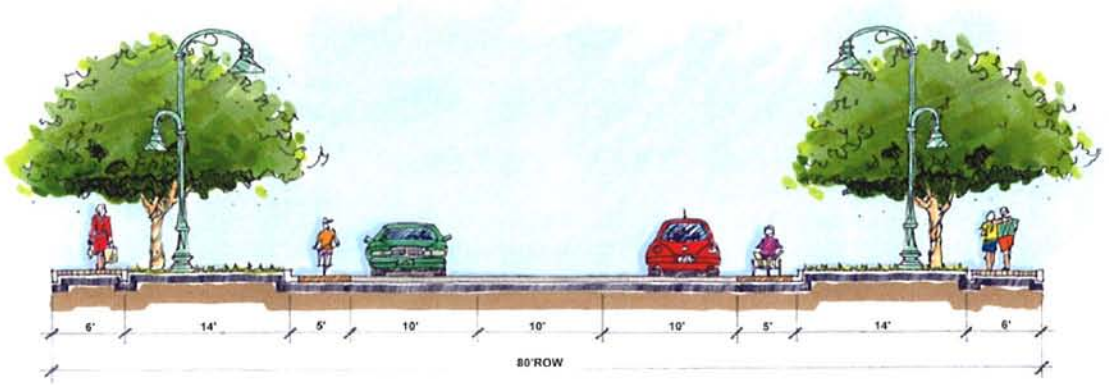
Section 2—Estero Boulevard Today

Design Options

Three options were evaluated for the High Rise Resort.

Option A. Option A maintains the 10-foot center turn lane and includes 10-foot travel lanes, 5-foot colorized bike lanes, 14-foot landscaped edges, and 6-foot sidewalks.

High Rise Resort Option A
Three Lanes with Center Turn Lane



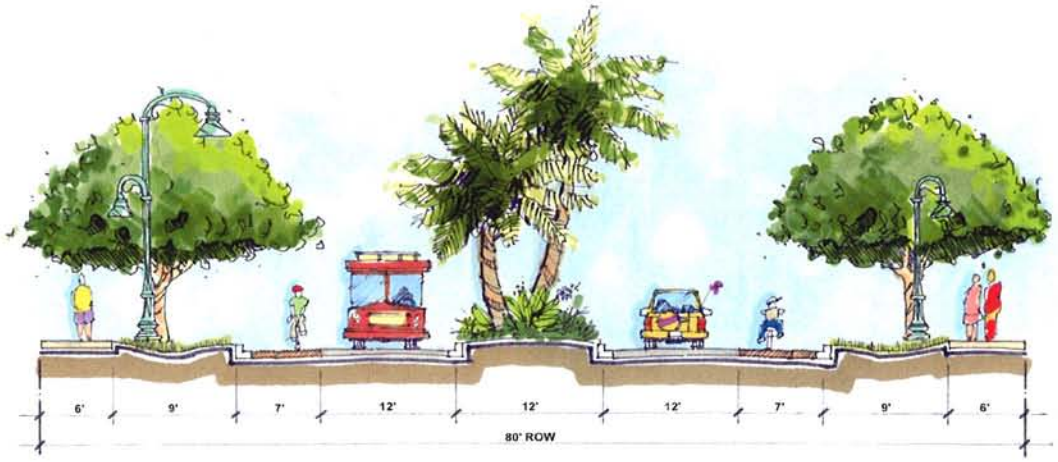
Pros
- Pedestrian positive
- Bicycle positive
- Landscaping edge opportunities
- Traffic calming
- Build w/ above-ground utilities
- Traffic positive
- Emergency Services positive
- Consistent with Comp Plan

Cons
- Speed of vehicles
- Trolley neutral

Section 2—Estero Boulevard Today

Option B. Option B includes a 12-foot landscape median, 12-foot travel lanes, 7-foot colorized bike lanes, 9-foot landscaped edges, and 6-foot sidewalks.

High Rise Resort Option B
Two Lanes with Narrow Median



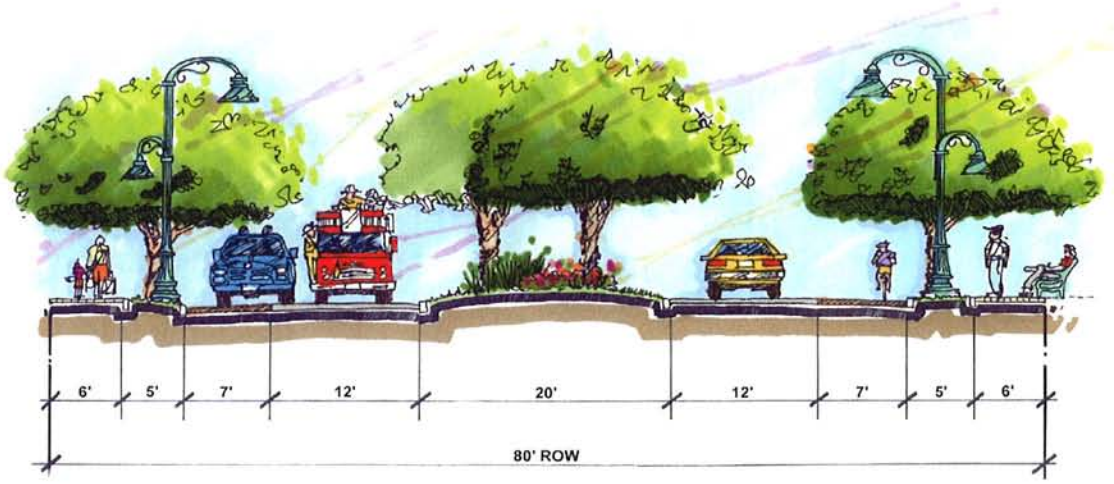
Pros
- Pedestrian positive
- Bicycle positive
- Landscaping median / edge opportunities
- Emergency Services neutral
- Traffic calming
- Traffic positive
- Consistent with Comp Plan

Cons
- Some driveway conflicts
- Trolley neutral

Section 2—Estero Boulevard Today

Option C. Option C includes a 20-foot landscaped median, 12-foot travel lanes, 7-foot colorized bike lanes, 5-foot landscaped edges, and 6-foot sidewalks.

High Rise Resort Option C
Two Lanes with Wide Medians



Pros

- Pedestrian positive
- Improves pedestrian crossing
- Bicycle positive
- Strong median landscaping
- Limited edge landscaping
- Emergency Services neutral
- Traffic calming
- Traffic positive
- Left turn lanes
- Consistent with Comp Plan

Cons

- Trolley neutral
- Minimal driveway conflicts

Section 2—Estero Boulevard Today

Comparison Matrix. All of the options meet most of the design criteria. However, Options A and B do not enhance pedestrian safety to the same degree as Option C; therefore, Option C is selected as the design solution in the High Rise Resort area.

Comparison Matrix

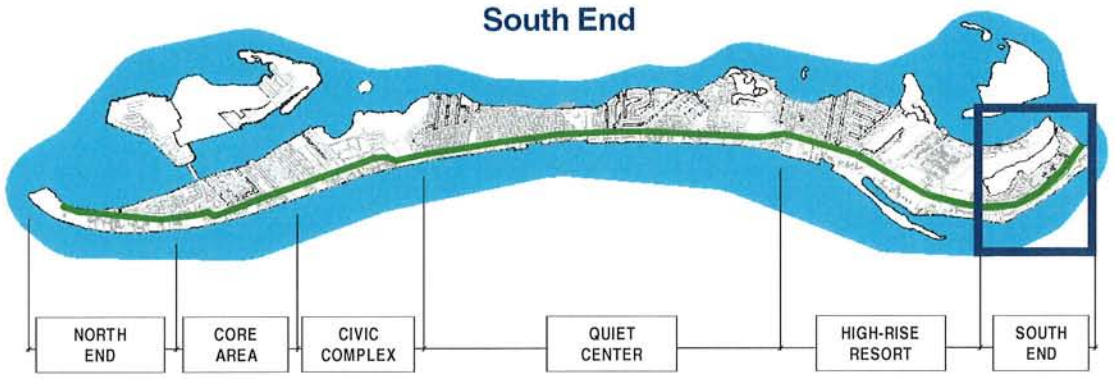
	OPTION "A" Three lanes w/ center turn lane	OPTION "B" Two lanes w/ narrow median	OPTION "C" Two lanes w/ wide medians
Comprehensive Plan consistency	●	●	●
Utilize existing right-of-way	●	●	●
Traffic neutral or positive	●	●	●
Emergency Services neutral or positive	●	●	●
Enhance pedestrian safety			●
Enhance bicycle safety	●	●	●
Improve trolley operations			
Enhance landscaping	●	●	●
Analyze left turn lanes	●	●	●

Section 2—Estero Boulevard Today

SOUTH END

Existing

At 4,447 linear feet, the South End is exclusively single family residential adjacent to the roadway, with driveways directly accessing Estero Boulevard. The right-of-way varies from 85-100 feet, with 32 feet of existing pavement. A sidewalk is located on the east side of the roadway. This segment has no activity nodes or public beach access points.



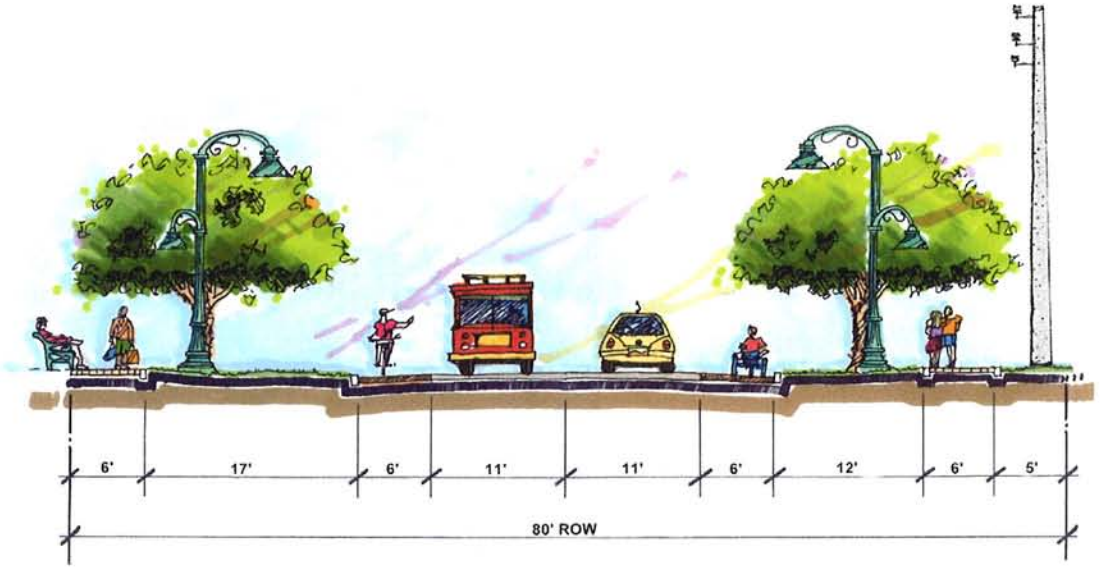
Section 2—Estero Boulevard Today

Design Options

Two options were evaluated for the South End.

Option A. Option A includes 11-foot travel lanes, 6-foot colorized bike lanes, 12-foot landscaped edges, 6-foot sidewalks, and a 6-foot utility easement (if necessary).

South End Option A
Two Lanes



Pros

- Better utilization of right of way
- Pedestrian positive
- Bicycle positive
- Emergency Services neutral
- Shade
- Built with overhead power lines
- Consistent with Comp Plan

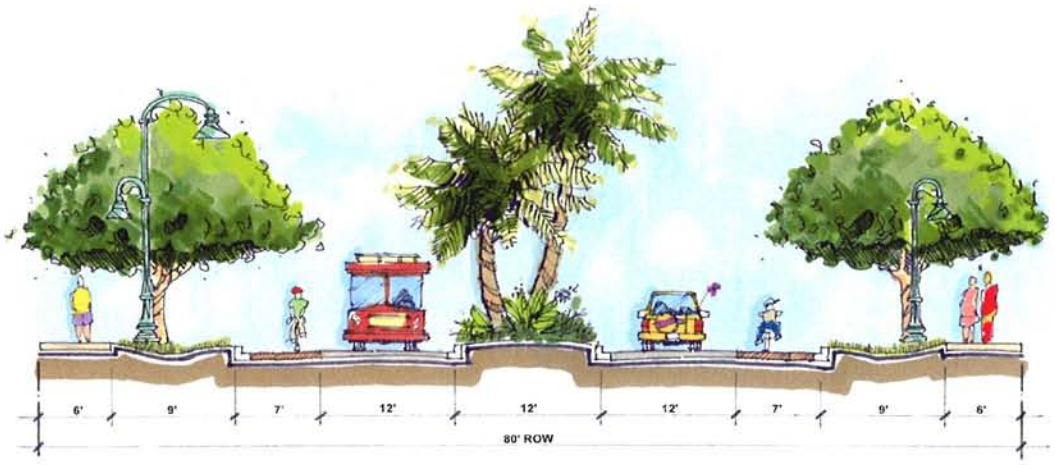
Cons

- Speed of traffic
- Trolley neutral

Section 2—Estero Boulevard Today

Option B. Option B includes a 12-foot landscaped median, 12-foot travel lanes, 7-foot colorized bike lanes, 9-foot landscaped edges, and 6-foot sidewalks.

South End Option B
Two Lanes with Median



Pros

- Pedestrian positive
- Bicycle positive
- Landscaping median / edge opportunities
- Emergency Services neutral
- Traffic calming
- Traffic positive
- Consistent with Comp Plan

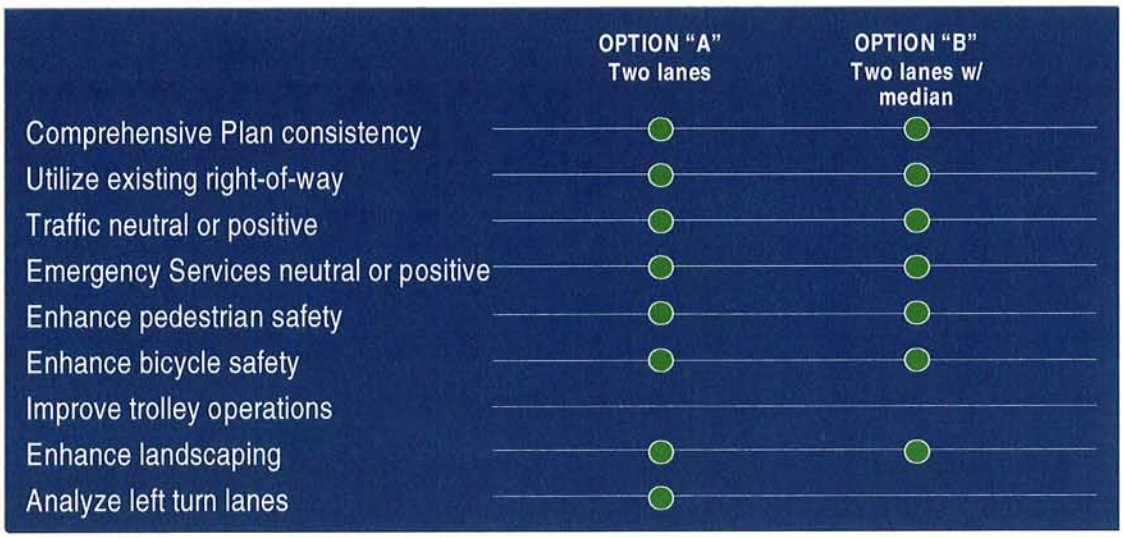
Cons

- Trolley neutral
- Multiple driveway conflicts
- Single family impacts

Section 2—Estero Boulevard Today

Comparison Matrix. Both options meet most of the design criteria. However, the medians in Option B would block the driveway entrances to many homes along Estero Boulevard; therefore, Option A is selected as the design solution for the South End.

Comparison Matrix



Design Solutions

Section 3—Design Solutions

Developing Design Solutions

During the workshops, the community achieved consensus on a number of significant design issues and priorities for the projects that they want included in the *Streetscape Master Plan*.

The community requested that WilsonMiller segment Estero Boulevard and identify and develop appropriate solutions for each segment. To design the *Streetscape Master Plan*, the same six street segments that the community identified in the Town's *Comprehensive Plan* were used:

- North End
- Core Area
- Civic Complex
- Quiet Center
- High Rise Resort
- South End

Design Solutions—Elements

Each of the six road segments presents its own unique issues and challenges. Therefore, specific design solutions were developed based on each segment's characteristics. The community's desire and values for a livable community have been incorporated into the six design solutions. Combined, these segments incorporate the tropical village theme for all seven miles of Estero Boulevard.

The following section discusses the design solutions adopted by the Town Council on April 3, 2000 and May 1, 2000. The design solutions for each segment include the following elements:

- Roadway Cross-section
- Gateways (Core Area and South End)
- Traffic Management Techniques
- Trolley Stops and Crosswalks
- Landscaping
- Lighting

Each design solution is in conceptual form. Prior to beginning any construction, the steps outlined in Section 4—Implementation Strategies, must be completed, including the creation of the more refined and detailed design development plans.

Cross-sections

In designing each cross-section, considerable effort was made to provide separation among roadway users: motorists, bicycles, and pedestrians. All cross-sections include travel lanes and sidewalks on both sides of the street. Most sections include colorized bike lanes. Depending on the right-of-way width within any given segment, the widths of the travel lanes, sidewalks, and bike lanes vary. Street trees placed either between the sidewalk and travel lane or in tree grates within the sidewalk provide much-needed shade. All cross-sections include the design assumptions that, as part of the final improvements, roadway drainage will be enhanced and aerial utilities will be placed underground.

Cross-section Cost Estimates

For each of the six segments within the corridor, an associated cost estimate has been developed for its selected cross-section. The estimated costs are related to the length of the specific segment and the following elements:

- Roadway work
- Drainage with curb and gutter
- Sidewalks

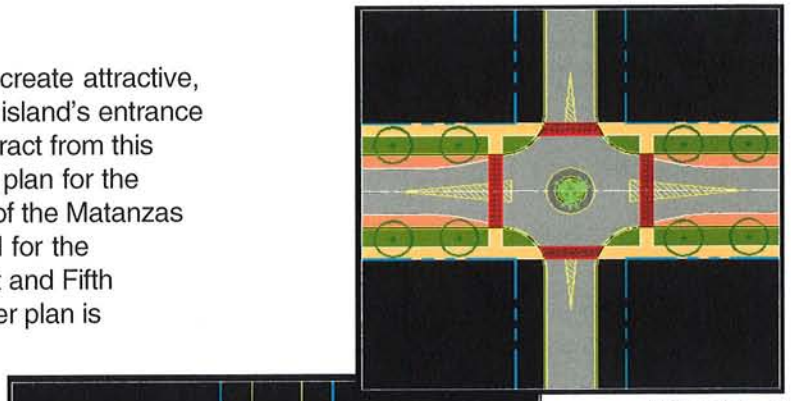
All of the cross-section cost estimates include a low and high range. The low range assumes at a minimum, milling and resurfacing, adding sidewalks, shoulder pavement, curbs, and minor drainage improvements. The high range assumes a total reconstruction of the roadway with major drainage improvements. Cost estimates reflect construction costs *only* and *do not* include final design (design development) costs. For the purposes of budgeting, a 20 percent contingency fee should be added.

Section 3—Design Solutions

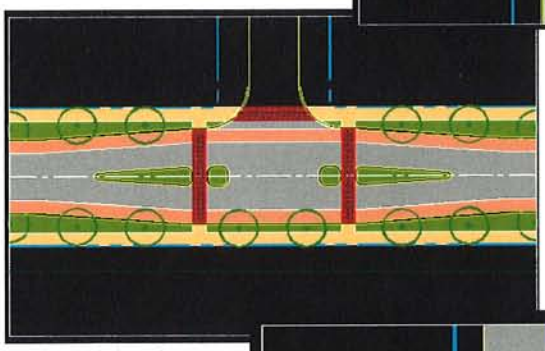
Gateways

The community wants to create attractive, welcoming gateways at the island's entrance points. Under separate contract from this *Streetscape Master Plan*, a plan for the gateway feature at the foot of the Matanzas Pass bridge was developed for the intersection of Center Street and Fifth Avenue. The gateway master plan is discussed in detail in the Core Area section.

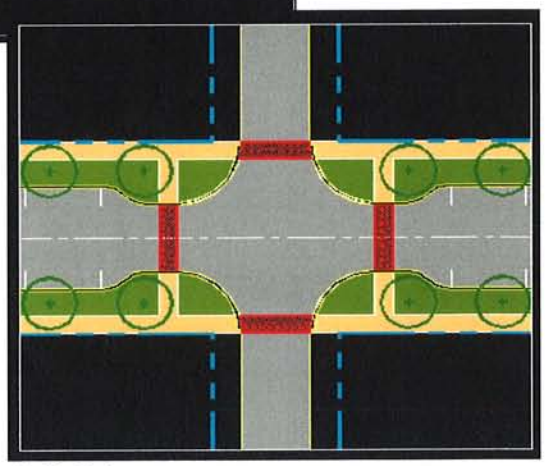
A conceptual design for the gateway feature at the San Carlos bridge includes an area south of the bridge, the bridge itself, and an area north of the bridge. The conceptual design is included in the South End section of this document.



Roundabout



Refuge Island



Bulb Out

Traffic Management Techniques

Traffic management techniques (TMTs), also known as traffic calming techniques, are used to achieve the following:

- Slow traffic in areas of high speed
- Better manage the conflicts among motorists, pedestrians, and bicyclists in congested areas

Primary TMTs slow traffic by implementing a physical change in the roadway that deflects the travel path of the motorists. Secondary TMTs break up the long, straight appearance of the roadway by focusing the motorists' attention on shorter view segments. For the purpose of the *Streetscape Master Plan*, three primary types of TMTs and two typical secondary TMTs were identified for Estero Boulevard.

Primary TMTs

Roundabouts. Roundabouts are intersection control devices generally designed as raised, landscaped islands. By design, roundabouts force motorists to decrease their speed to maneuver around the island.

Refuge islands. Designed as raised islands in the center of the street, refuges protect pedestrians from traffic. Refuge islands may be designed to deflect the travel path of a motorist and narrow the travel lane, thereby reducing vehicle speed.

Bulb outs. Bulb outs discourage speeding by restricting turning speeds and narrowing the travel lanes. They facilitate pedestrian crossing by providing better

Section 3—Design Solutions

visibility between pedestrians and motorists, shortening the crossing distance, and reducing the amount of time that pedestrians are in the street.

Secondary TMTs

Change in pavement. Brick pavers in crosswalks and at other strategic locations break up the long views of black pavement. They also cue drivers that they are entering a different area.

Intensified landscaping. The verticalness of mature landscaping makes roadways appear narrower. When landscaping is intensified (eg., adding groundcovers to the roadway edge), the roadway appears to become narrower than before.

With the exception of the North End, which already experiences low traffic volume and speed, TMTs have been located in each segment of Estero Boulevard. Design solutions include only the locations of the TMTs. Determining the exact type of TMT to be used at specific locations will be accomplished following appropriate site analysis during the creation of detailed design development plans.

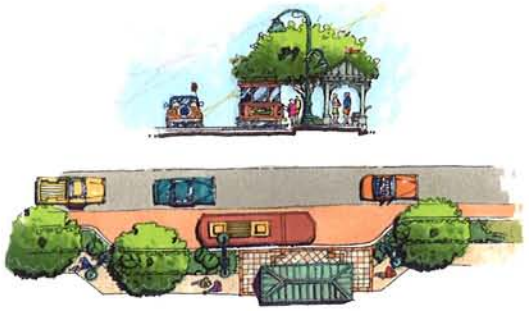
Cost Estimate for Traffic Management Techniques

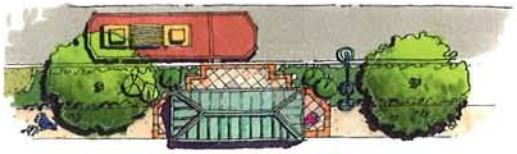
Primary	$30,000
Secondary	$20,000

Trolley Stops

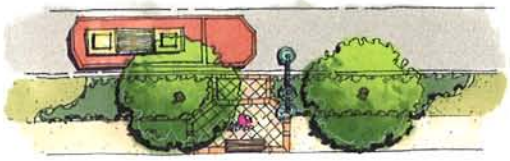
Trolley stops should be comfortable, safe, and inviting. For the purpose of this *Streetscape Master Plan*, conceptual designs for two primary trolley stops and one secondary trolley stop were created. Design solutions include only the locations of the trolley stops. Specific design details for trolley stops will be identified following appropriate site analysis and the creation of design development plans.

Primary trolley stops. Primary trolley stops include a shelter, benches, waste receptacles, bicycle racks, pedestrian lighting, and landscaping. One of the primary trolley stops includes a trolley pull-off area within the right-of-way. Primary trolley stops are located in commercial, civic, and high density areas.





Secondary trolley stops. Secondary trolley stops include a bench, waste receptacle, pedestrian lighting, and landscaping. These stops generally are



Section 3—Design Solutions

Cost Estimates for Trolley Stops	
Primary with pull-off	$61,250
Primary without pull-off	$44,260
Secondary	$12,350

located in single family residential areas along Estero Boulevard. Benches may be placed underneath street trees to provide needed shade.

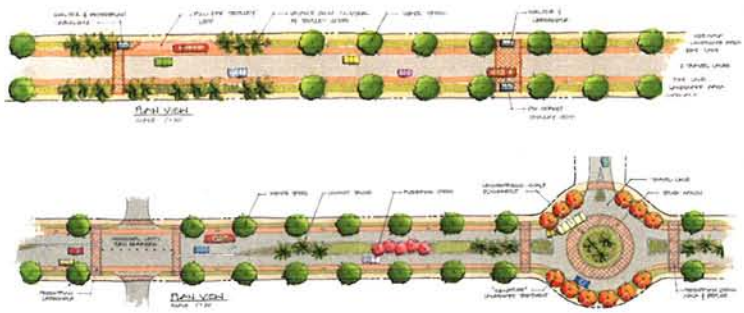
Crosswalks

Everyone who participated in the development of this *Streetscape Master Plan*—residents, elected officials, Town staff, emergency services providers, and trolley service providers—agreed that the crosswalks on Estero Boulevard must be enhanced. The design solution uses brick pavers and pedestrian lights to visually enhance the crosswalks for each segment. The crossings at the beach access points are enhanced with additional brick pavers in the entire intersection. Other improvements may be found at specific crosswalks, such as the crosswalk pavement lighting (or "runway" lights), which were discussed during the charrette. The full details for each crossing will be developed during the creation of the design development plans. The appropriate location for each crosswalk is discussed in each segment.

Cost Estimates for Crosswalks	
Typical	$17,000
Beach Access	$26,500

Landscaping

The alignment of street trees along the edge of Estero Boulevard establishes the landscape rhythm for each segment. Flowering trees may be used for color impact at the location of TMTs, trolley stops, and crosswalks. Intense ornamental planting should be limited.

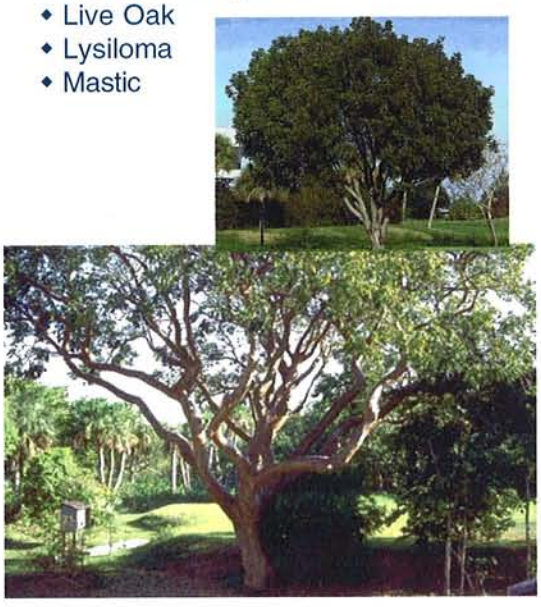


Landscaping materials that require "no maintenance" do not exist. All trees, shrubs, and ground covers need some level of maintenance. Irrigation is required for proper maintenance.

The landscaping plant palette selected for Estero Boulevard includes:

Shade Trees

- Gumbo Limbo
- Mahogany
- Jamaican Dogwood
- Live Oak
- Lysiloma
- Mastic



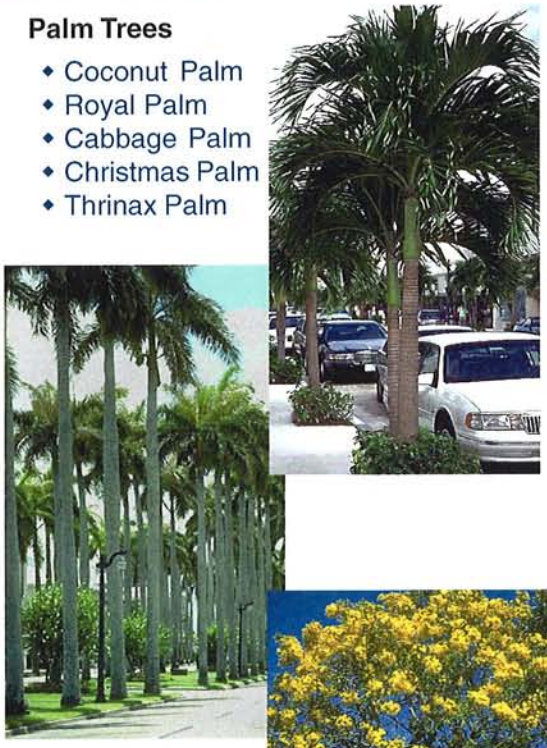
Section 3—Design Solutions

Medium Trees

- Seagrape
- Silver Buttonwood
- Pigeon Plum
- Clusia

Palm Trees

- Coconut Palm
- Royal Palm
- Cabbage Palm
- Christmas Palm
- Thrinax Palm



Flowering Trees

- Tabebuia
- Royal Poinciana
- Orange Geiger
- Jacaranda
- Hong Kong Orchid
- Frangipani

Shrubs and Ground Covers

- Coontie
- Dwarf Fakahatchee
- Pink Muhly Grass
- Juniper
- Liriope
- Dwarf Bougainvillea
- Beach Creeper
- Succulents

The landscape rhythm and plant palette apply to all of Estero Boulevard; therefore, it is not discussed further in the following segments.

The location of specific plant material will be accomplished during the creation of a planting plan as part of the design development plan.

Lighting

Certain areas require different lighting. Intersections, trolley stops, and crosswalks require high levels of illumination; residential areas require low levels. It is recommended that street lights be 25-30 feet in height and spaced 175-200 feet apart. Pedestrian lights should be 12-15 feet in height and spaced 75-100 feet apart. In certain areas, the lights must be shielded away from the beach to comply with sea turtle protection laws. A specific type of light fixture is not recommended. This is best determined by the community during the design development phase.

As a result of the conclusions reached following a comparison of the analysis results of each alternative, the following design solutions for each segment are to be incorporated as part of the *Streetscape Master Plan*.

Section 3—Design Solutions

NORTH END

Based on the pros and cons and comparisons of each design option, the design solution for the North End is as follows.

Adopted Cross-section

Narrow 10-foot travel lanes keep speeds low. Bike lanes provide dedicated space for bicyclists, thereby decreasing conflicts between pedestrians and motorists. The edges are defined with landscaped areas between the travel lanes and sidewalk. The sidewalk width is adequate to provide space for shade trees, lighting, street furniture, and trolley stops.

The approved cross-section includes the following elements:

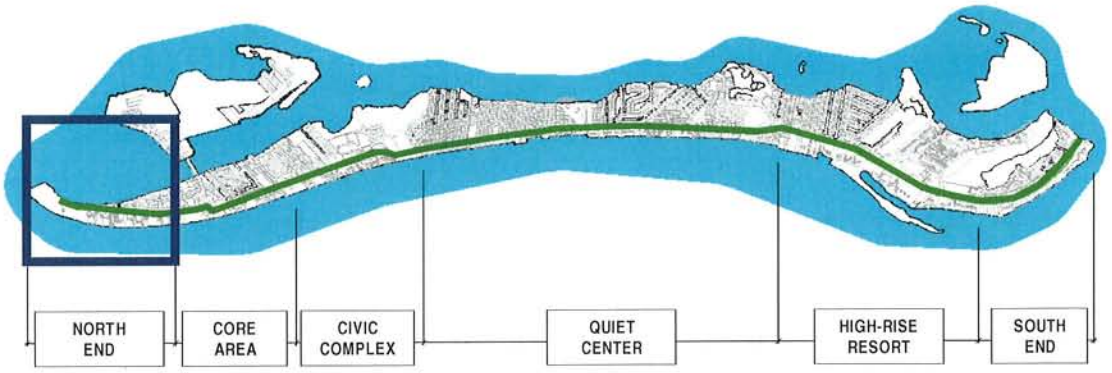
- 10-foot travel lanes
- 6-foot colorized bike lanes
- 8-foot landscaped edges
- 6-foot sidewalks

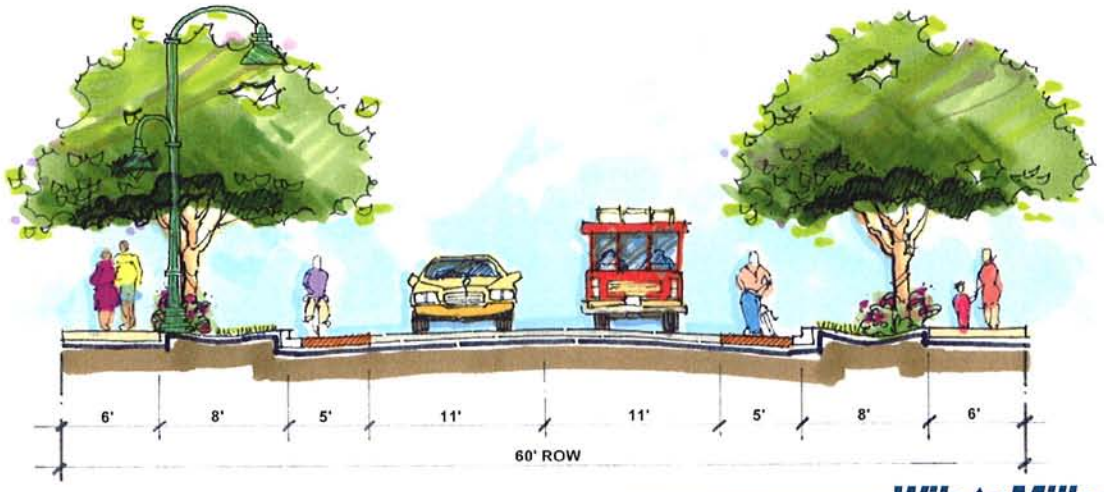
Traffic Management Techniques

The low vehicle volume and speed, narrow travel lanes, and large street trees will help maintain the low speed environment in this segment. No further TMTs are recommended in the North End.

Trolley Stops and Crosswalks

Primary trolley stops are located at Bowditch Point (existing) and the Pink Shell. The other two trolley stops are secondary. Crosswalks are located at all six of the beach access points and at the four trolley stops.





North End – Roadway Management

Cost Estimate for the North End

	Low	High
Roadway	$891,000	$1,850,000
Traffic Management	0	0
Trolley Stops	105,200	105,200
Crosswalks	98,000	98,000
Lighting	57,500	57,500
Landscape	92,400	92,400
Utilities	740,000	740,000
Total	**$1,984,100**	**$2,943,100**

Section 3—Design Solutions

Core Area

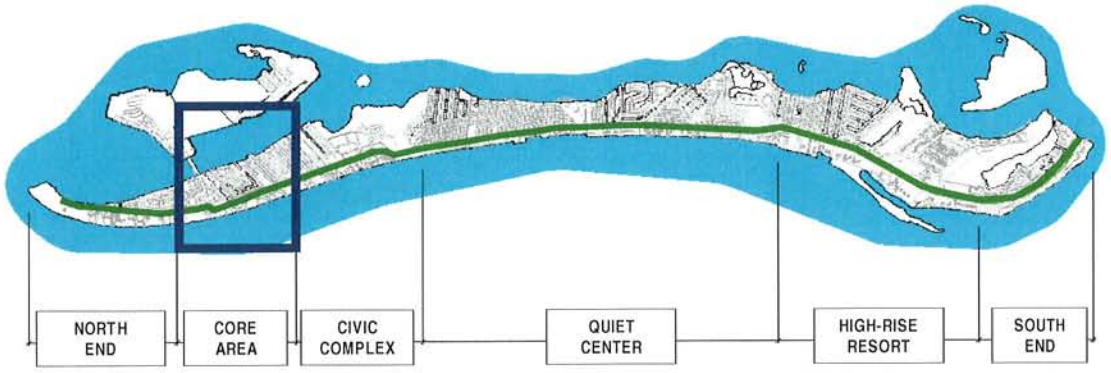
Based on the pros and cons and comparisons of each design option, the design solution for the Core Area is as follows.

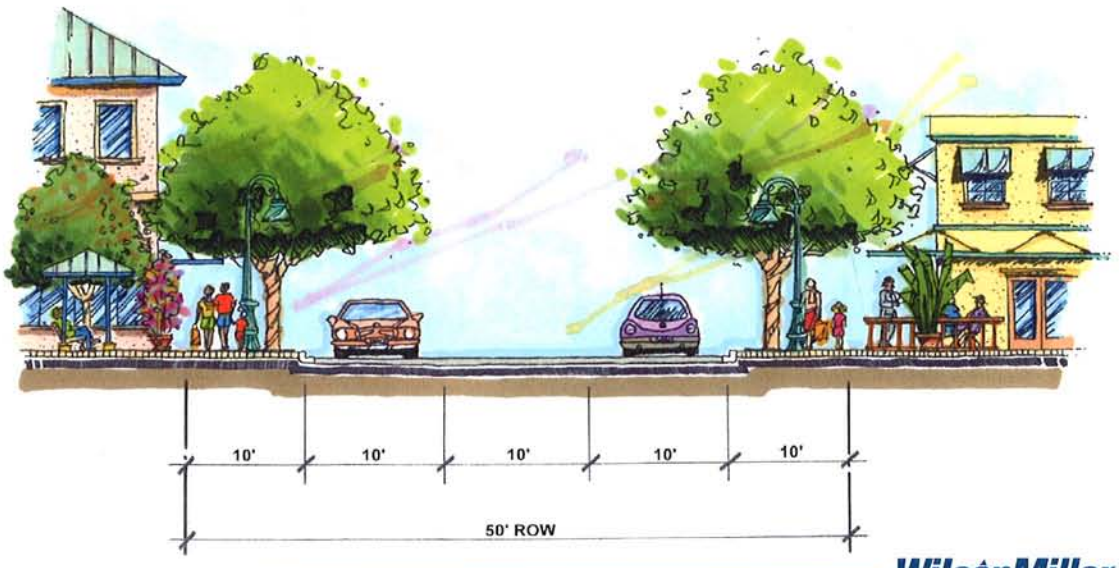
Adopted Cross-section

Due to the traffic congestion and frequent driveway connections, it is necessary to maintain the center turn lane for turning and merging traffic, and emergency services access. It would be optimum to widen the sidewalks to a minimum of 12 feet, but the required center turn lane does not make this feasible. Therefore, the sidewalk width must be maintained at 10 feet. Due to the limitations of the right-of-way, the need for the center turn lane, and the need to maintain the 10-foot sidewalks, this cross-section cannot accommodate bike lanes. Bicyclists will continue to ride through the area as they do today—on the sidewalks, sharing the travel lane with motorists, or through the alternate route of Crescent Street.

The approved cross-section includes the following elements:

- 10-foot travel lanes
- 10-foot center turn lane
- 10-foot sidewalks
- Street trees in grates





Section 3—Design Solutions

Traffic Management Techniques

Enhanced traffic management is needed to control the movements of the high number of automobiles, pedestrians, and bicyclists. Four primary TMTs are located where Estero Boulevard intersects with San Carlos Boulevard, Fifth Avenue, Crescent Street, and Palermo Circle. The intent of TMTs in these locations is to enhance safety and better manage traffic, pedestrian, and bicycle circulation.

Trolley Stops and Crosswalks

Primary trolley stops are located at Lynn Hall Memorial Park, Times Square, Canal Street, and the Lani Kai. The trolley stop at Carolina Avenue is a secondary stop. Crosswalks are located in conjunction with TMTs, trolley stops, and beach access points as shown.

Core Area – Roadway Management

Cost Estimates for Center Street/Fifth Avenue Master Plan

Base Cost:		
Infrastructure	$359,900	$359,900
Landscape	50,000	50,000
Add ons:		
Pavers		
Truck apron		5,000
Crosswalks		20,700
Sidewalk		99,100
Roadway		126,200
Larger shrubs & palms		150,000
Even larger shrubs & palms		300,000
Total	**$409,900**	**$1,110,900**

Section 3—Design Solutions

Gateway–Center Street/Fifth Avenue Master Plan

The Matanzas Pass gateway feature includes a roundabout at the intersection of Center Street and Fifth Avenue, an enhanced at-grade pedestrian crossing located at the existing pedestrian signal, a landscaped median between the roundabout and pedestrian crossing, and additional landscaping on the edges.

Cost Estimate for the Core Area

	Low	High
Roadway	$1,020,000	$1,920,000
Gateway	409,900	960,900
Traffic Management (4/0)	120,000	120,000
Trolley Stops (4/2)	201,750	201,750
Crosswalks (11)	199,400	199,400
Lighting	114,500	114,500
Landscaping	550,800	550,800
Utilities	800,000	800,000
Total	**$3,416,400**	**$4,867,400**

Section 3—Design Solutions

Civic Complex

Based on the pros and cons and comparisons of each design option, the design solution for the Civic Complex is as follows.

Adopted Cross-section

The same congestion and limited right-of-way conditions as described in the Core Area continue through the Civic Complex. Therefore, the same cross-section will continue through the Civic Complex.

The approved cross-section consists of the following elements:

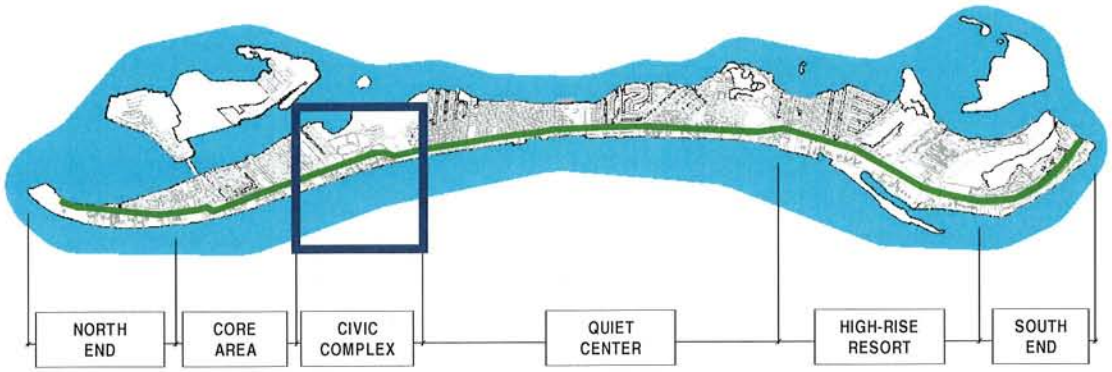
- 10-foot travel lanes
- 10-foot center turn lane
- 10-foot sidewalks with pavers
- Street trees in grates

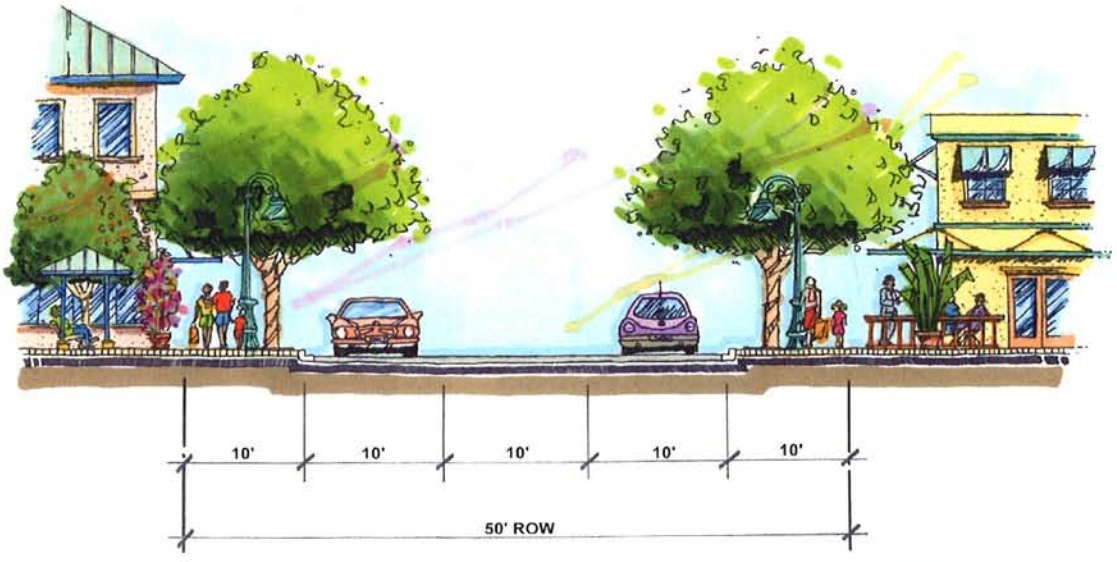
Traffic Management Techniques

TMTs are located at the edges of the activity node, reinforcing the slow moving pedestrian environment.

Trolley Stops and Crosswalks

Primary trolley stops are located at Mango Street, Tropical Shoreway, Bay Road, and at the 7-11 just south of the fire station. Secondary trolley stops include Virginia Avenue, Gulf Beach Road, and the Red Coconut. Crosswalks are located in conjunction with TMTs, trolley stops, and beach access points as shown on the graphic.





Civic Complex – Roadway Management

Cost Estimate for the Civic Complex

	Low	High
Roadway	$1,244,000	$2,100,000
Traffic Management	80,000	80,000
Trolley Stops	201,800	201,800
Crosswalks	167,200	167,200
Lighting	65,000	65,000
Landscaping	270,200	270,200
Utilities	840,000	840,000
Total	**$2,868,200**	**$3,724,200**

Section 3—Design Solutions

QUIET CENTER

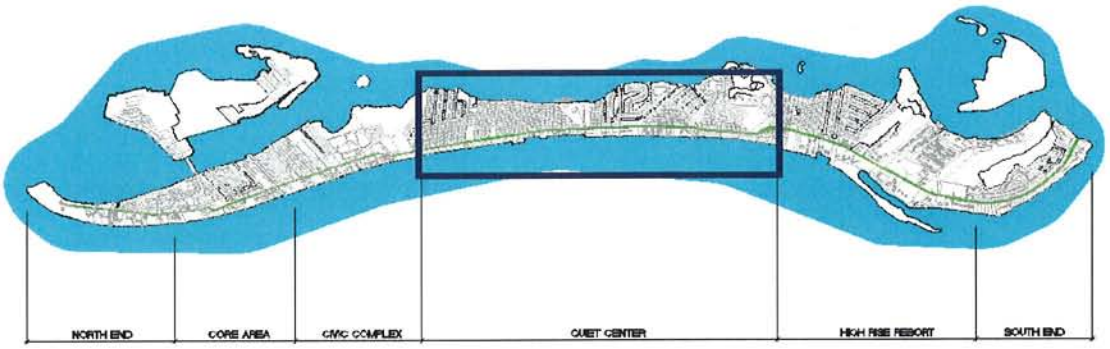
Based on the pros and cons and comparisons of each design option, the design solution for the Quiet Center is as follows.

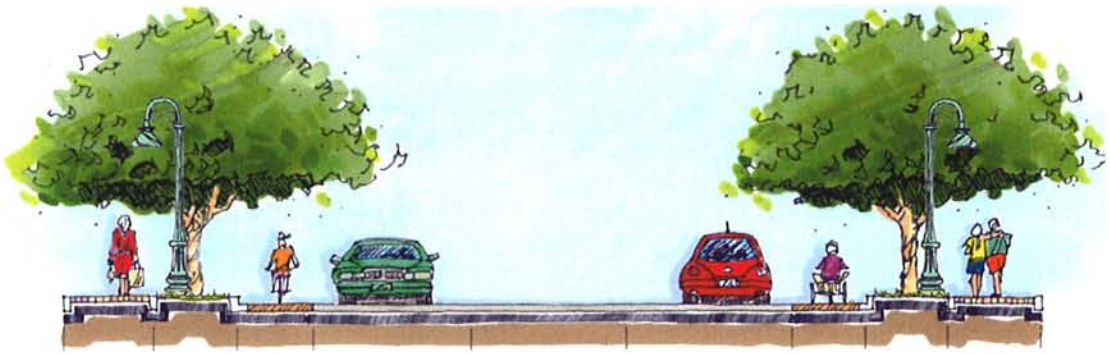
Adopted Cross-section

Two cross-sections have been developed in this segment.

The first cross-section, where the center turn lane currently exists, includes the following elements:

- 10-foot travel lanes
- 10-foot center turn lane
- 5-foot colorized shoulders
- 6½-foot landscaped edges
- 6-foot sidewalks





Section 3—Design Solutions

The second cross-section includes the following elements:

- 11-foot travel lanes
- 6-foot colorized shoulders
- 9½-foot landscaped edges
- 6-foot sidewalks

Traffic Management Techniques

During the charrette, residents identified the area from the fire station to the San Carlos bridge as having the highest traffic speeds. These speeds do not foster a safe pedestrian environment along Estero Boulevard. As described earlier, TMTs are placed approximately every 400-600 feet to slow traffic speed. Therefore, TMTs in the Quiet Center become more frequent; most are secondary. However, primary TMTs are located at Publix and at the "S" curve at the Church of Ascension, an area of high traffic accidents. Specific locations are shown on the graphic.

Trolley Stops and Crosswalks

Primary trolley stops are located at Connecticut Street, Bayview Avenue, the Publix, Dakota Avenue, Aberdeen Avenue, and Mound Road. Secondary trolley stops are located at Madison Court, Hercules Drive, and Sterling Avenue. Crosswalks are located in conjunction with TMTs, trolley stops, and beach access points as shown on the graphic.

Quiet Center North – Roadway Management

Section 3—Design Solutions

Quiet Center South – Roadway Management

Cost Estimate for the Quiet Center

	Low	High
Roadway	$2,330,000	$5,675,000
Traffic Management (3/9)	270,000	270,000
Trolley Stops (6/4)	315,000	315,000
Crosswalks (17)	268,700	268,700
Lighting	204,000	204,000
Landscaping	191,100	191,100
Utilities	2,300,000	2,300,000
Total	$5,878,800	$9,223,800

Section 3—Design Solutions

HIGH RISE RESORT

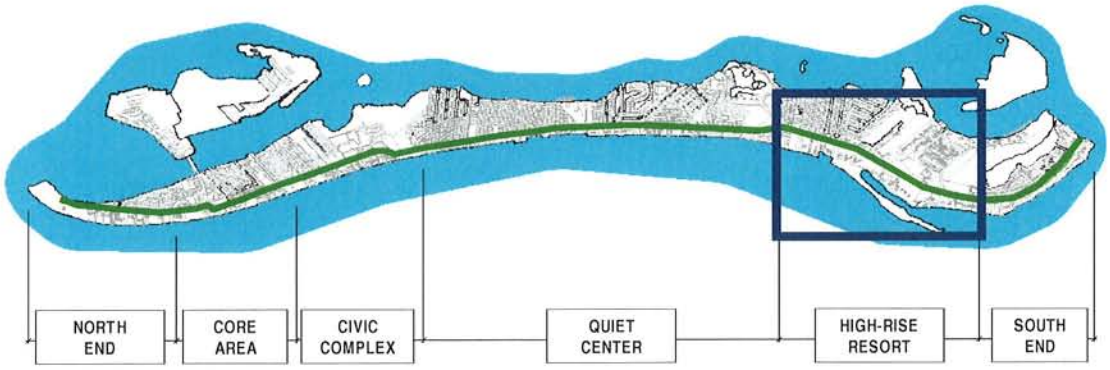
Based on the pros and cons and comparisons of each design option, the design solution for the High Rise Resort is as follows.

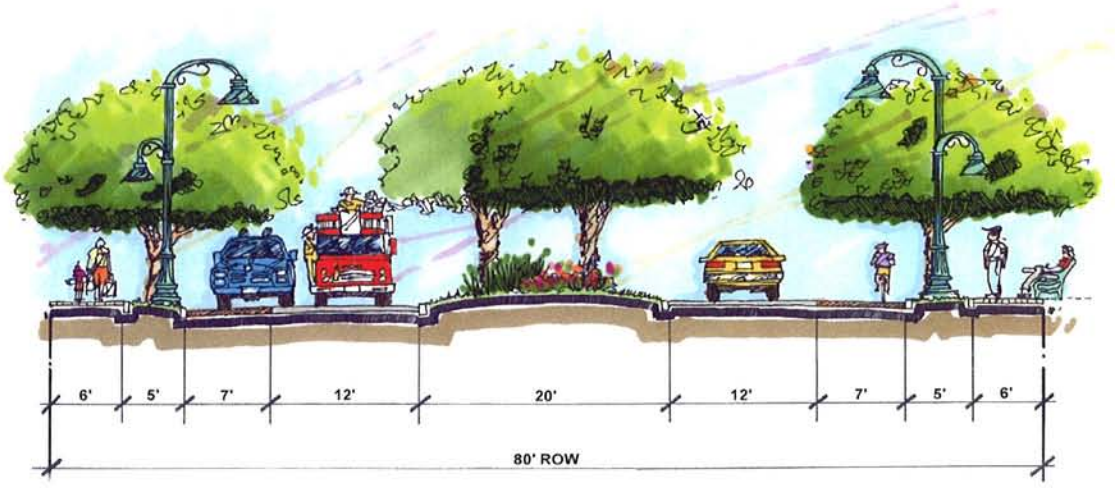
Adopted Cross-section

The High Rise Resort segment of Estero Boulevard incorporates condominium driveway access points spaced approximately 150-300 feet apart. This spacing allows the special treatment and inclusion of wide landscaped medians with turning pockets in place of the existing center turn lane.

The cross-section includes the following elements:

- 20-foot landscaped median
- 12-foot travel lanes
- 7-foot colorized shoulders
- 5-foot landscaped edges
- 6-foot sidewalks





Section 3—Design Solutions

Traffic Management Techniques

As higher traffic speeds occur in this area, TMTs spaced 400-600 feet apart continue from the Quiet Center into the High Rise Resort area. Primary techniques frame the two activity nodes, reminding motorists that they are in an intensified pedestrian area. Secondary techniques between the activity nodes help maintain slower speeds. The High Rise Roadway Management graphic identifies the specific locations of crosswalks.

Trolley Stops and Crosswalks

Primary trolley stops are located within the two activity nodes and one at Albatross Street. A secondary trolley stop is located at Bay Beach Lane. Crosswalks are located in conjunction with TMTs, trolley stops, and the beach access point as shown on the graphic.

High Rise – Roadway Management

Cost Estimate for High Rise Resort

	Low	High
Roadway	$2,720,000	$3,450,000
Traffic Management	180,000	180,000
Trolley Stops	206,400	206,400
Crosswalks	242,600	242,600
Lighting	183,500	183,500
Landscaping	212,500	212,500
Utilities	1,400,000	1,400,000
Total	**$5,145,000**	**$5,875,000**

Section 3—Design Solutions

SOUTH END

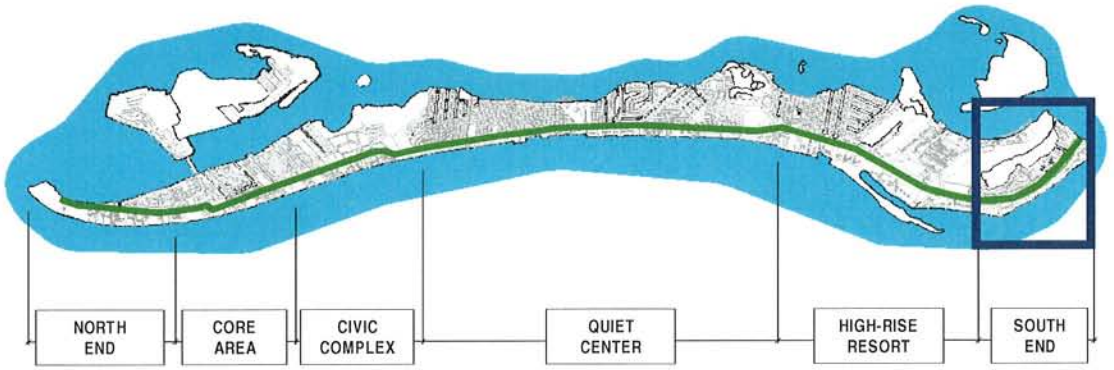
Based on the pros and cons and comparisons of each design option, the design solution for the South End is as follows.

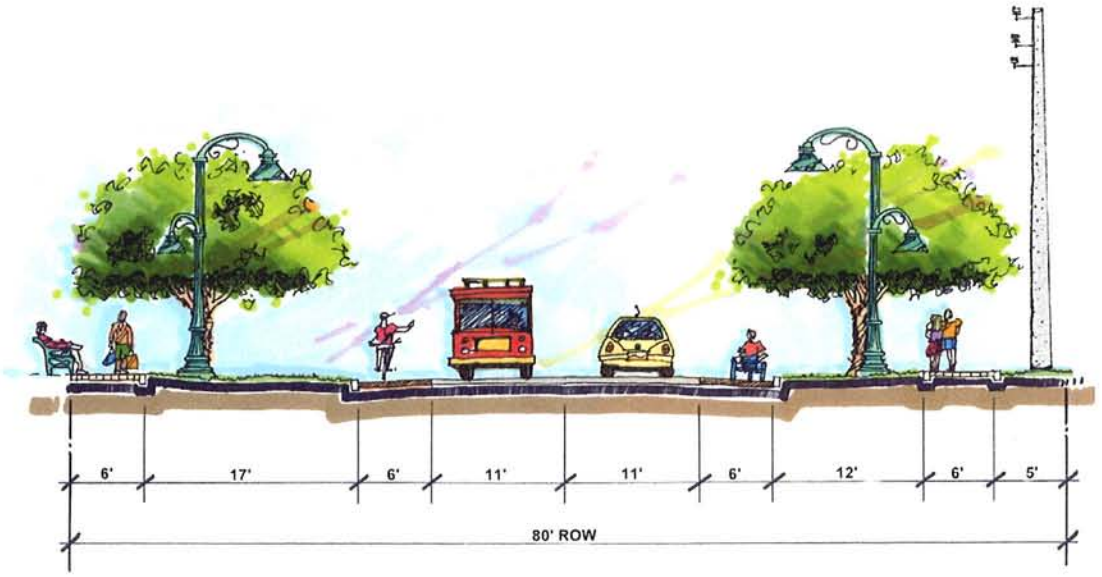
Adopted Cross-section

The same generous right-of-way continues from the High Rise Resort area into the South End. While it could accommodate similar attractive landscaped medians, the single family residential driveway connections are so close together that medians would block left turning movements in and out of the driveways. Therefore, medians are not included in this segment.

The cross-section includes the following elements:

- 11-foot travel lanes
- 6-foot colorized shoulders
- 17-foot landscaped edges
- 6-foot sidewalks





Section 3—Design Solutions

Traffic Management Techniques

Primary TMTs are located at Lagoon Street, Tarpon Road, and Estrellita Drive. Secondary TMTs are located approximately every 400-600 feet apart as shown on the graphic.

Trolley Stops and Crosswalks

This is exclusively a residential segment with a lower rate of trolley ridership. Therefore, all trolley stops are secondary, with the exception of one primary stop located at Estrellita Drive. As shown in the graphic, crosswalks are located in conjunction with the TMTs and trolley stops.

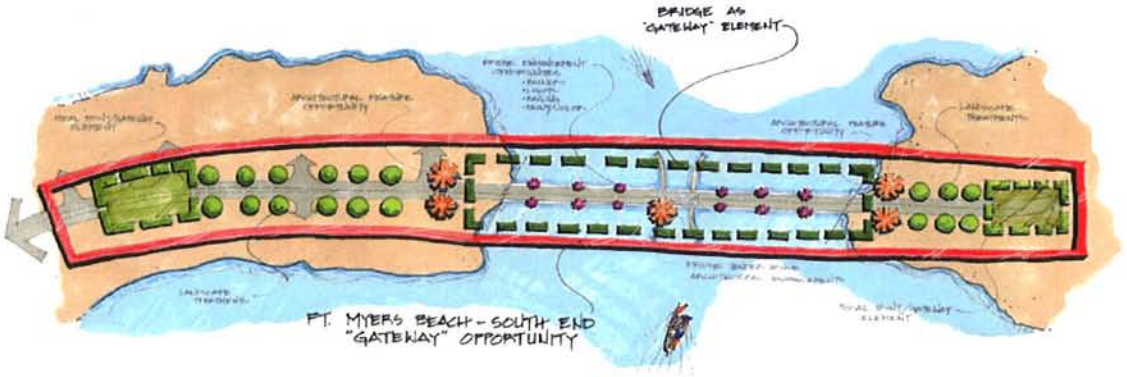
South End – Roadway Management

Section 3—Design Solutions

Gateway

The San Carlos bridge is the island's southernmost bridge. The conceptual gateway includes design features at the south end of the bridge, on the bridge itself, and on the north side of the bridge.

Gateway South End



Cost Estimate for South End

	Low	High
Roadway	$855,000	$2,100,000
Gateway	163,000	355,250
Traffic Management (3/4)	170,000	170,000
Trolley Stops (1/4)	93,700	93,700
Crosswalks (5)	97,500	97,500
Lighting	65,000	65,000
Landscaping	97,000	97,000
Utilities	840,000	840,000
Total	**$2,381,200**	**$3,818,500**

Implementation Strategies

Town of Fort Myers Beach

Estero Boulevard STREETSCAPE

Section 4—Implementation Strategies

Implementing the Designs

Implementation of the *Estero Boulevard Streetscape Master Plan* requires a well-planned strategy—one that includes guidelines for setting priorities and a timeframe to implement phased improvements. The following strategies provide the structure under which the *Streetscape Master Plan's* design solutions can be implemented.

The Streetscape Master Plan can be implemented successfully by using specific strategies.

Transforming the current auto-oriented street into a pedestrian-friendly street is best accomplished through phased improvements. The Town Council must take certain steps to initiate the improvement process—to bring these design solutions off the paper and onto the street. It is recommended that the Town take the following steps to implement each phase of the improvements:

1. Include *Streetscape Master Plan* Phase 1 in the Town's capital improvement budget
2. Select a design development consultant for Phase 1 projects
3. Accept public input on design specifications for Phase 1 projects
4. Have the design professional complete the design
5. Adopt the final design and authorize receipt of bids
6. Advertise, receive, review, and award bids
7. Construct Phase 1 projects
8. Repeat steps 1-7 for Phase 2, then Phase 3, etc.

Implementation Strategies

In addition to the implementation steps outlined above, the following describes a number of additional implementation strategies that the Town should consider.

Hire a Project Coordinator

Significant changes to each segment of Estero Boulevard will come about as a result of continued collaboration among various stakeholder groups. However, the mechanics of implementing such an extensive project may prove challenging for the individuals involved in the process. Therefore, it is recommended that the Town hire a full-time project coordinator to help facilitate the overall process. In addition to being an effective communicator, the coordinator should be highly knowledgeable on transportation corridor development issues. A background in construction would be preferred.

Obtain Jurisdiction of Estero Boulevard

The North End is the only segment of Estero Boulevard currently under the Town's jurisdiction. Without jurisdiction over all seven miles of Estero Boulevard, the Florida DOT and/or Lee County will have to approve all roadway improvements. To make implementation as easy as possible, the Town should immediately begin the process of obtaining control of Estero Boulevard.

Initiate Discussion with the City of Bonita Springs

The South End gateway conceptual design includes gateway features on the south side of the bridge and on the bridge itself. The city limits of Bonita Springs extend 500 feet into San Carlos Pass, including that portion of the bridge. To implement the South End gateway, the Town should begin coordination efforts with the City of Bonita Springs immediately.

Establish a Tree Donation Program

Many communities benefit from citizens who generously donate trees to beautify the landscape. By establishing a tree

Section 4—Implementation Strategies

donation program, the Town will benefit from the available stock of mature trees that citizens are willing to donate. When compared to the costs of purchasing trees from a nursery, the Town's costs associated with removing a donated, mature tree from a resident's yard is minimal. This is a "win-win" situation: the Town can save thousands of dollars and the community can feel good about contributing toward the beautification effort.

Citizen Donations

Many citizens also are willing to make tax-deductible donations toward causes that they feel directly benefit them. With an established fund for donations, members of the community can make tax-deductible contributions toward implementing the *Streetscape Master Plan*.

Drainage, Survey, and Utilities Master Plan

Preparing a Drainage, Survey, and Utilities Master Plan will help the Town identify the extent of needed drainage improvements, any right-of-way encroachments, and areas where the utilities will be buried underground. This information is likely to affect the project phasing. For instance, a segment that needs only minor drainage improvements, has no right-of-way encroachments, and where it is unnecessary to bury utilities as part of the initial construction may be the easiest segment to implement. While these issues are currently unknown, they will be important to create the design development plans.

Coordination with Utilities

Representatives from TECO/Peoples Gas have indicated that the company will be installing a gas line on Estero Boulevard from the Matanzas Pass bridge to approximately the Red Coconut within the next year. Other utility providers should be contacted to identify replacement needs and timing. Replacing utility lines usually includes many of the same components as road reconstruction, such as pavement demolition, excavation, and roadway base reconstruction. The Town should coordinate with utility providers with the goal of simultaneously replacing utilities and reconstructing the street where possible. This will allow cost sharing of common elements. It also will keep utility companies from cutting into new pavement and disrupting the street to replace utilities after the project has been completed.

Ongoing Care

Part of the allure of a great street is a consistent level of care and maintenance and predictable operation of facilities. The recreated Estero Boulevard will prosper from a coordinated effort to promote the community and the street through advertising and staging special events that will draw the community together. Estero Boulevard will become the heart of the community and should be viewed as such. The Town will benefit from efforts to coordinate upkeep, promote its amenities, and to organize special events that celebrate Estero Boulevard. The Project Coordinator can develop an ongoing maintenance program consistent with the phasing schedule.

PHASING

Projects of this magnitude must be phased to manage costs and cash flow and to minimize disruption to traffic, adjacent residents, and businesses. A phasing schedule offers a flexible, staged strategy for implementing adopted improvements.

To keep momentum, the Streetscape Master Plan needs some "quick wins"—visible ones.

Section 4—Implementation Strategies

Implementation Criteria Table

Criteria	North End	Core Area	Civic Complex	Quiet Center	High Rise Resort	South End
Charrette participants' ranking	1	3	6	5	4	2
Ease of implementation	6	1	2	4	3	5
Within residential zone	3	1	4	5	6	2
No undergrounding utilities required	0	0	0	0	0	6
High visibility	1	6	5	3	2	4
Connectivity to existing improvements	5	6	4	0	0	0
Existing Town jurisdiction	6	0	0	0	0	0
Enhances bike safety	5	1	2	4	6	3
Enhances pedestrian safety	1	3	5	4	6	2
Total	**28**	**21**	**28**	**25**	**27**	**24**

Delivering Results

It is very important to produce immediate results that the community stakeholders, the press, and others can see and enjoy. For example, a new section of sidewalk, new street lights, benches, trash receptacles, drinking fountains, and a freshly painted crosswalk are all visible, tangible elements that people can appreciate. A transportation plan, while crucial to the overall success of a road redesign, is a paper document that most of the public may never see or acknowledge. To keep momentum, the *Estero Boulevard Streetscape Master Plan* needs some "quick wins"—visible ones. Early achievements are real and create the sense that something is happening; that the Town is responsive and that the vision that the community helped create is becoming a reality.

To help the Town Council prioritize project phases, an **Implementation Criteria Table** (see above) has been prepared. A brief description of the criteria follows.

Charrette participants' ranking. At a workshop held during the charrette, participants voted for the segment that they would like to see constructed first.

Ease of implementation. Factors considered in developing the ranking included traffic volume per segment, ease of traffic maintenance, extent of improvements, and time to finish construction.

Within residential zone. The number of dwelling units per segment was obtained from the Lee County Property Appraiser's GIS Department.

No undergrounding utilities required. This applies to the South End

Section 4—Implementation Strategies

segment only. If undergrounding utilities is not required simultaneously with the construction of improvements, it can be done at a later date.

High visibility. The ranking is based on traffic volumes per segment and the location of special features such as gateways and medians.

Connectivity to existing improvements. Times Square in the Core Area is the only area along Estero Boulevard that has significant streetscape improvements. The North End and Civic Core are the only segments that will provided any connectivity to the existing improvements.

Existing Town jurisdiction. At the time of publication of this report, the only segment in the jurisdiction of the Town of Fort Myers Beach is the North End.

Enhances bike safety. While the design solutions will enhance bike safety in every segment, some segments will have greater benefit than others. For instance, currently the High Rise Resort segment does not have paved shoulders, but the South End does. By adding paved shoulders to the High Rise Resort segment, bicyclists will have a greater benefit than in the South End.

Enhances pedestrian safety. While the design solutions will enhance pedestrian safety in every segment, some segments will have greater benefit than others. The segments that include the greatest number of traffic calming devices, medians, and improved crosswalks will have the greatest benefit.

At the Town Council's direction, the criteria in the **Implementation Criteria Table** were weighted to determine the level of importance each has in the designated segments. The resulting segment ranking in the table reflects conditions as they exist today. The application of the implementation criteria is a dynamic process and should be used as a guide to prioritize projects. The table should be updated as circumstances change and specific project milestones are accomplished; this likely will change the ranking.

Using the criteria and associated ranking as implementation guidelines, the following First Phase Action Plan is recommended:

Phase One

- Initiate obtaining control of Estero Boulevard
- Initiate discussion with City of Bonita Springs to coordinate South End gateway improvements
- Establish a tree donation program
- Establish a fund for citizen donations
- Hire Project Coordinator
- Prepare a Drainage, Survey, and Utilities Master Plan
- Proceed with design and construction of North End improvements

Estimated Opinion of Probable Cost

Cost estimates for each individual segment are included in Section 3—Design Solutions. The table on the following page summarizes all of the costs and provides an overall estimated opinion of probable cost.

Funding the Vision

Reinventing Estero Boulevard requires multiple funding partners to manage the project's various components. Access to most public funding sources can be enhanced by a willingness of private sector interests to invest in projects that benefit public and private constituencies. Businesses could "adopt" portions of the street and assume responsibility for routine maintenance and minor physical upgrades. Key property owners could provide an annual contribution to implement the project and maintain public areas.

Reinventing Estero Boulevard requires multiple funding partners

Section 4—Implementation Strategies

Estero Boulevard Streetscape Master Plan Total		
	Low	High
Roadway	$9,060,000	$17,095,000
Gateway	572,900	1,316,200
Traffic Management (3/4)	820,000	820,000
Trolley Stops (1/4)	1,123,900	1,123,900
Crosswalks (5)	1,073,400	1,073,400
Lighting	689,500	689,500
Landscaping	1,414,000	1,414,000
Utilities	7,000,000	7,000,000
Total	**$21,753,700**	**$30,532,000**

The future calls for action, leadership, and commitment—the dreams will become reality through your community pride and dedication.

Potential Funding Sources

In evaluating the opportunity to fund future Estero Boulevard improvements, a number of options were identified, including local, state, federal, and private sources of revenues.

While grant funds may be available for certain aspects or individual components of the project, it is unlikely that the Town will find a single grant or revenue source option that funds an entire segment. More likely, funding will come from a combination of revenue sources that will help make the *Streetscape Master Plan* a reality. To that end, a number of viable funding strategies have been identified in the table at the end of this section.

Please note that once the project design is finalized, additional research will be needed to verify that the *Streetscape Master Plan* will be eligible for certain grants.

THE FUTURE

The *Estero Boulevard Streetscape Master Plan* is a statement of the dreams, hopes, and aspirations of the citizens of the Town of Fort Myers Beach. It has been the WilsonMiller team's unique privilege to assist the Town in the process of visioning for the future, dreaming the dreams, and identifying possibilities. The future calls for action, leadership, and commitment—the dreams will become reality through your community pride and dedication. Thank you for letting the management and staff of WilsonMiller be part of your future.

Estero Boulevard Streetscape Project Potential Funding Sources

State & Federal Funding Sources

FUNDING SOURCE	DESCRIPTION	CONTACT INFORMATION	APPLICIBILITY/NOTES
FDOT Work Program Funds (STP)	Federal and state highway funds for capacity and reconstruction improvements, both on and off the State system. Includes bridge funds.	Glen Ahlert Lee County MPO 941-656-7720	Competitive at the MPO level. Includes specific projects as well as allocation "box".
Transportation Enhancement Activities (TEA-21)	Provision of pedestrian and bicycle facilities; provision of safety and educational activities for pedestrians and bicycles; acquisition of scenic easements and scenic historical sites; scenic or historical highway programs; landscaping and other scenic beautification; control or removal of outdoor advertising; environmental mitigation to address highway runoff pollution.	Ron Gogoi, SWFRPC, (MPO) 941-656-7720	Projects go through MPO for prioritizing. May take up to 5 years to obtain funding based on location on priority list.
Surface Transportation Program (STP) - Transit	Provides states aid under a flexible block grant surface transportation program.	USDOT: 202-366-5004	Mass transit, bikeway, pedestrian and intermodal transportation projects.
Surface Transportation Program (STP) - Safety Funds	Federal funds specifically earmarked for highway safety improvements; may include sidewalks, bike lanes/paths, etc.	John Limbaugh FDOT-SWAO 941-338-2341 Headquarters: David A. Price USDOT 202-366-4652	Earmarked/prioritized through each county's Community Traffic Safety Team.
FDOT Work Program Funds (STP)	Federal and state highway funds for capacity and reconstruction improvements, both on and off the state system. Includes bridge funds.	Glen Ahlert Lee County MPO 941-656-7720	Competitive at the MPO level. Include specific (large) projects in the FDOT 5-Year Work Program as well as small projects from the annual allocation "box".
FDOT Highway System Streetscape Grant District 1 Landscape Program	For use on state highways, limited to $200,000, competitive within the district and at the MPO levels.	John Limbaugh FDOT - SWAO 941-338-2341	Annual application; competitive.
Florida Highway Beautification Council Grant Program	The Florida Highway Beautification Council through the FDOT provides funds for landscape beautification projects on Florida's roadways.	John Limbaugh FDOT - SWAO 941-338-2341	The funding requires a 50% local match.
Non-Urbanized Area Transit Formula Grants	Grants to state and local agencies for mass transportation capital and operation costs.	USDOT Patricia Levine 202-366-2053	Trolley & transit stop improvements.
Transit Capital Grants	Financing and acquisition, construction, reconstruction, and improvement of mass transit facilities and equipment.	USDOT Patricia Levine 202-366-2053	Trolley & transit stop improvements.
Toll Facilities Revolving Trust Fund (Loans)	Enhance financial feasibility of revenue-producing road projects undertaken by local governments.	Nick Collins FDOT 850-414-4469	In the event the bridge becomes a toll facility. May be used for stormwater management, advanced right-of-way purchases.
National Tree Trust	Provides financial assistance and/or trees and planting material to municipalities with the intent of increasing the number of trees planted, maintained, managed, protected and cultivated in communities and urban environments.	Community Tree Planting: Jackie Bentz; Partnership Enhancement Program: Cindy Zimar; National Tree Trust: Jennifer Hinrichs 800-846-8733	To assist with landscaping along Estero Boulevard and roundabouts.
National Urban and Community Forestry Grant Program	The funds are for projects that develop or enhance a community's ability to have a sustained, comprehensive tree care program.	Mike Humphrey 850-414-8602	The federal share shall be 50% reimbursable with matching 50% coming from local funds. No more than 20% of the funds may be used for tree planting.
Florida Small Cities Community Development Block Grant - Commercial Revitalization	The Department of Community Affairs provides grants to eligible jurisdictions to assist in revitalizing downtown areas. Eligible projects include rehabilitation of privately owned building facades, modifications to handicapped access, sidewalks, landscaping, streets, drainage and parks.	HUD 202-708-3587	
Community Development Block Grants - Section 108 Loan Guarantees	Helps Community Development Block Grant eligible communities undertake large community development projects by guaranteeing private market loans secured by the communities' future CDBG grants.	Local/Regional: Contact HUD Headquarters: Paul Webster 202-708-1871	
NEA Grants	To foster the creation and presentation of artwork, etc.	Nancy Hanks 202-682-5400	Potential to use art/sculptures in roundabouts.
FEMA	Flood Mitigation Assistance program, to reduce or eliminate long-term risk of flood damage to homes and other structures.		Enhanced Island-wide stormwater management capabilities.
Environmental Education Grants	To support projects that design, demonstrate, or disseminate practices, methods, or techniques related to the teaching of environmental issues for students, teachers and the general public.	Madeline Strong or Jerrie Lindsey, FGFWFC 850-487-0123 USEPA: George Walker, Diane Berger or Sheri Jojokian 202-260-8619	May potentially apply to coastal development/sea turtle lighting and like.
Greenways and Trails (formerly Rails to Trails)	Funds specific planning projects, construction and public education efforts that stimulate or support greenways or trail initiatives.	Fred Ayer 850-488-3701	
Sustainable Development Challenge Grant Program	Provides grants to communities as a way of catalyzing community-based and regional projects designed to promote sustainable development, build partnerships, and leverage public and private investments to enhance environmental quality.	USEPA: 202-260-6812 Pamela A. Hurt 202-260-2441	Depends on environmental protection offered by project/possible applicability to stormwater runoff.
Watershed Protection and Flood Prevention Program	Solve natural resource and related economic problems on a watershed basis, including watershed protection, water quality, water supply, fish/wildlife habitat enhancements, wetlands creation/restoration, public recreation in watersheds of 250,000 or fewer acres.	NRCS: 202-720-3527	Flood protection construction; improved stormwater management (quality and quantity) prior to discharge into bay.
Resource Conservation and Development Program	Helps residents to work together and plan how they can actively solve environmental, economic, and social problems facing their communities. Can be used for land conservation, water management, community development and environmental enhancement.	NRCS: 202-720-2241	Must be designated as RC&D.
Coastal Zone Management Administration/Implementation Awards	Assists states in implementing and enhancing coastal zone management programs approved by Secretary of Commerce. Includes natural hazards management, public access improvements, assessment of impacts of coastal growth and development, and demonstration projects with potential to improve coastal zone management.	Dept of Commerce 301-713-3155 ext 195	Pedestrian and bicycle enhancements to beach access points.
Coastal Service Center Cooperative Agreements	Supports projects aimed at developing creative science-based solutions to coastal management issues that will allow maintenance or improvement of natural resources while also allowing for economic growth. Includes landscape characterization and restoration, coastal change analysis program, coastal remote sensing, etc.	Dept of Commerce 803-974-6200	
Water Quality Cooperative Agreements	Support the creation of unique and new approaches to meeting stormwater, combined sewer outflows, sludge and pretreatment requirements as well as enhancing state capabilities.	USEPA 202-260-9545	Improved storm water management (quality and quantity).
1999 Urban and Community Forestry	Includes Local Government Program Development, demonstration for site specific projects, nonprofit administration, information and education projects and urban forestry or arboricultural training.	Division of Forestry 941-850-6724	Street tree improvements; enhanced "treescape" development along corridor.
Florida Main Street Program	The Division of Historical Resources under the Department of State provides seed money grant and technical assistance for eligible communities.		Encourages revitalization of traditional downtown commercial districts through a community-based comprehensive approach.
Florida Communities Trust	Grant and loan assistance for acquisition of conservation and outdoor recreational lands needed to implement the local government comprehensive plans.	Anne Peery 850-922-2207	
Florida Recreation Development Assistance Program	Funds outdoor recreational projects (FRDAP).	Bureau of Design and Recreational Services 850-488-7896	
Florida's Plant-A-Tree Trust Fund	The state share shall not exceed 50% reimbursable with matching 50% coming from local funds. Use of the funds are for projects involving native trees on rural acres or urban landscapes.		

County & Municipal Funding Sources

FUNDING SOURCE	DESCRIPTION	CONTACT INFORMATION	APPLICIBILITY/NOTES
General Revenues	Property tax revenues; sales tax revenues.		
Local Gas Taxes	Town share of Lee County gas tax revenues, including Local Option Gas Taxes.		
Utility Taxes & Franchise Fees	Flexible funding source.		
Special Taxing Districts	MSTUs & MSBUs, including street lighting districts; landscape/beautification districts.		
Private & Public/Private Initiatives	Community & developer contributions, donations, etc.		
Adopt an Improvement Program	Variety of techniques to cover the initial capital investment as well as ongoing maintenance.		
Bond Financing	General Obligation (GO) Bonds that require a referendum, and Revenue Bonds pledging identified sources of revenues (other than property taxes).		
Tax Increment Financing (TIF) through a Community Redevelopment Agency	Infrastructure improvements funded through the use of increases in the tax base resulting from the improvements.		

Appendix

Town of Fort Myers Beach Comprehensive Plan
Policies Guiding the Estero Boulevard Streetscape Master Plan

COMMUNITY DESIGN ELEMENT

Policy 1-A-1: Changes along Estero Boulevard should improve on the characteristics that make it a boulevard in character and not just in name, safe and interesting to walk along, impressive landscaping, and scaled to people rather than high-speed traffic.

Policy 1-A-2: The town should develop a sidewalk and streetscape plan for all of Estero Blvd that builds on the design theme of the 1997 improvements from Time Square and to the Lani Kai. The plan should recreate the historic "Avenue of Palms" concept by adding appropriate palm trees such as coconuts on both sides between the sidewalk and new curbs. This plan should also address related needs such as parking and trolley pull-offs, and should be sufficiently detailed to estimate costs and suggestion potential phases of construction. Priorities should include positive impacts on:

i. stimulating revitalization consistent with the town's overall vision in the comprehensive plan;
ii. completing pedestrian and bike path linkages from one end of the island to the other;
iii. managing traffic flow;
iv. improving pedestrian crossings; including push button (demand) lights; textured materials to emphasize crossings to drivers; and covered seating areas and other "oasis" amenities at trolley stops and beach accesses;
v. lowering construction and maintenance costs from the original design;
vi. correcting drainage problems;
vii. coordinating with utility undergrounding; and
viii. working within new and available sources of funds.

After completing that plan, the town shall establish a phased schedule of capital improvements to complete this network.

Policy 1-B-1: Create Estero Blvd gateways or entry features at the south end near Big Carlos Pass and near the touchdown of the Matanzas Pass bridge.

Policy 1-B-5: Develop a program for placing utilities underground that addresses both public and private sector development.

Policy 1-B-6: Conduct regular and adequate street cleaning (sweeping or vacuuming) throughout the town. Evaluate effective methods to keep streets and drainage systems clean despite the abundance of blown sand and the absence of curbs.

Policy 3-D-3: Continue with sidewalk improvements:

i. Standard sidewalk widths should be provided by the public sector and/or private developers in each development project as it is implemented. Consider a program for private sidewalk reservation through dedication or easement, particularly along Old San Carlos.
ii. Use selected materials in public rights-of-way and private property improvements adjacent to sidewalks, such as in plazas or building setbacks.

the road; interesting vistas for drivers; and avoidance of overly wide travel lanes or intersections.

Policy 7-E-4: SIDEWALKS AND BIKEWAYS: The town shall work toward major expansion of sidewalks and bikeways. In addition to the next phase of Estero Boulevard sidewalks 9see Policy 7-E-1 above), the town shall support the following projects:

i. Support Lee County's imminent plans to fill the gaps from Buccaneer to Estrellita Drive and from the Villa Santini Plaza to Bay Beach Lane using federal funds;
ii. Initiate extensive improvements by 1999 to Old San Carlos and Crescent Street in conjunction with parking improvements.
iii. Initiate engineering studies by 1999 for bikeways and additional sidewalks on the second side of Estero Blvd and improved pedestrian crossings, including consideration of a pedestrian overpass at Times Square.

Policy 7-G-4: ADDITIONAL BRIDGE CAPACTIY: Additional bridge capacity should not be directed to Times Square (except for potential restriping). New lanes to Old San Carlos or Crescent Street would also be undesirable, as most congestion is caused by conditions on Estero Boulevard south of Times Square. Previously proposed bridges from Winkler Road or Coconut Road are infeasible from environmental and financial standpoints and need not be considered further.

Policy 7-H-1: PEDESTRIAN OVERPASSES: Although pedestrian overpasses are often ignored by pedestrians, an overpass providing a panoramic view of the Gulf might be attractive enough to reduce at-grade crossings at Times Square without discouraging foot traffic in this highly congested area. Even without an overpass, the pedestrian-actuated stop light may be replaceable with a flashing caution light to minimize effects of the crossing on traffic flow.

Policy 7-H-3: LEFT-TURNS AT TIMES SQUARE: Northbound traffic headed for Lynn Hall Park now turns left just past Times Square. These turns could interfere with traffic flow on Estero Blvd; if so, alternatives using Crescent Street should be considered.

Policy 7-H-7: DELIVERY VEHICLES: To avoid interference with traffic and pedestrian flow, the town shall develop a strategy to limit commercial deliveries during peak traffic periods.

STORM DRAINAGE COMMENTARY

There is a desire among the residents of Estero Boulevard to find ways to improve the drainage along Estero Boulevard, install curb, and provide water quality treatment for the runoff so as to minimize the impact of the runoff on the Bay. The existing routing of runoff through the adjacent streets either by piping, swales or a combination provides different levels of water quality treatment. The streets such as Bay Mar probably provide the best treatment of runoff prior to discharge into the Bay. There is no pipe system except for the outfall, and there is a good flow length through a swallow swale system which provides water quality treatment, and an opportunity for infiltration. Other streets with pipe culverts and swales, or piping, pipe culverts and swales, provide the next best level of water quality treatment. The system with just underground pipe systems provide the least degree of water quality treatment.

The most efficient method for solving drainage problems is to install an underground drainage system, with a positive outfall. Either a direct outlet to the Bay or a canal would be the preferable location of the outfall. This type of system does not promote water quality treatment of the runoff. Several options exist to help provide water quality treatment in this type of system. One method is to provide a swale at the pipe outlet before the runoff discharges to the Bay. An example of this solution exists at the end of Carolina Street/ Ostego Circle. There is an outfall between two houses at the end of the streets, with vegetation, that provides some degree of water quality treatment prior to discharge to the Bay.

Water quality treatment could also be provided by installation of water quality inlets, oil/water separators, or some other type of inline treatment device. These devices tend to be high maintenance, but do provide a level of water quality treatment.

Another water quality treatment method would be to provide dry detention areas, where the first flush of runoff could discharge and infiltrate into the ground, or bleed down from the detention area at a slow rate. The major storm discharge would then be piped to an outfall point. These dry detention areas could be on property adjacent to the street, in landscape islands, or could be on property purchased for that purpose.

The installation of curb and gutter itself could create additional drainage problems. The normal curb height is six inches. Some of the areas adjacent to Estero Boulevard are very flat, and will require careful design of the curb and gutter to not cause ponding on private property adjacent to the roadway. Although a six inch curb will help with the separation of pedestrians from motor vehicles, the use of curb needs to be looked at carefully. The road can be designed with appropriate storm drain systems to eliminate or minimize storm drainage ponding on the road, but by raising the grade adjacent to the road even six inches, there is a potential to cause drainage problems on the private property adjacent to the road. A curb and gutter design with less curb height may be advisable, i.e. a three to four inch curb height.

- Ver: mal-

The South Florida Water Management District (SFWMD) involvement in this project will be minimized if no additional impervious area is created as a result of the streetscape project. There involvement will include review of any piping systems installed to correct drainage problems. In areas where piping does not exist, the SFWMD will most likely require water quality treatment for those areas. Their thinking on this situation would be that some degree of water quality treatment is presently being provided with the indirect rout the runoff takes to reach the Bay. That water quality treatment is being removed by directly piping runoff to the Bay, and therefore the treatment needs to be replaced.

Installing underground pipe systems with direct discharge to an outfall, as noted above, is the most expedient way to rid yourself of a storm drainage problem. These solutions are usually expensive, require easements for outfalls, and provide minimal, if any, water quality benefits. Construction of these types of systems also require disruption to the roads and properties where the construction is required. Sometimes though less is more. The existing method which runoff takes to reach the Bay is failing in some areas, but some areas may actually not have any runoff problems. One approach to the drainage for Estero Boulevard between Alva and Flamingo would be to only provide piping systems where absolutely necessary to solve specific storm drainage problems. The remainder of Estero Boulevard would then be reviewed carefully to try to maintain the existing flow patterns for the runoff, thus providing the treatment that is available in the existing system. Water Quality for the systems that are piped, would then be provided by one of the three methods noted above, i.e. treatment at the outfall, dry detention or an inline treatment device. This solution would require some field engineering, but would be less disruptive to the residents involved in the project, and take advantage of existing functioning systems.

Storm drainage for the area south of Flamingo should be maintained in its current state. Some of the deeper roadside swales may need to be reworked to allow installation of sidewalk. Sidewalk should not be the flow conveyance for the swale as currently exists in some areas along Estero Boulevard. The system along Bay Mar should be mimicked along Estero Boulevard where driveways occur a close intervals. This shallow swale system with the driveway part of the swale system seems to work well and provides better water quality treatment, and should be used instead of deep ditches and driveway culverts.

Reduction of impervious area should also be embraced where ever possible. Some solutions to parking areas already exist along Estero Boulevard. Types of surface include open graded aggregate or stone, pavers which space between pavers to allow for infiltration, grass parking, grasscrete or similar products, and porous pavement. Porous pavement is not recommended for roadways, as the wearing properties of the pavement on heavily used areas is much less than normal pavement.

Infiltration or exfiltration systems may also be considered for some areas. SFWMD does not like these systems for this part of Florida, but may be persuaded to accept these systems on a limited basis, with good engineering justification.

In summary simple solutions to the storm drainage problems along Estero Boulevard should be explored. Providing underground storm piping for the entire project is the easiest engineered solution to storm drainage. Underground piping is an expensive and disruptive solution. The Town of Fort Myers Beach should be better served with a site specific solution to storm drainage, with an eye for innovative solutions that may be less costly and more sensitive to the area to be served by the system. Water quality treatment should be easier to provide with these types of systems individually tailored to the particular problems encountered.

STORM DRAIN COST IMPLICATIONS

The cost of the solutions noted above are as different as the solutions themselves. Cost of underground piping probably being the most expensive, with keeping the existing system in place as the least costly.

Underground piping would include pipe (average 36-inch reinforced concrete pipe), inlets(two to four per block) , manholes (one to two per block), installation of the pipe and structures, piping to an appropriate outfall, and maintenance of traffic. Piping to an outfall involves pavement replacement on the side streets and restoration of any areas disturbed outside of the pavement on the side streets. Water quality treatment will also need to be included at the outfall or by providing inline treatment. All costs associated with pavement and curb and gutter construction along Estero Boulevard should be added to the costs of storm drainage that follow. Costs for this option are summarized as follows:

Pipe	$70.00 per linear foot
Structures	$50.00 per linear foot
Piping to Outfall	$40.00 per linear foot
Maintenance of Traffic	$80.00 per linear foot
Water Quality Treatment	$80.00 per linear foot
Total	$320.00 per linear foot

Notes:

1. Piping based on 36-inch Reinforced Concrete Pipe at average depth.
2. Structures based on four inlets and 2 manholes per block.
3. Piping to outfall includes 800 linear feet of outfall piping per 15 blocks, and pavement

- Ver: mal-

replacement for the entire length of the outfall piping.

4. Maintenance of traffic based on recent bid data from City of Fort Myers project. Unit cost for less than 2000 linear feet of roadway construction may be higher.
5. Water quality treatment based on two inline treatment devices per block for water quality.
6. Costs do not include right-of-way acquisition.

Using the existing system with slight modifications can be done for less cost. Piping to enable the west side of the road to drain to the east would be required. This could be accomplished by providing inlets on the west side of the pavement, with piping under the pavement, and a ditch inlet to allow the storm water to flow out into the ditch. This system would include minimal piping (150 feet per intersection of 36 inch reinforced concrete pipe), and two inlet structures. Maintenance of these systems would be required to remove any sediment that accumulates in the pipe.

Costs for this option are summarized as follows:

Pipe	$50.00 per linear foot
Structures	$20.00 per linear foot
Maintenance of Traffic	$40.00 per linear foot
Total	$110.00 per linear foot

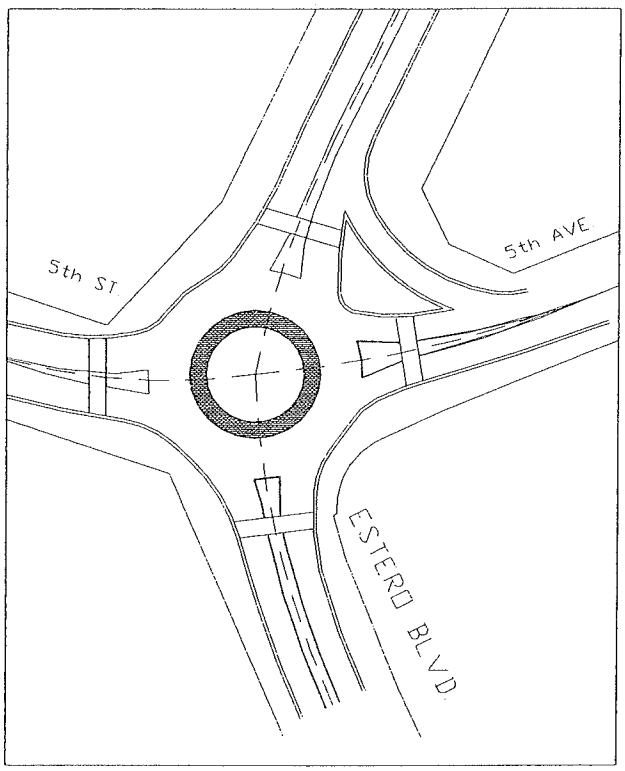
Notes:

1. Piping based on 36-inch Reinforced Concrete Pipe at average depth (150 linear feet per block)
2. Structures assumes two inlets per block.
3. Maintenance of traffic based on minimal requirement for maintenance of traffic.
4. Costs do not include right-of-way acquisition.

Water quality treatment would be provided by the existing swales along the side streets. The level of treatment would be the same as provided in the existing condition. More piping may be required in selected areas where drainage problems are known or found in the analysis of the existing conditions possibly increasing the cost. Additional water quality treatment or some repair of the side street ditches may also be required for some streets, also potentially making the cost higher.

The costs noted above should be considered very approximate, but the simpler solution is considerably less costly. These two cost options show the range of solutions for storm drainage. The actual cost will most likely be between these two cost options. It would seem prudent for both water quality and economics to design a system closer to the second option.

Estero Boulevard Roundabout Design Report



A Gateway Roundabout

Intersection:	Estero Boulevard/5th Avenue/5th Street
Agency:	Town of Fort Myers Beach
Prepared by:	Michael Wallwork, P.E.
Date:	April 3, 2000

Alternate Street Design, P.A.
1516 Plainfield Avenue, Orange Park, Florida 32073-3925
904-269-1851, Fax 904-278-4996, Email: wallwork@mediaone.net

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	553	809	0.684	7.9	C
		553	809	0.684	7.9	C
South: South Approach						
32	LTR	1009	1249	0.808*	4.6	B
		1009	1249	0.808	4.6	B
East: East Approach						
22	LT	46	315	0.146	13.5	C
23	R (Con)	30	1900	0.016	0.0	A#
		76	2215	0.146	8.1	B
North: North Approach						
42	LTR	985	1573	0.626	0.9	B
		985	1573	0.626	0.9	B
ALL VEHICLES:		2623	5846	0.808	4.0	B
INTERSECTION:		2623	5846	0.808	4.0	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Arrival Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	95% Queue (ft)	Shrt Lane (ft)
West:	West Approach											
1 LTR	336	22	195	553	1				0.683	7.9	197	
	336	22	195	553	1				0.683	7.9	197	
South:	South Approach											
1 LTR	163	812	34	1009	1				0.808	4.6	289	
	163	812	34	1009	1				0.808	4.6	289	
East:	East Approach											
1 LT	23	23	0	46	4				0.146	13.5	20	
2 R	0	0	30	30	3	1900			0.016	0.0		
	23	23	30	76	4				0.146	8.1	20	
North:	North Approach											
1 LTR	20	690	275	985	1				0.626	0.9	129	
	20	690	275	985	1				0.626	0.9	129	

ALL VEHICLES	Tot Arv.	% HV	Max X	Aver. Delay	Max Queue
	2623	1	0.808	4.0	289

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Values printed in this table are back of queue.

Lan No.	Mov No.	Arv Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West:	West Approach												
1 LTR	12	336	22	195	553	13.0N	-	-	-	60	809	0.683	100
South:	South Approach												
1 LTR	32	163	812	34	1009	13.0N	-	-	-	60	1249	0.808	100
East:	East Approach												
1 LT	22	23	23	0	46	13.0N	-	-	-	46	315	0.146	100
2 R	23	0	0	30	30	13.0N	-	-	-	30	1900	0.016	100
North:	North Approach												
1 LTR	42	20	690	275	985	13.0N	-	-	-	60	1573	0.626	100

N Width value was not used for saturation flow adjustment in this case. (Lane width adjustment does not apply at sign-controlled intersections or to gap-acceptance capacities at signalised intersections).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total ga/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h	Lead Total kg/h
West: West Approach							
12 LTR	18.8	144.63	0.220	8.42	0.339	178.1	0.00000
	18.8	144.63	0.220	8.42	0.339	178.1	0.00000
South: South Approach							
32 LTR	33.7	253.62	0.391	15.08	0.610	318.5	0.00000
	33.7	253.62	0.391	15.08	0.610	318.5	0.00000
East: East Approach							
22 LT	1.6	12.58	0.019	0.69	0.028	14.9	0.00000
23 R	0.9	6.84	0.010	0.37	0.016	8.9	0.00000
	2.5	19.42	0.029	1.07	0.044	23.8	0.00000
North: North Approach							
42 LTR	32.1	238.02	0.369	14.08	0.579	303.5	0.00000
	32.1	238.02	0.369	14.08	0.579	303.5	0.00000
INTERSECTION:	87.1	655.70	1.009	38.65	1.572	823.8	0.00000

Intersection ID:
Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Perf. Index	Aver. Speed (mph)
West: West Approach						
553	1.21	7.9	0.735	1.04	16.60	30.3
South: South Approach						
1009	1.29	4.6	0.660	0.86	27.46	31.7
East: East Approach						
76	0.17	8.1	0.506	0.79	2.06	30.6
North: North Approach						
985	0.26	0.9	0.399	0.66	22.45	33.1
INTERSECTION:						
2623	2.93	4.0	0.573	0.82	68.58	31.8

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Arv Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Short Lane (ft)
West: West Approach									
1 LTR	12	553	809	0.683	7.9	1.04	7.8	197	
South: South Approach									
1 LTR	32	1009	1249	0.808	4.6	0.86	11.5	289	
East: East Approach									
1 LT	22	46	315	0.146	13.5	0.94	0.8	20	
2 R	23	30	1900	0.016	0.0		0.8#		
North: North Approach									
1 LTR	42	985	1573	0.626	0.9	0.66	5.1	129	

Concentration/density (pcse per km, or per mile if US units)

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

East: East Approach									
22	LT	46	1311	1.0	1311	315	0.85	482	100	0.146
23	R	30	0			1900	0.98	6107	100	0.016
North: North Approach										
42	LTR	985	207	1.0	207	1573	0.85	36	100	0.626

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Degree of saturation (highest)	=	0.808
Practical Spare Capacity (lowest)	=	5 %
Total vehicle flow (veh/h)	=	2623
Total vehicle capacity, all lanes (veh/h)	=	5846
Average intersection delay (s)	=	4.0
Largest average movement delay (s)	=	13.5
Total vehicle delay (veh-h/h)	=	2.93
Largest back of queue, 95% (ft)	=	289
Performance Index	=	68.58
Total fuel (ga/h)	=	87.1
Total cost ($/h)	=	655.70
Intersection Level of Service	=	B
Worst movement Level of Service	=	C

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% (vehs)	Back (ft)	Perf. Index	Aver. Speed (mph)
West: West Approach									
12	LTR	1.21	7.9	0.73	1.04	7.8	197	16.60	30.3
South: South Approach									
32	LTR	1.29	4.6	0.66	0.86	11.5	289	27.46	31.7
East: East Approach									
22	LT	0.17	13.5	0.83	0.94	0.8	20	1.45	28.3
23	R	0.00	0.0			0.8#		0.61	35.1
North: North Approach									
42	LTR	0.26	0.9	0.39	0.66	5.1	129	22.45	33.1

Largest density/concentration (number of passenger car space equivalents (pcse) per km or per mile if US units) for any lane

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ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout

PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table R.5 - ROUNDABOUT CAPACITY & LEVEL OF SERVICE - SIDRA & HCM MODELS

Mov No.	Arv Flow (veh /h)	SIDRA Cap. (veh /h)	SIDRA Deg. Satn x	SIDRA Av. Delay (sec)	SIDRA LOS	HCM 1997 Lower Cap. (veh /h)	HCM 1997 Lower Deg. Satn x	HCM 1997 Lower Av. Delay (sec)	HCM 1997 Lower LOS	HCM 1997 Upper Cap. (veh /h)	HCM 1997 Upper Deg. Satn x	HCM 1997 Upper Av. Delay (sec)	HCM 1997 Upper LOS
West: West Approach													
12 LTR	553	809	0.684	7.9	C	615	0.899	24.9	D	775	0.714	12.2	C
		809	0.684	7.9	C	615	0.899	24.9	D	775	0.714	12.2	C
South: South Approach													
32 LTR	1009	1249	0.808	4.6	B	840	1.201	103.2	F	1030	0.980	21.9	C
		1249	0.808	4.6	B	840	1.201	103.2	F	1030	0.980	21.9	C
East: East Approach													
22 LT	46	315	0.146	13.5	C	422	0.109	14.7	C	- - - -	NA	- - - -	
23 R	30	- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
North: North Approach													
42 LTR	985	1573	0.626	0.9	B	996	0.989	18.1	C	1178	0.836	4.4	B
		1573	0.626	0.9	B	996	0.989	18.1	C	1178	0.836	4.4	B
ALL VEHICLES:		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	

NA Values for this roundabout capacity model have not been calculated because the model was not applicable for the given roundabout conditions. Note that the HCM models are only applicable to single-lane roundabouts with circulating flows less than 1200 veh/h. Also note that results are not calculated for any of the models for slip lane or continuous movements. See SIDRA Output Guide Appendix Section A3.8 for roundabout limits.

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Arv Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: West Approach									
12 LTR	553	731	1.0	731	809	0.85	24	100	0.684
South: South Approach									
32 LTR	1009	377	1.0	377	1249	0.85	5	100	0.808*

Intersection ID:
Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream Flow (veh/h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect
West: West Approach										
64	20	104	1	1	13.00	731	1.0	731	0	N
South: South Approach										
64	20	104	1	1	13.00	377	1.0	377	0	N
East: East Approach										
64	20	104	1	1	13.00	1311	1.0	1311	0	N
North: North Approach										
64	20	104	1	1	13.00	207	1.0	207	0	N

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circ/ Exit Flow (pcu/h)	Intra- Bunch Headway (s)	Prop. Bunched Vehicles	Critical Gap (s)	Follow Up Headway (s)
West: West Approach							
Left	1	Dominant	731	2.00	0.638	3.00U	2.46
Thru	1	Dominant	731	2.00	0.638	3.00U	2.46
Right	1	Dominant	731	2.00	0.638	3.00U	2.46
South: South Approach							
Left	1	Dominant	377	2.00	0.407	3.00U	2.13
Thru	1	Dominant	377	2.00	0.407	3.00U	2.13
Right	1	Dominant	377	2.00	0.407	3.00U	2.13
East: East Approach							
Left	1	Dominant	1311	2.00	0.838	3.00U	2.28
Thru	1	Dominant	1311	2.00	0.838	3.00U	2.28
Right	2	Continuous					
North: North Approach							
Left	1	Dominant	207	2.00	0.250	3.00U	1.95
Thru	1	Dominant	207	2.00	0.250	3.00U	1.95
Right	1	Dominant	207	2.00	0.250	3.00U	1.95

U User specified critical gap or follow-up headway for an entry stream
* Critical gap or follow-up headway set to MINIMUM value

ARRB Transport Research Ltd - SIDRA 5.20

Alternate Street Design, P.A.
Orange Park Registered User No. 0172
Time and Date of Analysis 11:27 AM, Mar 15,2000

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:

SIDRA US Highway Capacity Manual (1997) Version
Roundabout

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Roundabout
  Driving on the right-hand side of the road
  SIDRA US Highway Capacity Manual (1997) Version
  Input data specified in US units
  Default Values File No. 11
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Delay definition: Stop Line delay
  Geometric delay not included
  Delay formula: Highway Capacity Manual
  Level of Service based on: Delay (HCM)
  Queue definition: Back of queue, 95th_Percentile

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.0 - TRAFFIC FLOW DATA (Flows in veh/hour as used by the program)

	Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
		LV	HV	LV	HV	LV	HV		
West:	West Approach								
	12	333	3	21	1	193	2	1.00	0.90
South:	South Approach								
	32	161	2	804	8	33	1	1.00	0.90
East:	East Approach								
	22	22	1	22	1	0	0	1.00	0.90
	23	0	0	0	0	29	1	1.00	0.90
North:	North Approach								
	42	19	1	683	7	272	3	1.00	0.90

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	283	751	0.377	5.1	B
		283	751	0.377	5.1	B
South: South Approach						
32	LTR	780	1581	0.493	0.8	B
		780	1581	0.493	0.8	B
East: East Approach						
22	LT	31	560	0.055	6.9	B
23	R (Con)	13	1900	0.007	0.0	A#
		44	2460	0.055	4.8	B
North: North Approach						
42	LTR	930	1681	0.553*	0.7	B
		930	1681	0.553	0.7	B
ALL VEHICLES:		2037	6472	0.553	1.5	B
INTERSECTION:		2037	6472	0.553	1.5	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Arrival Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	95% Queue (ft)	Shrt Lane (ft)
West:	West Approach											
1 LTR	143	15	125	283	1				0.377	5.1	71	
	143	15	125	283	1				0.377	5.1	71	
South:	South Approach											
1 LTR	106	651	23	780	1				0.493	0.8	104	
	106	651	23	780	1				0.493	0.8	104	
East:	East Approach											
1 LT	15	16	0	31	6				0.055	6.9	10	
2 R	0	0	13	13	8	1900			0.007	0.0		
	15	16	13	44	7				0.055	4.8	10	
North:	North Approach											
1 LTR	9	623	298	930	1				0.553	0.7	131	
	9	623	298	930	1				0.553	0.7	131	

ALL VEHICLES	Tot Arv.	% HV	Max X	Aver. Delay	Max Queue
	2037	1	0.553	1.5	131

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Values printed in this table are back of queue.

Lan No.	Mov No.	Arv Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	Cap (veh /h)	Cap (veh /h)	Deg. Satn x	Lane Util %
West:	West Approach												
1 LTR	12	143	15	125	283	13.0N	-	-	-	60	751	0.377	100
South:	South Approach												
1 LTR	32	106	651	23	780	13.0N	-	-	-	60	1581	0.493	100
East:	East Approach												
1 LT	22	15	16	0	31	13.0N	-	-	-	31	560	0.055	100
2 R	23	0	0	13	13	13.0N	-	-	-	13	1900	0.007	100
North:	North Approach												
1 LTR	42	9	623	298	930	13.0N	-	-	-	60	1681	0.553	100

N Width value was not used for saturation flow adjustment in this case. (Lane width adjustment does not apply at sign-controlled intersections or to gap-acceptance capacities at signalised intersections).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total ga/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h	Lead Total kg/h
West: West Approach							
12 LTR	9.4	71.04	0.109	4.16	0.169	88.8	0.00000
	9.4	71.04	0.109	4.16	0.169	88.8	0.00000
South: South Approach							
32 LTR	25.6	190.58	0.295	11.22	0.460	242.0	0.00000
	25.6	190.58	0.295	11.22	0.460	242.0	0.00000
East: East Approach							
22 LT	1.0	8.01	0.012	0.46	0.019	9.8	0.00000
23 R	0.4	2.97	0.005	0.16	0.007	3.8	0.00000
	1.4	10.97	0.017	0.62	0.026	13.6	0.00000
North: North Approach							
42 LTR	30.2	224.05	0.347	13.24	0.545	286.0	0.00000
	30.2	224.05	0.347	13.24	0.545	286.0	0.00000
INTERSECTION:	66.7	496.64	0.767	29.25	1.201	630.4	0.00000

Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Perf. Index	Aver. Speed (mph)
West: West Approach						
283	0.40	5.1	0.705	0.83	7.51	31.5
South: South Approach						
780	0.18	0.8	0.372	0.65	17.79	32.8
East: East Approach						
44	0.06	4.8	0.515	0.71	1.11	31.7
North: North Approach						
930	0.19	0.7	0.363	0.62	21.08	33.2
INTERSECTION:						
2037	0.83	1.5	0.417	0.66	47.49	32.8

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Arv Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Short Lane (ft)
West: West Approach									
1 LTR	12	283	751	0.377	5.1	0.83	2.8	71	
South: South Approach									
1 LTR	32	780	1581	0.493	0.8	0.65	4.1	104	
East: East Approach									
1 LT	22	31	560	0.055	6.9	0.77	0.4	10	
2 R	23	13	1900	0.007	0.0		0.3#		
North: North Approach									
1 LTR	42	930	1681	0.553	0.7	0.62	5.2	131	

Concentration/density (pcse per km, or per mile if US units)

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

	Saturation Flow	Min	Tot

East: East Approach										
22	LT	31	900	1.0	900	560	0.85	1435	100	0.055
23	R	13	0			1900	0.98	****	100	0.007
North: North Approach										
42	LTR	930	135	1.0	135	1681	0.85	54	100	0.553*

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Degree of saturation (highest)	=	0.553
Practical Spare Capacity (lowest)	=	54 %
Total vehicle flow (veh/h)	=	2037
Total vehicle capacity, all lanes (veh/h)	=	6472
Average intersection delay (s)	=	1.5
Largest average movement delay (s)	=	6.9
Total vehicle delay (veh-h/h)	=	0.83
Largest back of queue, 95% (ft)	=	131
Performance Index	=	47.49
Total fuel (ga/h)	=	66.7
Total cost ($/h)	=	496.64
Intersection Level of Service	=	B
Worst movement Level of Service	=	B

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
West: West Approach									
12	LTR	0.40	5.1	0.70	0.83	2.8	71	7.51	31.5
South: South Approach									
32	LTR	0.18	0.8	0.37	0.65	4.1	104	17.79	32.8
East: East Approach									
22	LT	0.06	6.9	0.73	0.77	0.4	10	0.84	30.5
23	R	0.00	0.0			0.3#		0.26	35.1
North: North Approach									
42	LTR	0.19	0.7	0.36	0.62	5.2	131	21.08	33.2

Largest density/concentration (number of passenger car space equivalents (pcse) per km or per mile if US units) for any lane

---

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:

Intersection ID:
Roundabout

Table R.5 - ROUNDABOUT CAPACITY & LEVEL OF SERVICE - SIDRA & HCM MODELS

Mov No.	Arv Flow (veh /h)	SIDRA Cap. (veh /h)	SIDRA Deg. Satn x	SIDRA Av. Delay (sec)	SIDRA LOS	HCM 1997 Lower Cap. (veh /h)	HCM 1997 Lower Deg. Satn x	HCM 1997 Lower Av. Delay (sec)	HCM 1997 Lower LOS	HCM 1997 Upper Cap. (veh /h)	HCM 1997 Upper Deg. Satn x	HCM 1997 Upper Av. Delay (sec)	HCM 1997 Upper LOS
West: West Approach													
12 LTR	283	751	0.377	5.1	B	663	0.427	6.1	B	830	0.341	4.6	B
		751	0.377	5.1	B	663	0.427	6.1	B	830	0.341	4.6	B
South: South Approach													
32 LTR	780	1581	0.493	0.8	B	1009	0.773	3.0	B	1217	0.641	1.3	B
		1581	0.493	0.8	B	1009	0.773	3.0	B	1217	0.641	1.3	B
East: East Approach													
22 LT	31	560	0.055	6.9	B	521	0.060	7.9	C	666	0.047	6.8	B
23 R	13	- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
North: North Approach													
42 LTR	930	1681	0.553	0.7	B	1035	0.899	5.3	B	1245	0.747	1.4	B
		1681	0.553	0.7	B	1035	0.899	5.3	B	1245	0.747	1.4	B
ALL VEHICLES:		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	

NA Values for this roundabout capacity model have not been calculated because the model was not applicable for the given roundabout conditions. Note that the HCM models are only applicable to single-lane roundabouts with circulating flows less than 1200 veh/h. Also note that results are not calculated for any of the models for slip lane or continuous movements. See SIDRA Output Guide Appendix Section A3.8 for roundabout limits.

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Arv Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: West Approach									
12 LTR	283	645	1.0	645	751	0.85	126	100	0.377
South: South Approach									
32 LTR	780	165	1.0	165	1581	0.85	72	100	0.493

Intersection ID:
Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

	Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream: Flow (veh/h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect
West:	West Approach										
	64	20	104	1	1	13.00	645	1.0	645	0	N
South:	South Approach										
	64	20	104	1	1	13.00	165	1.0	165	0	N
East:	East Approach										
	64	20	104	1	1	13.00	900	1.0	900	0	N
North:	North Approach										
	64	20	104	1	1	13.00	135	1.0	135	0	N

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circ/ Exit Flow (pcu/h)	Intra-Bunch Headway (s)	Prop. Bunched Vehicles	Critical Gap (s)	Follow Up Headway (s)
West:	West Approach						
Left	1	Dominant	645	2.00	0.592	4.47	2.50
Thru	1	Dominant	645	2.00	0.592	4.47	2.50
Right	1	Dominant	645	2.00	0.592	4.47	2.50
South:	South Approach						
Left	1	Dominant	165	2.00	0.205	3.72	1.92
Thru	1	Dominant	165	2.00	0.205	3.72	1.92
Right	1	Dominant	165	2.00	0.205	3.72	1.92
East:	East Approach						
Left	1	Dominant	900	2.00	0.713	4.17	2.44
Thru	1	Dominant	900	2.00	0.713	4.17	2.44
Right	2	Continuous					
North:	North Approach						
Left	1	Dominant	135	2.00	0.171	3.70	1.90
Thru	1	Dominant	135	2.00	0.171	3.70	1.90
Right	1	Dominant	135	2.00	0.171	3.70	1.90

* Critical gap or follow-up headway set to MINIMUM value

ARRB Transport Research Ltd - SIDRA 5.20

Alternate Street Design, P.A.
Orange Park Registered User No. 0172
Time and Date of Analysis 11:29 AM, Mar 15,2000

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:

SIDRA US Highway Capacity Manual (1997) Version
Roundabout

RUN INFORMATION

* Basic Parameters:
Intersection Type: Roundabout
Driving on the right-hand side of the road
SIDRA US Highway Capacity Manual (1997) Version
Input data specified in US units
Default Values File No. 11
Peak flow period (for performance): 15 minutes
Unit time (for volumes): 60 minutes (Total Flow Period)
Delay definition: Stop Line delay
Geometric delay not included
Delay formula: Highway Capacity Manual
Level of Service based on: Delay (HCM)
Queue definition: Back of queue, 95th_Percentile

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.0 - TRAFFIC FLOW DATA (Flows in veh/hour as used by the program)

	Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
		LV	HV	LV	HV	LV	HV		
West:	West Approach								
	12	142	1	14	1	124	1	1.00	1.00
South:	South Approach								
	32	105	1	644	7	22	1	1.00	1.00
East:	East Approach								
	22	14	1	15	1	0	0	1.00	1.00
	23	0	0	0	0	12	1	1.00	1.00
North:	North Approach								
	42	8	1	617	6	295	3	1.00	1.00

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout

Estero Boulevard Roundabout Design Report

Introduction

At the request of the Wilson miller, Inc., Alternate Street Design prepared a capacity analysis and a geometric design for a roundabout at the intersection of Estero Boulevard and 5th Street.

The objectives of the design were to

1. Create an attractive gateway onto the island.
2. Provide all vehicle movements.
3. Slow vehicles as they enter the Downtown area.
4. Make it safer and easier for pedestrians to cross at this intersection.

Capacity Analysis

The traffic counts provided by the Wilson Miller, Inc., was used to undertake the capacity analysis. The analyses showed that a single lane roundabout would perform as follows.

	AM Peak Existing Traffic	PM Peak Existing Traffic	AM Peak 15% more Traffic	PM Peak 15% more Traffic
Level-of-service	B	B	B	B
Average Delay Seconds	1.5	4.0	2.1	15.8

Geometric

The geometric design of the roundabout is that of a single lane design that is the minimum required by the capacity analysis. The features of the roundabout design are as follows:

1. A large central, circular island provides a large space for landscaping, the placement of a feature that identifies that neighborhood, a gateway treatment, etc.
2. The large central island provides enough space for most large vehicles to make an U-turn with only a minimal use of the paved area around the central island.
3. Wide splitter islands are included to assist pedestrians as they cross either street by breaking their crossing into two separate crossings that are separated by a wide, safe refuge (splitter islands). When using the splitter islands to cross the road the additional benefit of the islands means that the pedestrians only have to look one-way and so cope

with only one direction of traffic at a time.

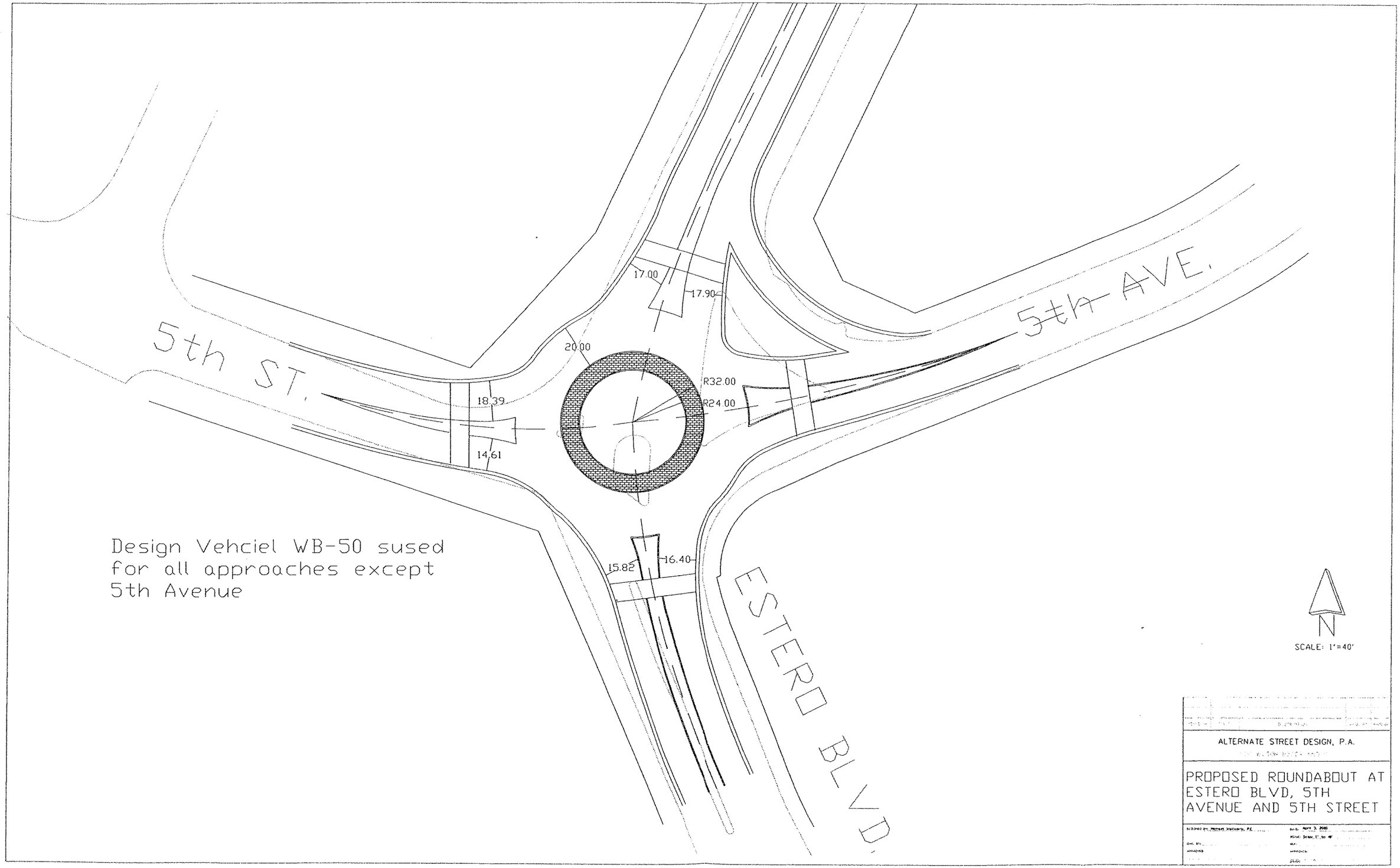
4. The splitter islands can be enhanced with low level landscaping.
5. The design speed of the roundabout is 18 mph on all but the south approach where the design speed is 23 mph. At this speed the expectation is that most drivers will drive through the roundabout at less than 20 mph with only a few drivers exceeding 20 mph. Even these few "pretend racing car drivers" will be limited to only a few miles per hour only the design speed.
6. The continuation and interconnection of the sidewalks around the roundabout will help guide pedestrians to the correct crossing points and provide a continuous pathway around the roundabout.
7. A benefit is the reduced area of asphalt within the intersection. The reduced amount of asphalt will also reduce the amount of water run off that will occur.
8. The design vehicle that was used was a WB-50 on all legs except the east approach.
9. If a right turn lane on the north approach is considered necessary, then a right turn only lane could be added to the roundabout design to allow drivers to pull over and let a fire vehicle to pass. However, it would require some right-of-way to permit its inclusion. It would also reduce the convenience of the crossing for pedestrians.

Safety

There have been 16 mainly minor crashes at the existing intersection. Based on the performance of roundabouts in general a 60 percent of these crashes are possible.

Conclusion

A roundabout is an appropriate traffic control device for this intersection because it will permit drivers to make all movements, facilitate pedestrian movements, control vehicle speeds as they come down off the bridge, improve aesthetics, create a gateway into Fort Myers Beach, provide a safer intersection that will facilitate U-turns while reducing the area of asphalt.



ALTERNATE STREET DESIGN, P.A.

PROPOSED ROUNDABOUT AT ESTERO BLVD, 5TH AVENUE AND 5TH STREET

ARRB Transport Research Ltd - SIDRA 5.20

Alternate Street Design, P.A.
Orange Park Registered User No. 0172
Time and Date of Analysis 11:31 AM, Mar 15,2000

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:

SIDRA US Highway Capacity Manual (1997) Version
Roundabout

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Roundabout
  Driving on the right-hand side of the road
  SIDRA US Highway Capacity Manual (1997) Version
  Input data specified in US units
  Default Values File No. 11
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Delay definition: Stop Line delay
  Geometric delay not included
  Delay formula: Highway Capacity Manual
  Level of Service based on: Delay (HCM)
  Queue definition: Back of queue, 95th_Percentile

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.0 - TRAFFIC FLOW DATA (Flows in veh/hour as used by the program)

	Mov No.	Left		Through		Right		Flow Scale	Peak Flow Factor
		LV	HV	LV	HV	LV	HV		
West:	West Approach								
	12	163	2	16	1	142	1	1.15	1.00
South:	South Approach								
	32	121	1	741	7	25	1	1.15	1.00
East:	East Approach								
	22	16	1	17	1	0	0	1.15	1.00
	23	0	0	0	0	14	1	1.15	1.00
North:	North Approach								
	42	9	1	709	7	339	3	1.15	1.00

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream: Flow (veh/h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect
West: West Approach										
64	20	104	1	1	13.00	742	1.0	742	0	N
South: South Approach										
64	20	104	1	1	13.00	190	1.0	190	0	N
East: East Approach										
64	20	104	1	1	13.00	1035	1.0	1035	0	N
North: North Approach										
64	20	104	1	1	13.00	155	1.0	155	0	N

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circ/ Exit Flow (pcu/h)	Intra-Bunch Headway (s)	Prop. Bunched Vehicles	Critical Gap (s)	Follow Up Headway (s)
West: West Approach							
Left	1	Dominant	742	2.00	0.643	4.36	2.48
Thru	1	Dominant	742	2.00	0.643	4.36	2.48
Right	1	Dominant	742	2.00	0.643	4.36	2.48
South: South Approach							
Left	1	Dominant	190	2.00	0.232	3.74	1.93
Thru	1	Dominant	190	2.00	0.232	3.74	1.93
Right	1	Dominant	190	2.00	0.232	3.74	1.93
East: East Approach							
Left	1	Dominant	1035	2.00	0.762	3.98	2.39
Thru	1	Dominant	1035	2.00	0.762	3.98	2.39
Right	2	Continuous					
North: North Approach							
Left	1	Dominant	155	2.00	0.194	3.71	1.91
Thru	1	Dominant	155	2.00	0.194	3.71	1.91
Right	1	Dominant	155	2.00	0.194	3.71	1.91

* Critical gap or follow-up headway set to MINIMUM value

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table R.5 - ROUNDABOUT CAPACITY & LEVEL OF SERVICE - SIDRA & HCM MODELS

Mov No.	Arv Flow (veh /h)	SIDRA Cap. (veh /h)	SIDRA Deg. Satn x	SIDRA Av. Delay (sec)	SIDRA LOS	HCM 1997 Lower Cap. (veh /h)	HCM 1997 Lower Deg. Satn x	HCM 1997 Lower Av. Delay (sec)	HCM 1997 Lower LOS	HCM 1997 Upper Cap. (veh /h)	HCM 1997 Upper Deg. Satn x	HCM 1997 Upper Av. Delay (sec)	HCM 1997 Upper LOS
West: West Approach													
12 LTR	325	661	0.492	7.7	B	628	0.518	8.5	C	768	0.423	6.5	B
		661	0.492	7.7	B	628	0.518	8.5	C	768	0.423	6.5	B
South: South Approach													
32 LTR	896	1525	0.588	1.1	B	988	0.907	8.1	B	1194	0.750	2.4	B
		1525	0.588	1.1	B	988	0.907	8.1	B	1194	0.750	2.4	B
East: East Approach													
22 LT	35	463	0.076	9.1	C	464	0.075	11.0	C	601	0.058	9.4	C
23 R	15	- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
North: North Approach													
42 LTR	1068	1634	0.654	1.0	B	1017	1.050	35.6	D	1226	0.871	3.8	B
		1634	0.654	1.0	B	1017	1.050	35.6	D	1226	0.871	3.8	B
ALL VEHICLES:		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	

NA Values for this roundabout capacity model have not been calculated because the model was not applicable for the given roundabout conditions. Note that the HCM models are only applicable to single-lane roundabouts with circulating flows less than 1200 veh/h. Also note that results are not calculated for any of the models for slip lane or continuous movements. See SIDRA Output Guide Appendix Section A3.8 for roundabout limits.

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Arv Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: West Approach									
12 LTR	325	742	1.0	742	661	0.85	73	100	0.492
South: South Approach									

32 LTR	896	190	1.0	190	1525	0.85	45	100	0.588
East: East Approach									
22 LTR	35	1035	1.0	1035	463	0.85	1024	100	0.076
23 R	15	0			1900	0.98	****	100	0.008
North: North Approach									
42 LTR	1068	155	1.0	155	1634	0.85	30	100	0.654*

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Degree of saturation (highest)	=	0.654
Practical Spare Capacity (lowest)	=	30 %
Total vehicle flow (veh/h)	=	2339
Total vehicle capacity, all lanes (veh/h)	=	6183
Average intersection delay (s)	=	2.1
Largest average movement delay (s)	=	9.1
Total vehicle delay (veh-h/h)	=	1.36
Largest back of queue, 95% (ft)	=	181
Performance Index	=	56.29
Total fuel (ga/h)	=	76.8
Total cost ($/h)	=	574.03
Intersection Level of Service	=	B
Worst movement Level of Service	=	C

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.	Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% Back (vehs)	(ft)	Perf. Index	Aver. Speed (mph)
West: West Approach								
12 LTR	0.69	7.7	0.77	0.95	4.4	112	9.46	30.5
South: South Approach								
32 LTR	0.27	1.1	0.44	0.66	5.4	136	20.77	32.7
East: East Approach								
22 LTR	0.09	9.1	0.78	0.82	0.5	13	1.01	29.7
23 R	0.00	0.0			0.4#		0.31	35.1
North: North Approach								
42 LTR	0.31	1.0	0.45	0.63	7.2	181	24.74	33.0

Largest density/concentration (number of passenger car space equivalents (pcse) per km or per mile if US units) for any lane

---

ESTERO BLVD/5TH AVENUE * AMNEW15 *

AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Perf. Index	Aver. Speed (mph)
West: West Approach						
325	0.69	7.7	0.775	0.95	9.46	30.5
South: South Approach						
896	0.27	1.1	0.444	0.66	20.77	32.7
East: East Approach						
50	0.09	6.4	0.551	0.74	1.31	31.2
North: North Approach						
1068	0.31	1.0	0.450	0.63	24.74	33.0
INTERSECTION:						
2339	1.36	2.1	0.495	0.69	56.29	32.5

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Arv Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Short Lane (ft)
West: West Approach									
1 LTR	12	325	661	0.492	7.7	0.95	4.4	112	
South: South Approach									
1 LTR	32	896	1525	0.588	1.1	0.66	5.4	136	
East: East Approach									
1 LT	22	35	463	0.076	9.1	0.82	0.5	13	
2 R	23	15	1900	0.008	0.0		0.4#		
North: North Approach									
1 LTR	42	1068	1634	0.653	1.0	0.63	7.2	181	

Concentration/density (pcse per km, or per mile if US units)

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Arv Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West:	West Approach												
1 LTR	12	165	17	143	325	13.0N	-	-	-	60	661	0.492	100
South:	South Approach												
1 LTR	32	122	748	26	896	13.0N	-	-	-	60	1525	0.588	100
East:	East Approach												
1 LT	22	17	18	0	35	13.0N	-	-	-	35	463	0.076	100
2 R	23	0	0	15	15	13.0N	-	-	-	15	1900	0.008	100
North:	North Approach												
1 LTR	42	10	716	342	1068	13.0N	-	-	-	60	1634	0.653	100

N Width value was not used for saturation flow adjustment in this case. (Lane width adjustment does not apply at sign-controlled intersections or to gap-acceptance capacities at signalised intersections).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total ga/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h	Lead Total kg/h
West: West Approach							
12 LTR	10.9	83.79	0.128	4.86	0.197	103.4	0.00000
	10.9	83.79	0.128	4.86	0.197	103.4	0.00000
South: South Approach							
32 LTR	29.4	219.48	0.339	12.95	0.530	278.3	0.00000
	29.4	219.48	0.339	12.95	0.530	278.3	0.00000
East: East Approach							
22 LT	1.2	9.21	0.014	0.52	0.021	11.2	0.00000
23 R	0.5	3.42	0.005	0.19	0.008	4.4	0.00000
	1.7	12.63	0.019	0.71	0.029	15.6	0.00000
North: North Approach							
42 LTR	34.8	258.12	0.400	15.30	0.629	329.0	0.00000
	34.8	258.12	0.400	15.30	0.629	329.0	0.00000
INTERSECTION:	76.8	574.03	0.886	33.83	1.385	726.3	0.00000

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Arrival Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	95% Queue (ft)	Shrt Lane (ft)
West:	West Approach											
1 LTR	165	17	143	325	1				0.492	7.7	112	
	165	17	143	325	1				0.492	7.7	112	
South:	South Approach											
1 LTR	122	748	26	896	1				0.588	1.1	136	
	122	748	26	896	1				0.588	1.1	136	
East:	East Approach											
1 LT	17	18	0	35	6				0.076	9.1	13	
2 R	0	0	15	15	7	1900			0.008	0.0		
	17	18	15	50	6				0.076	6.4	13	
North:	North Approach											
1 LTR	10	716	342	1068	1				0.653	1.0	181	
	10	716	342	1068	1				0.653	1.0	181	

ALL VEHICLES	Tot Arv.	% HV	Max X	Aver. Delay	Max Queue
	2339	1	0.654	2.1	181

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Values printed in this table are back of queue.

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	325	661	0.492	7.7	B
		325	661	0.492	7.7	B
South: South Approach						
32	LTR	896	1525	0.588	1.1	B
		896	1525	0.588	1.1	B
East: East Approach						
22	LT	35	463	0.076	9.1	C
23	R (Con)	15	1900	0.008	0.0	A#
		50	2363	0.076	6.4	B
North: North Approach						
42	LTR	1068	1634	0.654*	1.0	B
		1068	1634	0.654	1.0	B
ALL VEHICLES:		2339	6183	0.654	2.1	B
INTERSECTION:		2339	6183	0.654	2.1	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

ARRB Transport Research Ltd - SIDRA 5.20

Alternate Street Design, P.A.
Orange Park Registered User No. 0172
Time and Date of Analysis 11:25 AM, Mar 15,2000

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:

SIDRA US Highway Capacity Manual (1997) Version
Roundabout

RUN INFORMATION

* Basic Parameters:
  Intersection Type: Roundabout
  Driving on the right-hand side of the road
  SIDRA US Highway Capacity Manual (1997) Version
  Input data specified in US units
  Default Values File No. 11
  Peak flow period (for performance): 15 minutes
  Unit time (for volumes): 60 minutes (Total Flow Period)
  Delay definition: Stop Line delay
  Geometric delay not included
  Delay formula: Highway Capacity Manual
  Level of Service based on: Delay (HCM)
  Queue definition: Back of queue, 95th_Percentile

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.0 - TRAFFIC FLOW DATA (Flows in veh/hour as used by the program)

Mov No.	Left LV	Left HV	Through LV	Through HV	Right LV	Right HV	Flow Scale	Peak Flow Factor
West: West Approach								
12	383	4	24	1	221	2	1.15	0.90
South: South Approach								
32	185	2	925	9	38	1	1.15	0.90
East: East Approach								
22	25	1	25	1	0	0	1.15	0.90
23	0	0	0	0	33	1	1.15	0.90
North: North Approach								
42	22	1	786	8	312	3	1.15	0.90

Based on unit time = 60 minutes.
Flow Scale and Peak Hour Factor effects included in flow values.

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic

Intersection ID:
Roundabout

Table R.0 - ROUNDABOUT BASIC PARAMETERS

Cent Island Diam (ft)	Circ Width (ft)	Insc Diam. (ft)	No.of Circ. Lanes	No.of Entry Lanes	Av.Ent Lane Width (ft)	Circulating/Exiting Stream: Flow (veh/h)	%HV	Adjust. Flow (pcu/h)	%Exit Incl.	Cap. Constr. Effect
West: West Approach										
64	20	104	1	1	13.00	841	1.0	841	0	N
South: South Approach										
64	20	104	1	1	13.00	433	1.0	433	0	N
East: East Approach										
64	20	104	1	1	13.00	1504	1.0	1504	0	Y
North: North Approach										
64	20	104	1	1	13.00	237	1.0	237	0	Y

Intersection ID:
Roundabout

Table R.1 - ROUNDABOUT GAP ACCEPTANCE PARAMETERS

Turn	Lane No.	Lane Type	Circ/ Exit Flow (pcu/h)	Intra-Bunch Headway (s)	Prop. Bunched Vehicles	Critical Gap (s)	Follow Up Headway (s)
West: West Approach							
Left	1	Dominant	841	2.00	0.689	3.00U	2.45
Thru	1	Dominant	841	2.00	0.689	3.00U	2.45
Right	1	Dominant	841	2.00	0.689	3.00U	2.45
South: South Approach							
Left	1	Dominant	433	2.00	0.452	3.00U	2.16
Thru	1	Dominant	433	2.00	0.452	3.00U	2.16
Right	1	Dominant	433	2.00	0.452	3.00U	2.16
East: East Approach							
Left	1	Dominant	1504	2.00	0.876	3.00U	2.20
Thru	1	Dominant	1504	2.00	0.876	3.00U	2.20
Right	2	Continuous					
North: North Approach							
Left	1	Dominant	237	2.00	0.281	3.00U	1.97
Thru	1	Dominant	237	2.00	0.281	3.00U	1.97
Right	1	Dominant	237	2.00	0.281	3.00U	1.97

U User specified critical gap or follow-up headway for an entry stream
* Critical gap or follow-up headway set to MINIMUM value

PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table R.5 - ROUNDABOUT CAPACITY & LEVEL OF SERVICE - SIDRA & HCM MODELS

Mov No.	Arv Flow (veh /h)	SIDRA Cap. (veh /h)	SIDRA Deg. Satn x	SIDRA Av. Delay (sec)	SIDRA LOS	HCM 1997 Lower Cap. (veh /h)	HCM 1997 Lower Deg. Satn x	HCM 1997 Lower Av. Delay (sec)	HCM 1997 Lower LOS	HCM 1997 Upper Cap. (veh /h)	HCM 1997 Upper Deg. Satn x	HCM 1997 Upper Av. Delay (sec)	HCM 1997 Upper LOS
West: West Approach													
12 LTR	635	680	0.934	24.8	D	609	1.043	54.4	E	709	0.896	27.6	D
		680	0.934	24.8	D	609	1.043	54.4	E	709	0.896	27.6	D
South: South Approach													
32 LTR	1160	1156	1.003	24.8	D	811	1.430	204.3	F	985	1.178	93.4	F
		1156	1.003	24.8	D	811	1.430	204.3	F	985	1.178	93.4	F
East: East Approach													
22 LT	52	156	0.333	23.7	D	421	0.124	14.8	C	- - - -	NA	- - - -	
23 R	34	- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	
North: North Approach													
42 LTR	1132	1491	0.759	1.7	B	996	1.137	71.6	F	1175	0.963	12.6	C
		1491	0.759	1.7	B	996	1.137	71.6	F	1175	0.963	12.6	C
ALL VEHICLES:		- - - -	NA	- - - -		- - - -	NA	- - - -		- - - -	NA	- - - -	

NA Values for this roundabout capacity model have not been calculated because the model was not applicable for the given roundabout conditions. Note that the HCM models are only applicable to single-lane roundabouts with circulating flows less than 1200 veh/h. Also note that results are not calculated for any of the models for slip lane or continuous movements. See SIDRA Output Guide Appendix Section A3.8 for roundabout limits.

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.2 - MOVEMENT CAPACITY PARAMETERS

Mov No.	Arv Flow (veh /h)	Total Opng Flow (veh/h)	%HV	Adjust. Opng Flow (pcu/h)	Total Cap. (veh /h)	Prac. Deg. Satn xp	Prac. Spare Cap. (%)	Lane Util (%)	Deg. Satn x
West: West Approach									
12 LTR	635	841	1.0	841	680	0.85	-9	100	0.934
South: South Approach									
32 LTR	1160	433	1.0	433	1156	0.85	-15	100	1.003*

East: East Approach										
22	LT	52	1504	1.0	1504	156	0.85	155	100	0.333
23	R	34	0			1900	0.98	5376	100	0.018
North: North Approach										
42	LTR	1132	237	1.0	237	1491	0.85	12	100	0.759

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.3 - INTERSECTION PARAMETERS

Degree of saturation (highest)	=	1.003
Practical Spare Capacity (lowest)	=	-15 %
Total vehicle flow (veh/h)	=	3013
Total vehicle capacity, all lanes (veh/h)	=	5383
Average intersection delay (s)	=	15.8
Largest average movement delay (s)	=	24.8
Total vehicle delay (veh-h/h)	=	13.24
Largest back of queue, 95% (ft)	=	959
Performance Index	=	110.85
Total fuel (ga/h)	=	107.8
Total cost ($/h)	=	854.81
Intersection Level of Service	=	C
Worst movement Level of Service	=	D

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.5 - MOVEMENT PERFORMANCE

Mov No.		Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Longest Queue 95% (vehs)	Back (ft)	Perf. Index	Aver. Speed (mph)
West: West Approach									
12	LTR	4.37	24.8	0.88	1.58	21.6	546	28.81	25.1
South: South Approach									
32	LTR	8.00	24.8	1.00	1.52	38.1	959	52.37	25.2
East: East Approach									
22	LT	0.34	23.7	0.87	1.01	1.4	36	1.98	25.3
23	R	0.00	0.0			0.9#		0.69	35.1
North: North Approach									
42	LTR	0.53	1.7	0.51	0.69	8.1	204	27.00	32.8

Largest density/concentration (number of passenger car space equivalents (pcse) per km or per mile if US units) for any lane

---

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic

Intersection ID:
Roundabout

Table S.6 - INTERSECTION PERFORMANCE

Total Flow (veh/h)	Total Delay (veh-h/h)	Aver. Delay (sec)	Prop. Queued	Eff. Stop Rate	Perf. Index	Aver. Speed (mph)
West: West Approach						
635	4.37	24.8	0.884	1.58	28.81	25.1
South: South Approach						
1160	8.00	24.8	1.000	1.52	52.37	25.2
East: East Approach						
86	0.34	14.3	0.526	0.84	2.67	28.4
North: North Approach						
1132	0.53	1.7	0.514	0.69	27.00	32.8
INTERSECTION:						
3013	13.24	15.8	0.779	1.20	110.85	27.7

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.7 - LANE PERFORMANCE

Lane No.	Mov No.	Arv Flow (veh /h)	Cap (veh /h)	Deg. Satn x	Aver. Delay (sec)	Eff. Stop Rate	Queue 95% Back (vehs)	Queue 95% Back (ft)	Short Lane (ft)
West: West Approach									
1 LTR	12	635	680	0.934	24.8	1.58	21.6	546	
South: South Approach									
1 LTR	32	1160	1156	1.003	24.8	1.52	38.1	959	
East: East Approach									
1 LT	22	52	156	0.332	23.7	1.01	1.4	36	
2 R	23	34	1900	0.018	0.0		0.9#		
North: North Approach									
1 LTR	42	1132	1491	0.759	1.7	0.69	8.1	204	

Concentration/density (pcse per km, or per mile if US units)

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.8 - LANE FLOW AND CAPACITY INFORMATION

Lan No.	Mov No.	Arv Flow (veh/h) Lef	Thru	Rig	Tot	Lane Width (ft)	Saturation Flow Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)	Min Cap (veh /h)	Tot Cap (veh /h)	Deg. Satn x	Lane Util %
West:	West Approach												
1 LTR	12	387	25	223	635	13.0N	-	-	-	60	680	0.934	100
South:	South Approach												
1 LTR	32	187	934	39	1160	13.0N	-	-	-	60	1156	1.003	100
East:	East Approach												
1 LT	22	26	26	0	52	13.0N	-	-	-	52	156	0.332	100
2 R	23	0	0	34	34	13.0N	-	-	-	34	1900	0.018	100
North:	North Approach												
1 LTR	42	23	794	315	1132	13.0N	-	-	-	60	1491	0.759	100

N Width value was not used for saturation flow adjustment in this case. (Lane width adjustment does not apply at sign-controlled intersections or to gap-acceptance capacities at signalised intersections).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.12A - FUEL CONSUMPTION, EMISSIONS AND COST - TOTAL

Mov No.	Fuel Total ga/h	Cost Total $/h	HC Total kg/h	CO Total kg/h	NOX Total kg/h	CO2 Total kg/h	Lead Total kg/h
West: West Approach							
12 LTR	23.7	195.91	0.289	10.79	0.420	224.5	0.00000
	23.7	195.91	0.289	10.79	0.420	224.5	0.00000
South: South Approach							
32 LTR	44.1	360.95	0.541	20.76	0.792	417.4	0.00000
	44.1	360.95	0.541	20.76	0.792	417.4	0.00000
East: East Approach							
22 LT	1.9	15.49	0.022	0.80	0.032	17.5	0.00000
23 R	1.1	7.76	0.012	0.42	0.019	10.0	0.00000
	2.9	23.25	0.034	1.22	0.051	27.6	0.00000
North: North Approach							
42 LTR	37.0	274.70	0.425	16.32	0.669	349.5	0.00000
	37.0	274.70	0.425	16.32	0.669	349.5	0.00000
INTERSECTION:	107.8	854.81	1.290	49.09	1.931	1018.9	0.00000

ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.14 - SUMMARY OF INPUT AND OUTPUT DATA

Lane No.	Arrival Flow (veh/h) L	T	R	Tot	%HV	Adj. Basic Satf.	Eff Grn (secs) 1st	2nd	Deg Sat x	Aver. Delay (sec)	95% Queue (ft)	Shrt Lane (ft)
West:	West Approach											
1 LTR	387	25	223	635	1				0.934	24.8	546	
	387	25	223	635	1				0.934	24.8	546	
South:	South Approach											
1 LTR	187	934	39	1160	1				1.003	24.8	959	
	187	934	39	1160	1				1.003	24.8	959	
East:	East Approach											
1 LT	26	26	0	52	4				0.332	23.7	36	
2 R	0	0	34	34	3	1900			0.018	0.0		
	26	26	34	86	3				0.332	14.3	36	
North:	North Approach											
1 LTR	23	794	315	1132	1				0.759	1.7	204	
	23	794	315	1132	1				0.759	1.7	204	

ALL VEHICLES	Tot Arv.	% HV	Max X	Aver. Delay	Max Queue
	3013	1	1.003	15.8	959

Total flow period = 60 minutes. Peak flow period = 15 minutes.

Note: Basic Saturation Flows are not adjusted at roundabouts or sign-controlled intersections and apply only to continuous lanes.

Values printed in this table are back of queue.

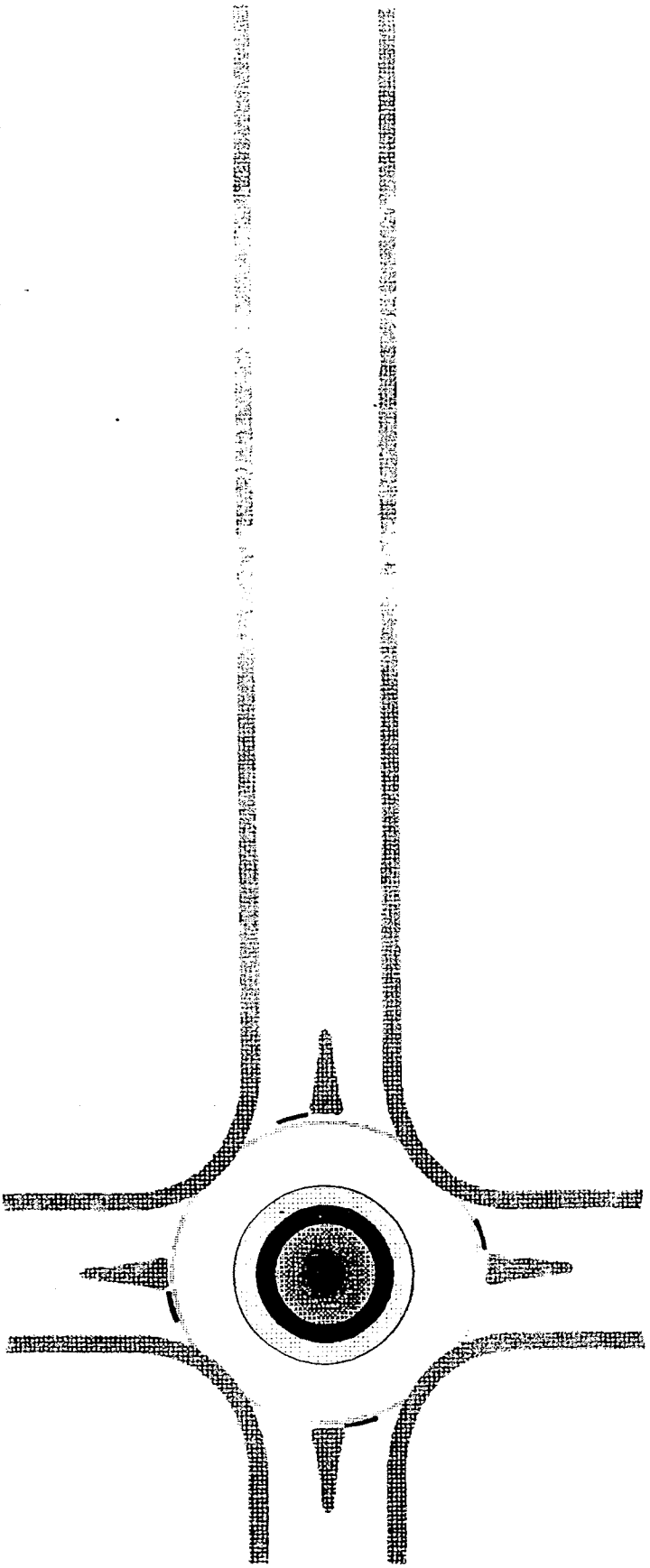
ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	635	680	0.934	24.8	D
		635	680	0.934	24.8	D
South: South Approach						
32	LTR	1160	1156	1.003*	24.8	D
		1160	1156	1.003	24.8	D
East: East Approach						
22	LT	52	156	0.333	23.7	D
23	R (Con)	34	1900	0.018	0.0	A#
		86	2056	0.333	14.3	C
North: North Approach						
42	LTR	1132	1491	0.759	1.7	B
		1132	1491	0.759	1.7	B
ALL VEHICLES:		3013	5383	1.003	15.8	C
INTERSECTION:		3013	5383	1.003	15.8	C

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---



ROUNDABOUT JUSTIFICATION STUDY

District 1 City FORT MYERS BEACH

Intersection ESTERO BLVD

at 5TH AVE

Agency TOWN OF FORT MYERS BEACH

Prepared by Alternate Street Design, P.A.

Date 3-9-00

Florida Department of Transportation

4/3/00

ROUNDABOUT JUSTIFICATION STUDY SUMMARY

Location Description: ESTERO BLVD / 5TH AVE		Area Population: 8,000 off season / 40,000 season Growth Rate:
Existing Control: ☒ TWSC ☐ AWSC ☐ Signal Other:	Total Approaches: 3 (4) 5 6 7 8 ADT (all approaches): 29,352	Total crashes: 16 in 3 years Preventable: 10

APPROACH CHARACTERISTICS

Direction	Street Name	State or Local	Number of Lanes	ADT	Posted Speed	Traffic Control	Length*
1. NB	Estero Blvd	S	2	11540	25	–	
2. SB	estero Blvd	S	2	12,824	25	–	1mile
3. EB	5th Ave	L	2	4,765	25	Stop	
4. WB	5th Ave	L	2	503	25	–	N/A
5.							
6.							
7.							
8.							

*from upstream signal.

JUSTIFICATION CATEGORY

☒ Community enhancement ☐ AWSC alternative

☐ Safety improvement ☒ Traffic calming

☐ Low volume signal alternative ☐ Special

☐ Medium volume signal alternative

Warrants Met? ☐ Signal Volume warrants

☐ AWSC ☐ Signal accident warrants

Level of Service ____ TWSC

____ Signal ____ AWSC

Traffic Volume Projection Basis: ☒ Actual volumes

☐ Projected To ____ by ____

ATTACHMENTS

- X 24 Hour Approach Counts
- X Peak hour turning movement counts
- X Pedestrian / bicycle counts
- X Existing Geometrics
- ____ Collision diagram/accident summary
- ____ Condition diagram
- X Preliminary roundabout design
- X Aerial Photograph.
- ____
- ____
- ____

MISCELLANEOUS OBSERVATIONS

The following observations are relevant to the justification and/or operation of a roundabout:

1. Physical and right-of-way features

   N/A

2. Current and planned site development features such as adjoining businesses, driveways, etc.

   Central Business District

3. Community considerations such as a need for parking, landscaping character, etc.

   GATEWAY

4. Traffic management strategies that are being (or will be) used in the area

   REDESIGN OF ESTERO BLVD TO A PEOPLE FRIENDLY DESIGN

5. Projected public transit useage (routes, stops, etc.)

   Existing transit is downstream of roundabout

6. Intersection treatments used at adjacent intersections

   Stop Control

7. History of public complaints that suggest a need for traffic calming

   Concern for pedestrians, congestion, speed control

8. Number of other roundabouts in the jurisdiction that would make drivers more familiar with this type of control

   0

Other observations

SUMMARY OF VEHICLE MOVEMENTS

Location ESTERO BLVD / 5TH AVE

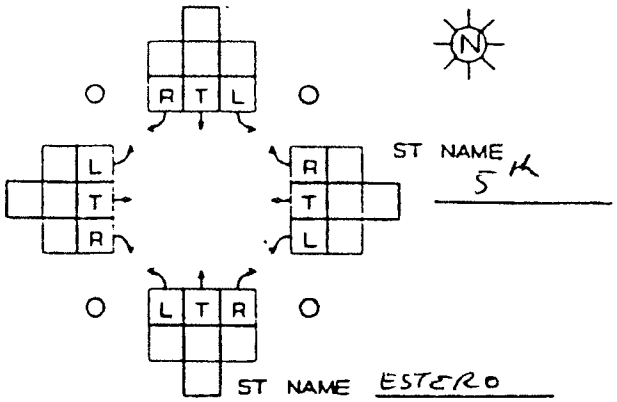
County LEE City FORT MYERS BEACH

Observer Anthony Grudup / Miguel Denny Date 12/21/99

Weather FINE

Road Condition DRY

Remarks



VEHICLE MOVEMENTS												
TIME	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND		
BEGIN	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak	106	651	22	8	623	298	143	14	125	14	15	12
11:15 to 12:15												
PM Peak	146	731	30	17	621	247	303	19	175	20	20	26
4:30 to 5:30												

ANALYSIS OF CONTRAINDICATIONS

Describe all contraindications that apply at this location and indicate what mitigation measures will be used to eliminate the problems that could arise.

1. Physical or geometric features that could make the construction or operation of a roundabout more difficult

   N/A

2. Land use or traffic generators that could interfere with construction or cause operational problems

   N/A

3. Other traffic control devices along any intersecting roadway which would require preemption

   N/A

4. Bottlenecks on any of the intersecting roadways that could back up traffic into the roundabout

   N/A

5. Sight distance obstructions

   N/A

6. Platooned arterial traffic flow on one or more approaches

   N/A

7. Heavy use by persons with special needs that could suggest a requirement for more positive control

   None

8. Recent safety projects in the area to benefit older drivers

   N/A

9. Emergency vehicle operations coordination requirements

   Coordinate design with Fire Chief/EMS.

10. Emergency evacuation route coordination requirements

    Yes

11. Other problems that have been identified

FLORIDA DEPARTMENT OF TRANSPORTATION
VEHICLE MOVEMENTS DATA FORM

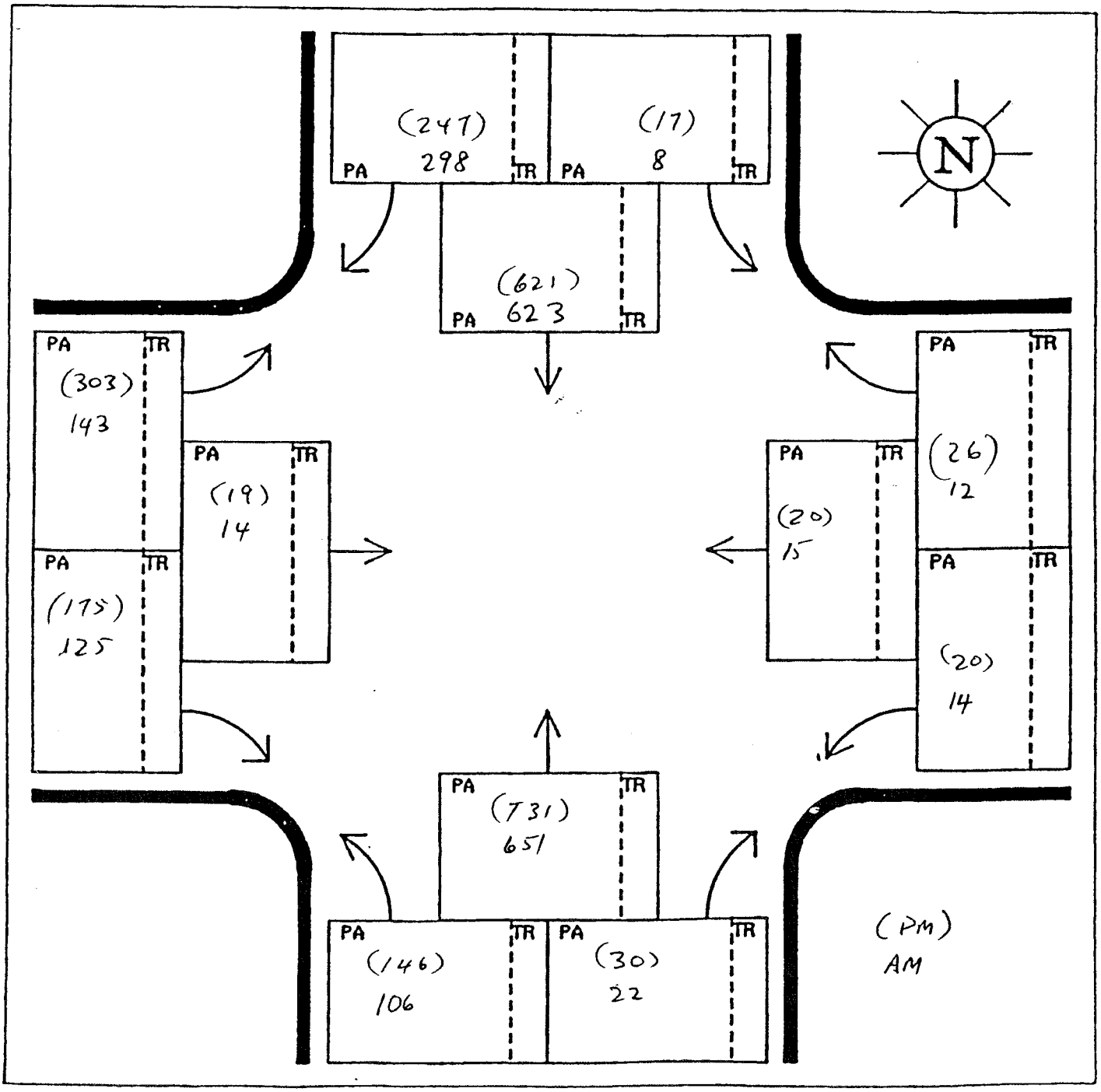
LOCATION I.D. NS Estero (SR 865) EW 5th

COUNTY Lee CITY Fort Myers Beach

DATE 12-17-99 TIME: FROM 11:15 am 4:30 pm TO 12:15 pm AM Peak 5:30 pm PM Peak

OBSERVER A. Crudup / M. Denny WEATHER Fine

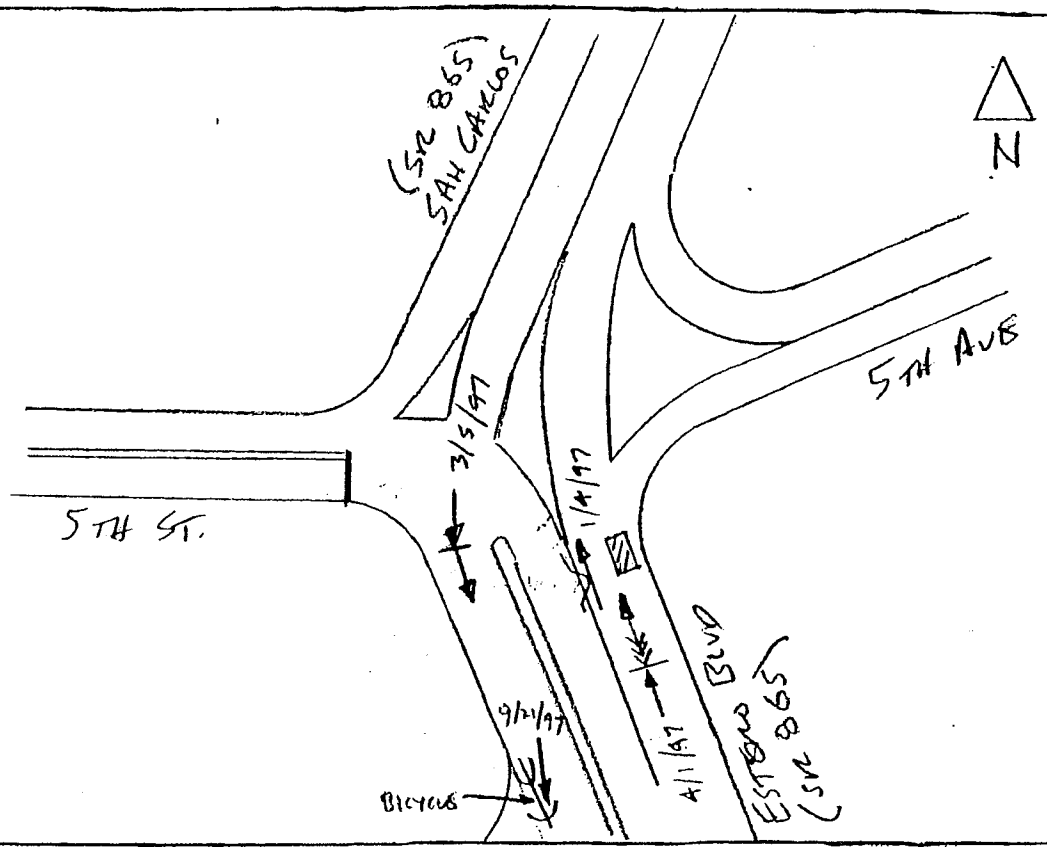
REMARKS



FLORIDA DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

LOCATION I.D. ESTERO BLVD (SR 865) @ 5TH AVE
COUNTY LEE CITY FT. MYERS BEACH
PERIOD JAN 1997 TO DEC 1997 PREPARED BY ARNOLD KENNY



COLLISION SYMBOLS		CONDITION CODES
VEHICLE PATH	REAR-END COLLISION	PAVEMENT CONDITION: D=DRY W=WET I=ICY
BACKING VEHICLE	HEAD-ON COLLISION	WEATHER CONDITION C=CLEAR R=RAIN F=FOG S=SNOW
NON-INVOLVED VEH	SIDE SWIPE	LIGHT CONDITION L=DAYLIGHT N=NIGHT (DARK)
PEDESTRIAN PATH	OUT OF CONTROL	TIME OF DAY (MILITARY)
FIXED OBJECT	OVERTURNED VEHICLE	
PARKED VEHICLE	LEFT TURN COLLISION	
PERSONAL INJURY	RIGHT ANGLE COLLISION	
FATALITY		

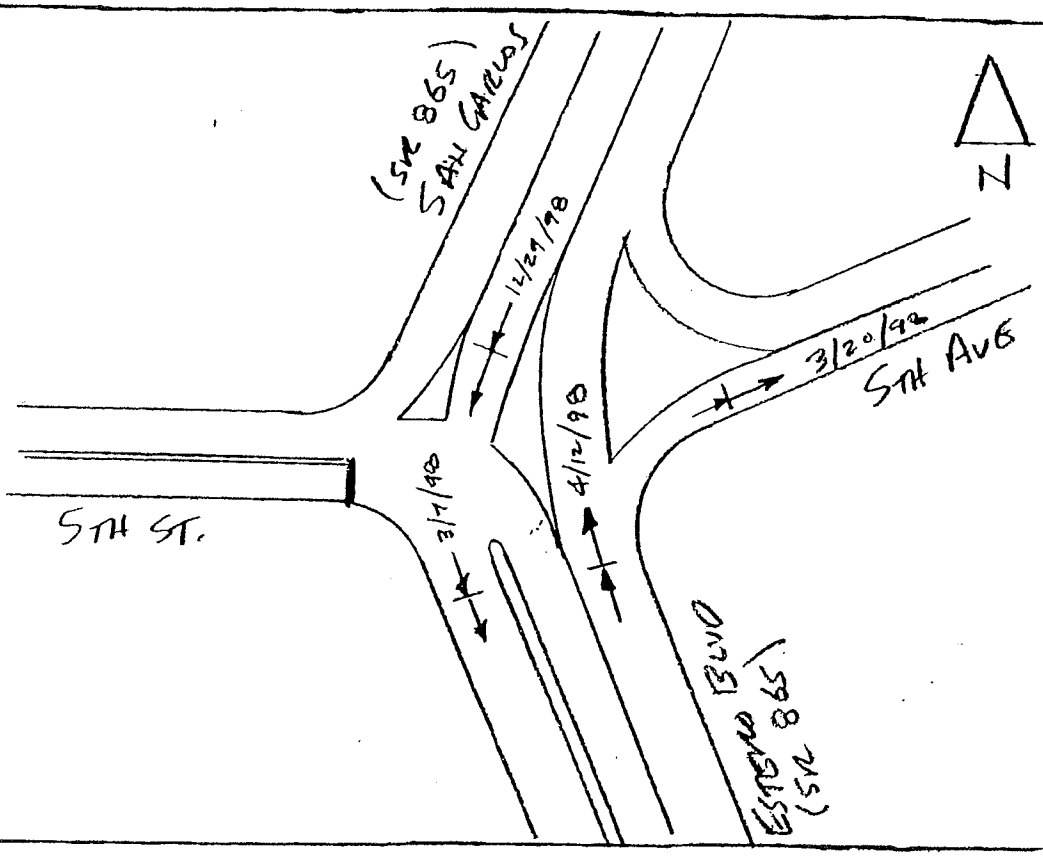
ACCIDENT SUMMARY

	PROP. DMG ONLY	INJURY	FATAL	TOTAL
DAYTIME				
NIGHTTIME				
TOTAL				

FLORIDA DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

LOCATION I.D. ESTERO BLVD (SR 865) @ 5TH AVE
COUNTY LEE CITY FT. MYERS BEACH
PERIOD JAN 1998 TO DEC 1998 PREPARED BY ARNOLD KENNY



COLLISION SYMBOLS		CONDITION CODES
VEHICLE PATH	REAR-END COLLISION	PAVEMENT CONDITION: D=DRY W=WET I=ICY
BACKING VEHICLE	HEAD-ON COLLISION	WEATHER CONDITION C=CLEAR R=RAIN F=FOG S=SNOW
NON-INVOLVED VEH	SIDE SWIPE	LIGHT CONDITION L=DAYLIGHT N=NIGHT (DARK)
PEDESTRIAN PATH	OUT OF CONTROL	TIME OF DAY (MILITARY)
FIXED OBJECT	OVERTURNED VEHICLE	
PARKED VEHICLE	LEFT TURN COLLISION	
PERSONAL INJURY	RIGHT ANGLE COLLISION	
FATALITY		

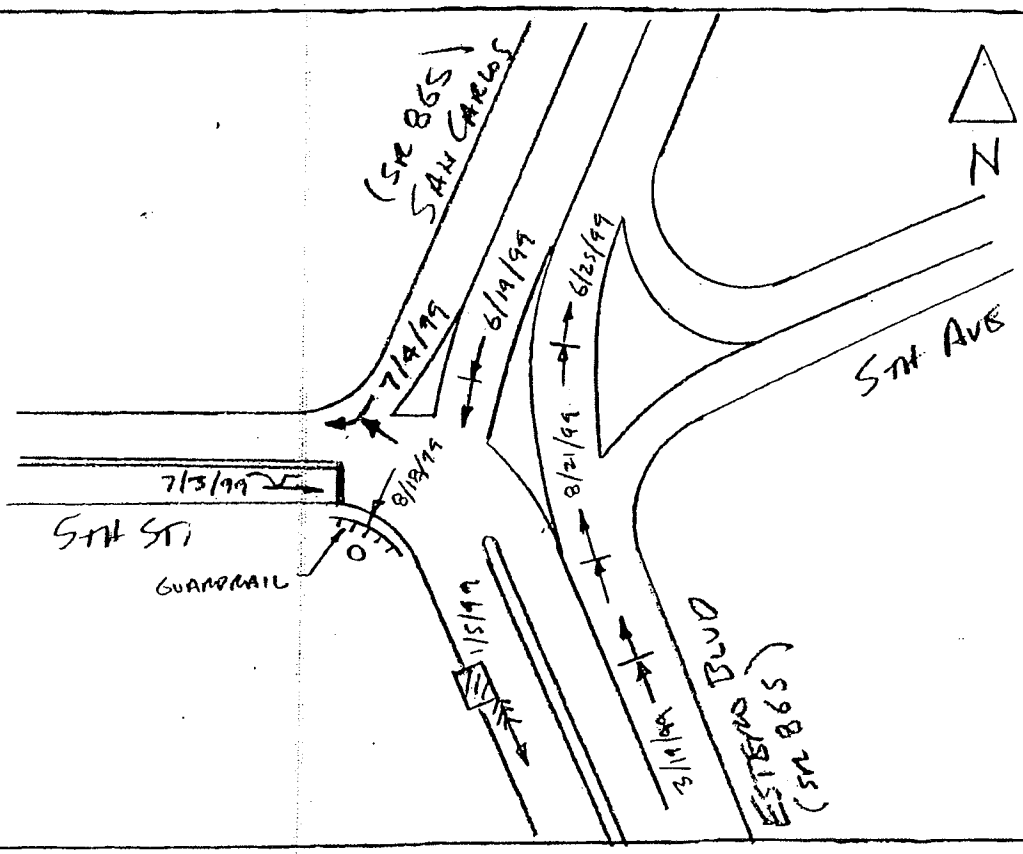
ACCIDENT SUMMARY

	PROP. DMG ONLY	INJURY	FATAL	TOTAL
DAYTIME				
NIGHTTIME				
TOTAL				

FLORIDA DEPARTMENT OF TRANSPORTATION

COLLISION DIAGRAM

LOCATION I.D. ESTERO BLVD (SR 865) @ 5TH AVE
COUNTY LEE CITY FT. MYERS BEACH
PERIOD JAN 1999 TO DEC 1999 PREPARED BY ARNOLD KENNY



COLLISION SYMBOLS		CONDITION CODES
VEHICLE PATH	REAR-END COLLISION	PAVEMENT CONDITION: D=DRY W=WET I=ICY
BACKING VEHICLE	HEAD-ON COLLISION	WEATHER CONDITION C=CLEAR R=RAIN F=FOG S=SNOW
NON-INVOLVED VEH	SIDE SWIPE	LIGHT CONDITION L=DAYLIGHT N=NIGHT (DARK)
PEDESTRIAN PATH	OUT OF CONTROL	TIME OF DAY (MILITARY)
FIXED OBJECT	OVERTURNED VEHICLE	
PARKED VEHICLE	LEFT TURN COLLISION	
PERSONAL INJURY	RIGHT ANGLE COLLISION	
FATALITY		

ACCIDENT SUMMARY

	PROP. DMG ONLY	INJURY	FATAL	TOTAL
DAYTIME				
NIGHTTIME				
TOTAL				

FLORIDA DEPARTMENT OF TRANSPORTATION
ACCIDENT SUMMARY

SECTION _____ STATE ROUTE 865
INTERSECTING ROUTE _____ M.P. _____ ENGINEER ARNOLD KENNY
STUDY PERIOD: FROM 1997 TO 1999 COUNTY LEE

NO.	DATE	DAY	TIME	TYPE	FATAL	INJURY	PROPERTY DAMAGE	DAY/ NT	WET/ DRY	CONTRIBUTING CAUSE
1	9/21/97		12:05pm	BIKE/CAR	NO	YES	$100	DAY	DRY	CARELESSNESS
2	4/1/97		10:15pm	REAR	NO	NO	$600	NT	DRY	TRAFFIC
3	3/5/97		9:49Am	REAR	NO	NO	$4,000	DAY	DRY	TRAFFIC
4	1/4/97		2:40pm	SIDE	NO	NO	$800	DAY	DRY	TRAFFIC
5	12/29/98		4:00pm	REAR	NO	NO	$1,000	DAY	DRY	TRAFFIC
6	4/12/98		5:00pm	REAR	NO	NO	$1,100	DAY	DRY	TRAFFIC
7	3/20/98		7:30pm	REAR	NO	NO	$550	NT	DRY	TRAFFIC
8	3/7/98		11:30pm	REAR	NO	NO	$50	NT	DRY	TRAFFIC
9	8/19/99		2:30Am	ANGLE ONE VEH	NO	NO	$2000	NT	DRY	DUI
10	8/21/99		9:15pm	REAR	NO	NO	$500	NT	DRY	TRAFFIC
11	6/25/99		3:15pm	REAR	NO	NO	$300	DAY	DRY	TRAFFIC
12	7/4/99		8:50pm	ANGLE	NO	NO	$800	NT	DRY	FAILED TO YIELD R.O.W.
13	7/3/99		8:00pm	SIDE	NO	NO	$700	NT	DRY	CARELESSNESS
14	6/19/99		10:30pm	REAR	NO	YES	$1500	NT	DRY	TRAFFIC
15	3/19/99		5:50pm	REAR	NO	NO	$600	DAY	DRY	TRAFFIC
16	1/5/99		3:15pm	REAR	NO	NO	$200	DAY	DRY	CARELESSNESS

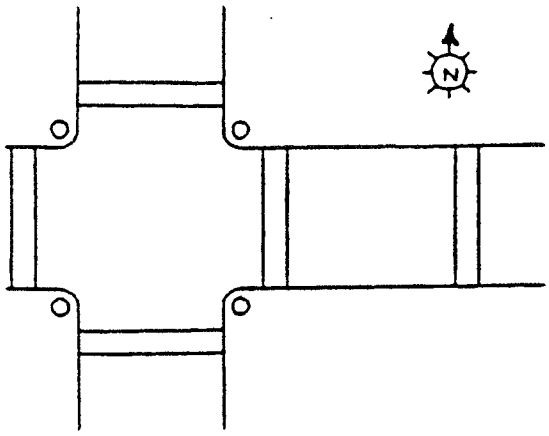
TOTAL NO.	FATAL	INJURY	P.D.	ANGLE	L TURN	R TURN	REAREND	SIDE SWIPE
16	0	2		2			2	11
%								

ONE VEHICLE	PED/ BIKE	DAY	NIGHT	WET	DRY	EXCESS. SPEED	FTY R/W	DUI
1 (ANGLE)	1	8	8	0	16	0		1

TOTAL VEHICLES ENTERING/ADT: 29,000 ADT ACCIDENT RATE: 4-5/YEAR

SUMMARY OF PEDESTRIAN MOVEMENTS

LOCATION ESTERO BLVD / 5TH AVE
COUNTY _____ CITY FORT MYERS BEACH
OBSERVER _____ DATE 12-17-99



WEATHER _____
ROADWAY WIDTH:
N/S 40 E/W 24'
MEDIAN WIDTH:
≥4 <4
REMARKS _____

PEDESTRIAN MOVEMENTS

TIME	NORTH	SOUTH	EAST	WEST
4 to 5 PM	3	40	0	34
8 to 9 AM	1	2	0	7

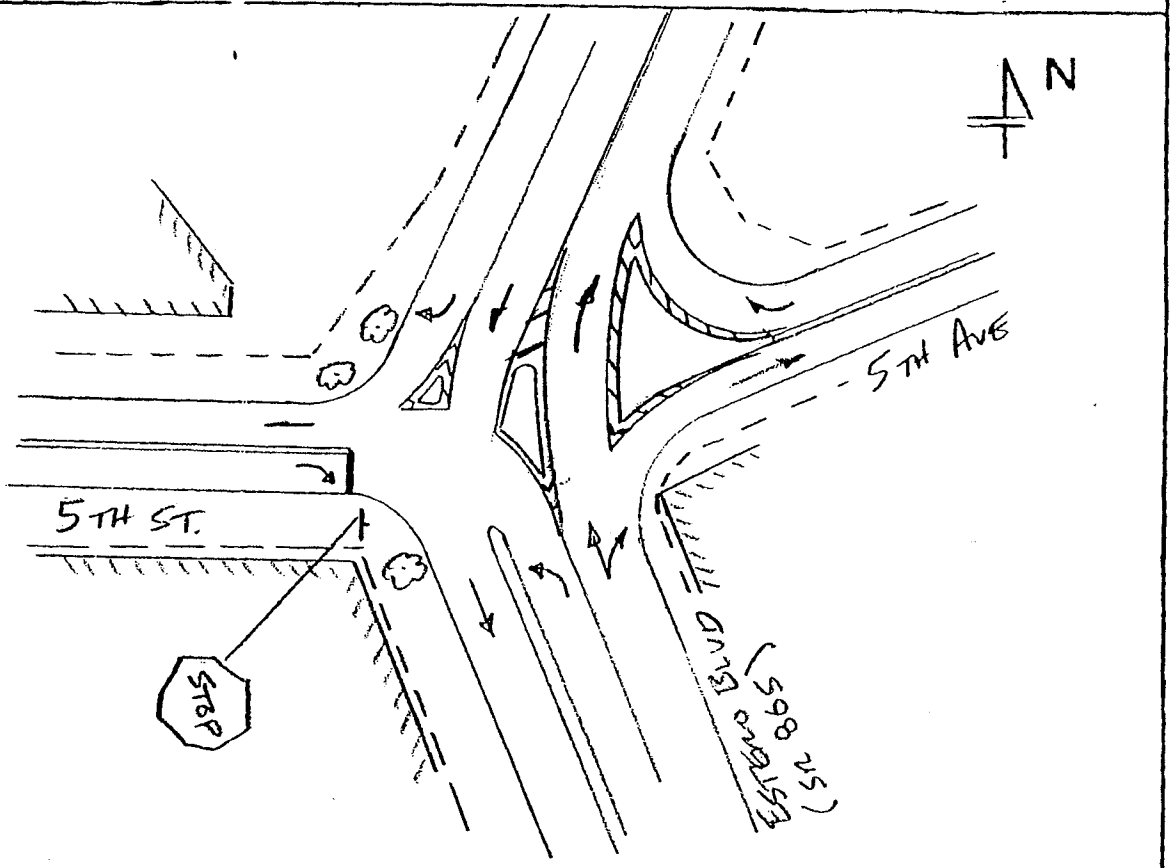
FLORIDA DEPARTMENT OF TRANSPORTATION

CONDITION DIAGRAM

LOCATION I.D. ESTERO BLVD (SR 865) @ 5TH AVE

COUNTY LEE CITY FT. MYERS BEACH

DRAWN BY ARCHOLD KEHLY DATE 3/13/00



SYMBOLS

TREES	POWER POLE	SIGN (1 POST)
SHRUBS	TELEPHONE POLE	SIGN (2 POSTS)
HEDGE	COMBINATION POLE	OVERHEAD SIGN
BUILDING	TRAFFIC SIGNAL POLE	TRAFFIC SIGNAL HEAD
RIGHT OF WAY LINE	HYDRANT	PED. SIGNAL HEAD
FENCE	CONTROLLER CABINET	PED. PUSHBUTTON
GUARDRAIL	VEHICLE DETECTOR LOOP	RR SIGNAL (W/GATE)

ESTERO BLVD/5TH AVENUE * AMNEW *
AM PEAK based on new traffic flows with new layout
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	283	751	0.377	5.1	B
		283	751	0.377	5.1	B
South: South Approach						
32	LTR	780	1581	0.493	0.8	B
		780	1581	0.493	0.8	B
East: East Approach						
22	LT	31	560	0.055	6.9	B
23	R (Con)	13	1900	0.007	0.0	A#
		44	2460	0.055	4.8	B
North: North Approach						
42	LTR	930	1681	0.553*	0.7	B
		930	1681	0.553	0.7	B
ALL VEHICLES:		2037	6472	0.553	1.5	B
INTERSECTION:		2037	6472	0.553	1.5	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

ESTORO BLVD/5TH AVENUE * PMNEW *
PM PEAK new traffic flow based on new layout
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	553	809	0.684	7.9	C
		553	809	0.684	7.9	C
South: South Approach						
32	LTR	1009	1249	0.808*	4.6	B
		1009	1249	0.808	4.6	B
East: East Approach						
22	LT	46	315	0.146	13.5	C
23	R (Con)	30	1900	0.016	0.0	A#
		76	2215	0.146	8.1	B
North: North Approach						
42	LTR	985	1573	0.626	0.9	B
		985	1573	0.626	0.9	B
ALL VEHICLES:		2623	5846	0.808	4.0	B
INTERSECTION:		2623	5846	0.808	4.0	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

ESTERO BLVD/5TH AVENUE * AMNEW15 *
AM PEAK BASED ON NEW COUNTS AND 15 PERCENT INCREASE IN TRAFFIC
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	325	661	0.492	7.7	B
		325	661	0.492	7.7	B
South: South Approach						
32	LTR	896	1525	0.588	1.1	B
		896	1525	0.588	1.1	B
East: East Approach						
22	LT	35	463	0.076	9.1	C
23	R (Con)	15	1900	0.008	0.0	A#
		50	2363	0.076	6.4	B
North: North Approach						
42	LTR	1068	1634	0.654*	1.0	B
		1068	1634	0.654	1.0	B
ALL VEHICLES:		2339	6183	0.654	2.1	B
INTERSECTION:		2339	6183	0.654	2.1	B

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---

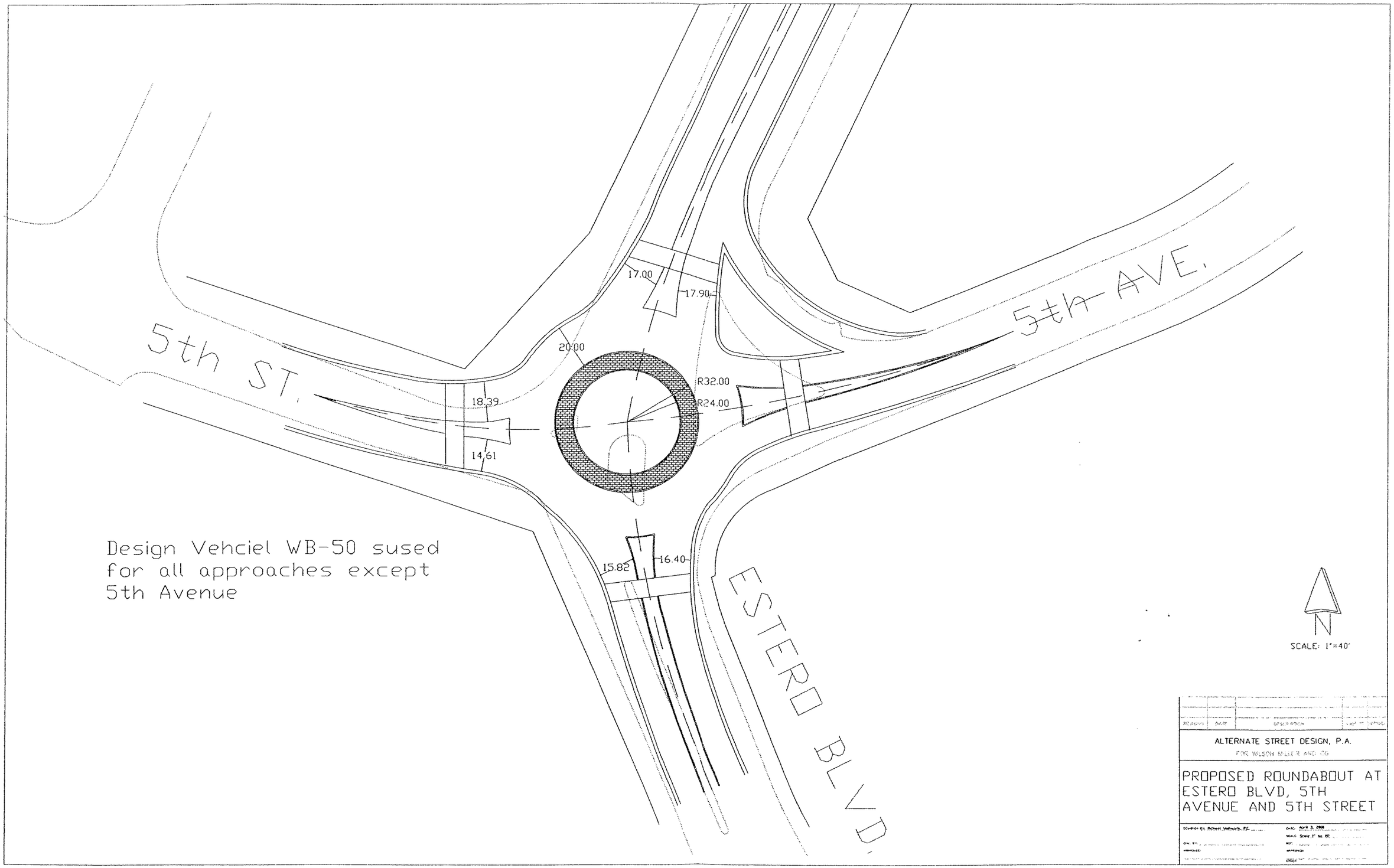
ESTORO BLVD/5TH AVENUE * PMNEW15 *
PM PEAK new traffic flow based on new layout with 15 percent more traffic
Intersection ID:
Roundabout

Table S.15 - CAPACITY AND LEVEL OF SERVICE (HCM STYLE)

Mov No.	Mov Typ	Total Flow (veh /h)	Total Cap. (veh /h)	Deg. of Satn (v/c)	Aver. Delay (sec)	LOS
West: West Approach						
12	LTR	635	680	0.934	24.8	D
		635	680	0.934	24.8	D
South: South Approach						
32	LTR	1160	1156	1.003*	24.8	D
		1160	1156	1.003	24.8	D
East: East Approach						
22	LT	52	156	0.333	23.7	D
23	R (Con)	34	1900	0.018	0.0	A#
		86	2056	0.333	14.3	C
North: North Approach						
42	LTR	1132	1491	0.759	1.7	B
		1132	1491	0.759	1.7	B
ALL VEHICLES:		3013	5383	1.003	15.8	C
INTERSECTION:		3013	5383	1.003	15.8	C

Level of Service calculations are based on
average control delay including geometric delay (HCM criteria),
independent of the current delay definition used.
For the criteria, refer to the "Level of Service" topic in
the SIDRA Output Guide or the Output section of the on-line help.
\# Level Of Service for continuous movements based on density/concentration
* Maximum v/c ratio, or critical green periods

--- End of SIDRA Output ---



NO.	DATE	DESCRIPTION	CHK'D	APPVD

ALTERNATE STREET DESIGN, P.A.

FOR WILSON MILLER AND CO.

PROPOSED ROUNDABOUT AT ESTERO BLVD, 5TH AVENUE AND 5TH STREET

DESIGNED BY: RICHARD VANDERPOL, P.E.

DRAWN BY:

CHECKED:

DATE: APRIL 3, 2008

SCALE: SCALE 1" to 40'

PROJ. #:

REFERENCE:

SHEET #:

HCS: Unsignalized Intersections Release 3.1b

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

nalyst: J. Perry
ntersection: Estero Blvd. @ 5th St. & 5th Ave.
ount Date: Dec. 22, 1999
ime Period: PM Peak

ntersection Orientation: North-South Major St.

ehicle Volume Data:

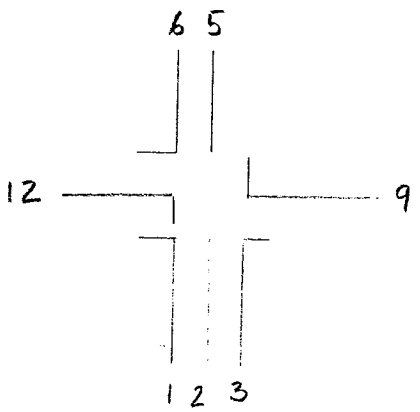
ovements:	1	2	3	5	6	9	12
olume:	146	731	30	638	247	329	194
FR:	154	769	32	672	260	346	204
HF:	0.95	0.95	0.95	0.95	0.95	0.95	0.95
HV:	0.02	0.02	0.02	0.02	0.02	0.02	0.02

edestrian Volume Data:

ovements:

low:
ane width:
alk speed:
Blockage:

edian Type: Raised Curb
of vehicles: 3



ared approach Movements:

of vehicles: Eastbound 3
of vehicles: Westbound 4

ane usage for movements 1,2&3 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

annelized: N
rade: 0.00

ane usage for movements 4,5&6 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
N	Y	N	N	N	Y	N	N	N

hannelized: Y
ade: 0.00

ane usage for movements 7,8&9 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
N	N	Y	N	N	N	N	N	N

annelized: Y
rade: 0.00

Lane usage for movements 10,11&12 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
N	N	Y	N	N	N	N	N	N

Channelized: Y
Grade: 0.00

Data for Computing Effect of Delay to Major Street Vehicles:

	Northbound	Southbound
Shared ln volume, major th vehicles:	0	0
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Length of study period, hrs: 0.25

Worksheet 4 Critical Gap and Follow-up time calculation.

Critical Gap Calculations:

Movement	1	9	12
t c,base	4.1	6.2	6.2
t c,hv	1.0	1.0	1.0
P hv	0.02	0.02	0.02
t c,g		0.1	0.1
G	0.00	0.00	0.00
t 3,lt	0.0	0.0	0.0
t c,T:			
1 stage	0.00	0.00	0.00
2 stage	0.00	0.00	0.00
t c			
1 stage	4.1	6.2	6.2
2 stage	4.1	6.2	6.2

Follow Up Time Calculations:

Movement	1	9	12
t f,base	2.2	3.3	3.3
t f,HV	0.9	0.9	0.9
P hv	0.02	0.02	0.02
t f	2.2	3.3	3.3

Worksheet 6 Impedance and capacity equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	785	672
Potential Capacity	393	456
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	393	456
Probability of Queue free St.	0.12	0.55

Step 2: LT from Major St.	4	1
Conflicting Flows		672
Potential Capacity		919
Pedestrian Impedance Factor		1.00
Movement Capacity		919
Probability of Queue free St.		0.83

orksheet 7a - Computation of the effect of Two-stage gap acceptance

tep 3: TH from Minor St.	8	11
art 1- First Stage		
onflicting Flows	1093	672
otential Capacity	293	458
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.83	1.00
ovement Capacity	244	458
robability of Queue free St.	1.00	1.00
art 2- Second Stage		
onflicting Flows	672	1108
otential Capacity	458	288
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	1.00	0.83
ovement Capacity	458	240
art 3- Single Stage		
onflicting Flows	1764	1780
otential Capacity	85	83
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.83	0.83
ovement Capacity	71	69
esult for 2 stage process:		
	0.97	0.97
	0.74	2.28
t	210	224
robability of Queue free St.	1.00	1.00

orksheet 7b - Computation of the effect of Two-stage gap acceptance

tep 4: LT from Minor St.	7	10
art 1- First Stage		
onflicting Flows	1093	672
tential Capacity	262	449
edestrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.83	1.00
ovement Capacity	218	449
art 2- Second Stage		
onflicting Flows	802	1093
tential Capacity	381	262
edestrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.55	0.10
ovement Capacity	210	26
art 3- Single Stage		
onflicting Flows	1894	1764
tential Capacity	54	66
edestrian Impedance Factor	1.00	1.00
j. L, Min T Impedance factor	0.83	0.83
j. L, Min T Adj. Imp Factor.	0.87	0.87
ap. Adj. factor due to Impeding mvmnt	0.48	0.10
vement Capacity	26	7

Result for 2 stage process:

a	0.97	0.97
y	6.26	23.37
C t	55	25

Worksheet 10 delay,queue length, and LOS

Movement	1	4	7	8	9	10	11	12
v(vph)	154				346			204
C m(vph)	919				393			456
v/c	0.17				0.88			0.45
95% queue length								
Control Delay	9.7				53.6			19.1
LOS	A				F			C
Approach Delay				53.6			19.1	
Approach LOS				F			C	

HCS: Unsignalized Intersections Release 3.1b

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

alyst: J. Perry
ntersection: Estero Blvd. @ 5th St. & 5th Ave.
unt Date: Dec. 22, 1999
ime Period: PM Peak +15%

ntersection Orientation: North-South Major St.

hicle Volume Data:

vements:	1	2	3	5	6	9	12
lume:	168	841	35	734	284	378	223
FR:	177	885	37	773	299	398	235
F:	0.95	0.95	0.95	0.95	0.95	0.95	0.95
V:	0.02	0.02	0.02	0.02	0.02	0.02	0.02

destrian Volume Data:

vements:

ow:
ane width:
lk speed:
Blockage:

edian Type: Raised Curb
of vehicles: 3

ared approach Movements:

of vehicles: Eastbound 3
of vehicles: Westbound 4

ane usage for movements 1,2&3 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

annelized: N
rade: 0.00

ne usage for movements 4,5&6 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
N	Y	N	N	N	Y	N	N	N

hannelized: Y
ade: 0.00

ne usage for movements 7,8&9 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
N	N	Y	N	N	N	N	N	N

annelized: Y
ade: 0.00

Lane usage for movements 10,11&12 approach:

Lane 1			Lane 2			Lane 3		
L	T	R	L	T	R	L	T	R
N	N	Y	N	N	N	N	N	N

Channelized: Y
Grade: 0.00

Data for Computing Effect of Delay to Major Street Vehicles:

	Northbound	Southbound
Shared ln volume, major th vehicles:	0	0
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Length of study period, hrs: 0.25

Worksheet 4 Critical Gap and Follow-up time calculation.

Critical Gap Calculations:

Movement	1	9	12
t c,base	4.1	6.2	6.2
t c,hv	1.0	1.0	1.0
P hv	0.02	0.02	0.02
t c,g		0.1	0.1
G	0.00	0.00	0.00
t 3,lt	0.0	0.0	0.0
t c,T:			
1 stage	0.00	0.00	0.00
2 stage	0.00	0.00	0.00
t c			
1 stage	4.1	6.2	6.2
2 stage	4.1	6.2	6.2

Follow Up Time Calculations:

Movement	1	9	12
t f,base	2.2	3.3	3.3
t f,HV	0.9	0.9	0.9
P hv	0.02	0.02	0.02
t f	2.2	3.3	3.3

Worksheet 6 Impedance and capacity equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	904	773
Potential Capacity	336	399
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	336	399
Probability of Queue free St.	0.00	0.41

Step 2: LT from Major St.	4	1
Conflicting Flows		773
Potential Capacity		843
Pedestrian Impedance Factor		1.00
Movement Capacity		843
Probability of Queue free St.		0.79

orksheet 7a - Computation of the effect of Two-stage gap acceptance

tep 3: TH from Minor St.	8	11
art 1- First Stage		
onflicting Flows	1257	773
otential Capacity	245	412
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.79	1.00
ovement Capacity	193	412
robability of Queue free St.	1.00	1.00
art 2- Second Stage		
onflicting Flows	773	1276
otential Capacity	412	240
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	1.00	0.79
ovement Capacity	412	189
art 3- Single Stage		
onflicting Flows	2030	2048
otential Capacity	58	57
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.79	0.79
ovement Capacity	46	45
esult for 2 stage process:		
	0.97	0.97
	0.78	2.54
t	163	178
robability of Queue free St.	1.00	1.00

orksheet 7b - Computation of the effect of Two-stage gap acceptance

tep 4: LT from Minor St.	7	10
art 1- First Stage		
onflicting Flows	1257	773
otential Capacity	212	395
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.79	1.00
ovement Capacity	167	395
art 2- Second Stage		
onflicting Flows	922	1257
otential Capacity	327	212
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.41	0.00
ovement Capacity	135	0
art 3- Single Stage		
onflicting Flows	2179	2030
otential Capacity	34	43
edestrian Impedance Factor	1.00	1.00
dj. L, Min T Impedance factor	0.79	0.79
aj. L, Min T Adj. Imp Factor.	0.84	0.84
ap. Adj. factor due to Impeding mvmnt	0.35	0.00
ovement Capacity	12	0

Result for 2 stage process:

a	0.97	0.97
y	-2.88	0.00
C t	0	0

Worksheet 10 delay,queue length, and LOS

Movement	1	4	7	8	9	10	11	12
v(vph)	177				398			235
C m(vph)	843				336			399
v/c	0.21				1.19			0.59
95% queue length								
Control Delay	10.4				144.0			26.1
LOS	B				F			D
Approach Delay				144.0			26.1	
Approach LOS				F			D	

HCS: Unsignalized Intersections Release 3.1b

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

Analyst: J. Perry
Intersection: Estero Blvd. @ 5th St. & 5th Ave.
Count Date: Dec. 22, 1999 w/Latent Demand
Time Period: PM Peak

Intersection Orientation: North-South Major St.

Vehicle Volume Data:

Movements:	1	2	3	4	5	6	7	8	9	10	11	12
Volume:	146	731	30	17	621	247	20	20	26	303	19	175
PHF:	154	769	32	18	654	260	21	21	27	319	20	184
%HV:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

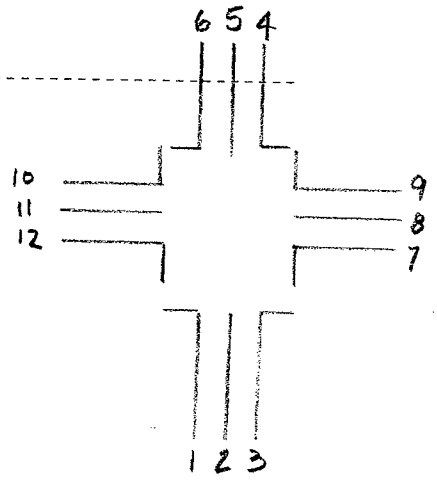
Pedestrian Volume Data:

Movements:
Flow:
Lane width:
Walk speed:
% Blockage:

Median Type: Raised Curb
# of vehicles: 3

Shared approach Movements:

# of vehicles: Eastbound 3
# of vehicles: Westbound 4



Lane usage for movements 1,2&3 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

Channelized: N
Grade: 0.00

Lane usage for movements 4,5&6 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

Channelized: N
Grade: 0.00

Lane usage for movements 7,8&9 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	Y	Y	N	N	Y	N	N	N

Channelized: Y
Grade: 0.00

Lane usage for movements 10,11&12 approach:

Lane 1			Lane 2			Lane 3		
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

Channelized: Y
Grade: 0.00

Data for Computing Effect of Delay to Major Street Vehicles:

	Northbound	Southbound
Shared ln volume, major th vehicles:	0	0
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Length of study period, hrs: 0.25

Worksheet 4 Critical Gap and Follow-up time calculation.

Critical Gap Calculations:

Movement	1	4	7	8	9	10	11	12
t c,base	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
t c,hv	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P hv	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
t c,g			0.2	0.2	0.1	0.2	0.2	0.1
G	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t 3,lt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
t c,T:								
1 stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t c								
1 stage	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
2 stage	4.1	4.1	6.1	5.5	6.2	6.1	5.5	6.2

Follow Up Time Calculations:

Movement	1	4	7	8	9	10	11	12
t f,base	2.2	2.2	3.5	4.0	3.3	3.5	4.0	3.3
t f,HV	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P hv	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
t f	2.2	2.2	3.5	4.0	3.3	3.5	4.0	3.3

Worksheet 6 Impedance and capacity equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	785	784
Potential Capacity	393	393
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	393	393
Probability of Queue free St.	0.93	0.53

Step 2: LT from Major St.	4	1
Conflicting Flows	801	914
Potential Capacity	822	746
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	822	746
Probability of Queue free St.	0.98	0.79

orksheet 7a - Computation of the effect of Two-stage gap acceptance

ep 3: TH from Minor St.	8	11
rt 1- First Stage		
nflicting Flows	1093	819
otential Capacity	290	389
destrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.79	0.98
vement Capacity	231	381
robability of Queue free St.	0.91	0.95
art 2- Second Stage		
onflicting Flows	949	1108
tential Capacity	339	285
destrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.98	0.79
vement Capacity	331	227
art 3- Single Stage		
nflicting Flows	2042	1928
tential Capacity	56	66
destrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.78	0.78
vement Capacity	44	52
esult for 2 stage process:		
	0.97	0.97
	1.39	2.09
t	153	193
robability of Queue free St.	0.86	0.90

orksheet 7b - Computation of the effect of Two-stage gap acceptance

tep 4: LT from Minor St.	7	10
rt 1- First Stage		
nflicting Flows	1093	819
tential Capacity	260	369
destrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.79	0.98
vement Capacity	206	361
art 2- Second Stage		
nflicting Flows	829	1103
tential Capacity	365	256
destrian Impedance Factor	1.00	1.00
p. Adj. factor due to Impeding mvmnt	0.49	0.67
vement Capacity	180	172
art 3- Single Stage		
nflicting Flows	1922	1923
tential Capacity	51	51
destrian Impedance Factor	1.00	1.00
j. L, Min T Impedance factor	0.70	0.67
j. L, Min T Adj. Imp Factor.	0.76	0.74
p. Adj. factor due to Impeding mvmnt	0.41	0.69
vement Capacity	21	35

Result for 2 stage process:

a	0.97	0.97
y	34.47	2.74
C t	25	145

Worksheet 8 Shared Lane Calculations

Shared Lane Calculations

Movement	7	8	9	10	11	12
v(vph)	21	21	27	319	20	184
Movement Capacity	25	153	393	145	193	393
Shared Lane Capacity	55				357	

Worksheet 9-Computation of effect of flared minor street approaches

Movement	7	8	9	10	11	12
C sep	25	153	393	145	193	393
Volume	21	21	27	319	20	184
Delay	347.2	32.2	14.9	609.5	25.8	22.0
Q sep	2.03	0.19	0.11	54.00	0.14	1.12
Q sep +1	3.03	1.19	1.11	55.00	1.14	2.12
round (Qsep +1)	3	1	1	55	1	2
n max		3			55	
C sh		393			357	
SUM C sep		571			731	
n		3			4	
C act		571			384	

Worksheet 10 delay,queue length, and LOS

Movement	1	4	7	8	9	10	11	12
v(vph)	154	18	56	14		319	204	
C m(vph)	746	822	55	571		145	384	
v/c	0.21	0.02	1.01	0.02		2.19	0.53	
95% queue length								
Control Delay	11.1	9.5	244.6	11.5		609.5	24.5	
LOS	B	A	F	B		F	C	
Approach Delay				198.7			381.1	
Approach LOS				F			F	

HCS: Unsignalized Intersections Release 3.1b

TWO-WAY STOP CONTROL(TWSC) ANALYSIS

nalyst: J. Perry
ntersection: Estero Blvd. @ 5th St. & 5th Ave.
ount Date: Dec. 22, 1999 w/Latent Demand
ime Period: PM Peak + 15%

ntersection Orientation: North-South Major St.

ehicle Volume Data:

ovements:	1	2	3	4	5	6	7	8	9	10	11	12
olume:	168	841	35	20	715	284	23	23	30	349	22	201
FR:	177	885	37	21	753	299	24	24	32	367	23	212
HF:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
HV:	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

edestrian Volume Data:

ovements:

low:
ane width:
alk speed:
Blockage:

edian Type: Raised Curb
of vehicles: 3

lared approach Movements:

of vehicles: Eastbound 3
of vehicles: Westbound 4

ane usage for movements 1,2&3 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

annelized: N
rade: 0.00

ane usage for movements 4,5&6 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

hannelized: N
rade: 0.00

ane usage for movements 7,8&9 approach:

	Lane 1			Lane 2			Lane 3	
L	T	R	L	T	R	L	T	R
Y	Y	Y	N	N	Y	N	N	N

hannelized: Y
rade: 0.00

Lane usage for movements 10,11&12 approach:

Lane 1			Lane 2			Lane 3		
L	T	R	L	T	R	L	T	R
Y	N	N	N	Y	Y	N	N	N

Channelized: Y
Grade: 0.00

Data for Computing Effect of Delay to Major Street Vehicles:

	Northbound	Southbound
Shared ln volume, major th vehicles:	0	0
Shared ln volume, major rt vehicles:	0	0
Sat flow rate, major th vehicles:	1700	1700
Sat flow rate, major rt vehicles:	1700	1700
Number of major street through lanes:	1	1

Length of study period, hrs: 0.25

Worksheet 4 Critical Gap and Follow-up time calculation.

Critical Gap Calculations:

Movement	1	4	7	8	9	10	11	12
t c,base	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
t c,hv	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P hv	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
t c,g			0.2	0.2	0.1	0.2	0.2	0.1
G	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
t 3,lt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
t c,T:								
1 stage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2 stage	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
t c								
1 stage	4.1	4.1	7.1	6.5	6.2	7.1	6.5	6.2
2 stage	4.1	4.1	6.1	5.5	6.2	6.1	5.5	6.2

Follow Up Time Calculations:

Movement	1	4	7	8	9	10	11	12
t f,base	2.2	2.2	3.5	4.0	3.3	3.5	4.0	3.3
t f,HV	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P hv	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
t f	2.2	2.2	3.5	4.0	3.3	3.5	4.0	3.3

Worksheet 6 Impedance and capacity equations

Step 1: RT from Minor St.	9	12
Conflicting Flows	904	902
Potential Capacity	336	336
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	336	336
Probability of Queue free St.	0.91	0.37

Step 2: LT from Major St.	4	1
Conflicting Flows	922	1052
Potential Capacity	741	662
Pedestrian Impedance Factor	1.00	1.00
Movement Capacity	741	662
Probability of Queue free St.	0.97	0.73

orksheet 7a - Computation of the effect of Two-stage gap acceptance

tep 3: TH from Minor St.	8	11
art 1- First Stage		
onflicting Flows	1257	944
otential Capacity	242	341
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.73	0.97
ovement Capacity	178	331
robability of Queue free St.	0.86	0.93
art 2- Second Stage		
onflicting Flows	1094	1276
otential Capacity	290	238
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.97	0.73
ovement Capacity	282	174
art 3- Single Stage		
onflicting Flows	2351	2220
otential Capacity	36	43
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.71	0.71
ovement Capacity	26	31
esult for 2 stage process:		
	0.97	0.97
	1.92	2.46
t	96	143
robability of Queue free St.	0.75	0.84

orksheet 7b - Computation of the effect of Two-stage gap acceptance

tep 4: LT from Minor St.	7	10
art 1- First Stage		
onflicting Flows	1257	944
otential Capacity	210	315
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.73	0.97
ovement Capacity	154	306
art 2- Second Stage		
onflicting Flows	956	1269
otential Capacity	310	206
edestrian Impedance Factor	1.00	1.00
ap. Adj. factor due to Impeding mvmnt	0.33	0.57
ovement Capacity	104	118
art 3- Single Stage		
onflicting Flows	2213	2214
otential Capacity	31	31
edestrian Impedance Factor	1.00	1.00
aj. L, Min T Impedance factor	0.60	0.53
aj. L, Min T Adj. Imp Factor.	0.69	0.63
ap. Adj. factor due to Impeding mvmnt	0.25	0.57
ovement Capacity	8	18

Result for 2 stage process:

a	0.97	0.97
y	-1.80	3.63
C t	0	93

Worksheet 8 Shared Lane Calculations

Shared Lane Calculations

Movement	7	8	9	10	11	12
v(vph)	24	24	32	367	23	212
Movement Capacity	0	96	336	93	143	336
Shared Lane Capacity	0				297	

Worksheet 9-Computation of effect of flared minor street approaches

Movement	7	8	9	10	11	12
C sep	0	96	336	93	143	336
Volume	24	24	32	367	23	212
Delay	0.0	54.9	16.8	1424.5	35.0	32.2
Q sep	0.00	0.37	0.15	145.37	0.22	1.90
Q sep +1	1.00	1.37	1.15	146.37	1.22	2.90
round (Qsep +1)	1	1	1	146	1	3
n max		1			146	
C sh		336			297	
SUM C sep		431			572	
n		3			4	
C act		431			304	

Worksheet 10 delay,queue length, and LOS

Movement	1	4	7	8	9	10	11	12
v(vph)	177	21	64	16		367	235	
C m(vph)	662	741		431		93	304	
v/c	0.27	0.03		0.04		3.96	0.77	
95% queue length								
Control Delay	12.4	10.0		13.7		1424.5	47.6	
LOS	B	B		B		F	E	
Approach Delay							887.7	
Approach LOS							F	

HCS: Signals Release 3.1b

Inter:
Analyst: J. Perry
Date: 12/22/99
E/W St: 5th

City/St: Fort Myers Beach, FL
Proj #:
Period: PM Peak
N/S St: Center St.

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	303	16	175	20	20	26	146	731	30	17	621	247
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			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left	P				NB	Left	P			
Thru	P	P				Thru	P	P		
Right	P	P				Right	P	P		
Peds						Peds				
WB Left		P			SB	Left		P		
Thru		P				Thru		P		
Right		P				Right		P		
Peds						Peds				
NB Right					EB	Right				
SB Right					WB	Right				
Green	15.1	1.5					7.3	29.5		
Yellow	4.0	4.0					4.0	4.0		
All Red	0.0	0.0					0.0	0.0		

Cycle Length: 69.4 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	348	1593	0.92	0.218	57.6	E		
T	498	1676	0.03	0.297	17.5	B	44.0	D
R	423	1425	0.43	0.297	22.9	C		
Westbound								
L				0.021				
T	36	1676	0.58	0.021	88.0	F		
R	30	1425	0.90	0.021	168.9	F		
Northbound								
L	168	1593	0.92	0.105	81.1	F		
T	985	1676	0.78	0.588	17.0	B	27.0	C
R	838	1425	0.04	0.588	6.1	A		
Southbound								
L	212	499	0.08	0.425	12.7	B		
T	712	1676	0.92	0.425	37.7	D	31.2	C
R	605	1425	0.43	0.425	16.3	B		

Intersection Delay = (sec/veh) Intersection LOS =

WilsonMiller. Inc.
WilsonMiller, Inc.
3200 Bailey Lane,
Suite 200
Naples, FL 34105
Phone: (941) 649-4040 Fax: (941) 643-5716
E-Mail: www.wilsonmiller.com

- Ver: mal-

OPERATIONAL ANALYSIS

Intersection:
City/State: Fort Myers Beach, FL
Analyst: J. Perry
Project No:
Time Period Analyzed: PM Peak
Date: 12/22/99
East/West Street Name: 5th
North/South Street Name: Center St.

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	303	16	175	20	20	26	146	731	30	17	621	247
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PK 15 Vol	80	4	46	5	5	7	38	192	8	5	163	65
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
ParkExist												
NumPark												
% Heavy Veh	2	2	2	2	2	2	2	2	2	2	2	2
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
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			0			0			0			0
Adj Flow	319	17	184	21	21	27	154	769	32	18	654	260
%InSharedLn												
Prop Turns												
NumPeds			0			0			0			0
NumBus	0	0	0	0	0	0	0	0	0	0	0	0

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arriv. Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Ext.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext of g	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ped Min g		0.0			0.0			0.0			0.0	

PHASE DATA

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P	P			Thru	P	P	
Right	P	P			Right	P	P	
Peds					Peds			
WB Left		P			SB Left		P	
Thru		P			Thru		P	
Right		P			Right		P	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	15.1	1.5				7.3	29.5	
Yellow	4.0	4.0				4.0	4.0	
All Red	0.0	0.0				0.0	0.0	

Cycle Length: 69.4 secs

- Ver. mal-

VOLUME ADJUSTMENT WORKSHEET

Appr./ Movement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop. Left Turns	Prop. Right Turns
Eastbound									
Left	303	0.95	319	1	L		319		
Thru	16	0.95	17	1	T		17		
Right	175	0.95	184	1	R	0	184		
Westbound									
Left	20	0.95	21	1	L		21		
Thru	20	0.95	21	1	T		21		
Right	26	0.95	27	1	R	0	27		
Northbound									
Left	146	0.95	154	1	L		154		
Thru	731	0.95	769	1	T		769		
Right	30	0.95	32	1	R	0	32		
Southbound									
Left	17	0.95	18	1	L		18		
Thru	621	0.95	654	1	T		654		
Right	247	0.95	260	1	R	0	260		

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

Appr/ Lane Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
Eastbound							Sec LT	Adj/LT	Sat:		
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.950	1593
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Westbound							Sec LT	Adj/LT	Sat:		
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----		
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Northbound							Sec LT	Adj/LT	Sat:		
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.950	1593
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Southbound							Sec LT	Adj/LT	Sat:		
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.298	499
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425

- Ver: mat-

CAPACITY ANALYSIS WORKSHEET

Appr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)	Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
Eastbound							
Pri.							
Sec.							
Left	L	319	1593	0.20	0.218	348	0.92
Thru	T	17	1676	0.01	0.297	498	0.03
Right	R	184	1425	0.13	0.297	423	0.43
Westbound							
Pri.							
Sec.							
Left	L	21			0.021		
Thru	T	21	1676	0.01	0.021	36	0.58
Right	R	27	1425	0.02	0.021	30	0.90
Northbound							
Pri.							
Sec.							
Left	L	154	1593	0.10	0.105	168	0.92
Thru	T	769	1676	0.46	0.588	985	0.78
Right	R	32	1425	0.02	0.588	838	0.04
Southbound							
Pri.							
Sec.							
Left	L	18	499	0.04	0.425	212	0.08
Thru	T	654	1676	0.39	0.425	712	0.92
Right	R	260	1425	0.18	0.425	605	0.43

Sum (v/s) critical = 0.00

Lost Time/Cycle, L = 0.00 sec Critical v/c(X) = 0.00

LEVEL OF SERVICE WORKSHEET

Appr/ Lane Grp	Ratios v/c	Ratios g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Incremental Del d2	Res Del d3	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound												
L	0.92	0.218	26.5	1.000	348	0.50	31.1	0.0	57.6	E		
T	0.03	0.297	17.3	1.000	498	0.50	0.1	0.0	17.5	B	44.0	D
R	0.43	0.297	19.7	1.000	423	0.50	3.2	0.0	22.9	C		
Westbound												
L		0.021		1.000		0.50		0.0				
T	0.58	0.021	33.7	1.000	36	0.50	54.3	0.0	88.0	F		
R	0.90	0.021	33.9	1.000	30	0.50	135.0	0.0	168.9	F		
Northbound												
L	0.92	0.105	30.7	1.000	168	0.50	50.3	0.0	81.1	F		
T	0.78	0.588	10.9	1.000	985	0.50	6.1	0.0	17.0	B	27.0	C
R	0.04	0.588	6.0	1.000	838	0.50	0.1	0.0	6.1	A		
Southbound												
L	0.08	0.425	11.9	1.000	212	0.50	0.8	0.0	12.7	B		
T	0.92	0.425	18.8	1.000	712	0.50	18.8	0.0	37.7	D	31.2	C
R	0.43	0.425	14.0	1.000	605	0.50	2.2	0.0	16.3	B		

Intersection Delay = (sec/veh) Intersection LOS =

- Ver: mal-

HCS: Signals Release 3.1b

Inter: Center St. @ 5th Ave.
Analyst: J. Perry
Date: 12/22/99
E/W St: 5th

City/St: Fort Myers Beach, FL
Proj #:
Period: PM Peak +15%
N/S St: Center St.

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	349	22	201	23	23	30	168	841	35	20	715	284
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			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	P				NB Left	P			
Thru	P	P			Thru	P	P		
Right	P	P			Right	P	P		
Peds					Peds				
WB Left		P			SB Left		P		
Thru		P			Thru		P		
Right		P			Right		P		
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	15.1	1.5				7.3	29.5		
Yellow	4.0	4.0				4.0	4.0		
All Red	0.0	0.0				0.0	0.0		

Cycle Length: 69.4 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	348	1593	1.05	0.218	90.5	F		
T	498	1676	0.05	0.297	17.6	B	64.4	E
R	423	1425	0.50	0.297	24.3	C		
Westbound								
L				0.021				
T	36	1676	0.67	0.021	102.3	F		
R	30	1425	1.07	0.021	219.3	F		
Northbound								
L	168	1593	1.05	0.105	115.4	F		
T	985	1676	0.90	0.588	25.2	C	39.1	D
R	838	1425	0.04	0.588	6.2	A		
Southbound								
L	139	327	0.15	0.425	14.6	B		
T	712	1676	1.06	0.425	69.9	E	54.2	D
R	605	1425	0.49	0.425	17.4	B		

Intersection Delay = (sec/veh) Intersection LOS =

HCS: Signals Release 3.1b

WilsonMiller. Inc.
WilsonMiller, Inc.
3200 Bailey Lane,
Suite 200
Naples, FL 34105
Phone: (941) 649-4040 Fax: (941) 643-5716
E-Mail: www.wilsonmiller.com

- Ver mal-

OPERATIONAL ANALYSIS

Intersection: Center St. @ 5th Ave.
City/State: Fort Myers Beach, FL
Analyst: J. Perry
Project No:
Time Period Analyzed: PM Peak
Date: 12/22/99
East/West Street Name: 5th
North/South Street Name: Center St.

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	349	22	201	23	23	30	168	841	35	20	715	284
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PK 15 Vol	92	6	53	6	6	8	44	221	9	5	188	75
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
ParkExist												
NumPark												
% Heavy Veh	2	2	2	2	2	2	2	2	2	2	2	2
No. Lanes	1	1	1	1	1	1	1	1	1	1	1	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
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			0			0			0			0
Adj Flow	367	23	212	24	24	32	177	885	37	21	753	299
%InSharedLn												
Prop Turns												
NumPeds			0			0			0			0
NumBus	0	0	0	0	0	0	0	0	0	0	0	0

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Arriv. Type	3	3	3	3	3	3	3	3	3	3	3	3
Unit Ext.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext of g	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ped Min g		0.0			0.0			0.0			0.0	

PHASE DATA

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P	P			Thru	P	P	
Right	P	P			Right	P	P	
Peds					Peds			
WB Left		P			SB Left		P	
Thru		P			Thru		P	
Right		P			Right		P	
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	15.1	1.5				7.3	29.5	
Yellow	4.0	4.0				4.0	4.0	
All Red	0.0	0.0				0.0	0.0	

Cycle Length: 69.4 secs

- Ver. mal-

VOLUME ADJUSTMENT WORKSHEET

Appr./ Movement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop. Left Turns	Prop. Right Turns
Eastbound									
Left	349	0.95	367	1	L		367		
Thru	22	0.95	23	1	T		23		
Right	201	0.95	212	1	R	0	212		
Westbound									
Left	23	0.95	24	1	L		24		
Thru	23	0.95	24	1	T		24		
Right	30	0.95	32	1	R	0	32		
Northbound									
Left	168	0.95	177	1	L		177		
Thru	841	0.95	885	1	T		885		
Right	35	0.95	37	1	R	0	37		
Southbound									
Left	20	0.95	21	1	L		21		
Thru	715	0.95	753	1	T		753		
Right	284	0.95	299	1	R	0	299		

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

Appr/ Lane Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
Eastbound							Sec LT Adj/LT Sat:				
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.950	1593
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Westbound							Sec LT Adj/LT Sat:				
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----		
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Northbound							Sec LT Adj/LT Sat:				
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.950	1593
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425
Southbound							Sec LT Adj/LT Sat:				
L	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	----	0.195	327
T	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	1.000	1.000	1676
R	1900	1.000	0.980	1.000	1.000	1.000	0.90	1.00	0.850	----	1425

CAPACITY ANALYSIS WORKSHEET

Appr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)	Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
Eastbound							
Pri.							
Sec.							
Left	L	367	1593	0.23	0.218	348	1.05
Thru	T	23	1676	0.01	0.297	498	0.05
Right	R	212	1425	0.15	0.297	423	0.50
Westbound							
Pri.							
Sec.							
Left	L	24			0.021		
Thru	T	24	1676	0.01	0.021	36	0.67
Right	R	32	1425	0.02	0.021	30	1.07
Northbound							
Pri.							
Sec.							
Left	L	177	1593	0.11	0.105	168	1.05
Thru	T	885	1676	0.53	0.588	985	0.90
Right	R	37	1425	0.03	0.588	838	0.04
Southbound							
Pri.							
Sec.							
Left	L	21	327	0.06	0.425	139	0.15
Thru	T	753	1676	0.45	0.425	712	1.06
Right	R	299	1425	0.21	0.425	605	0.49

Sum (v/s) critical = 0.00

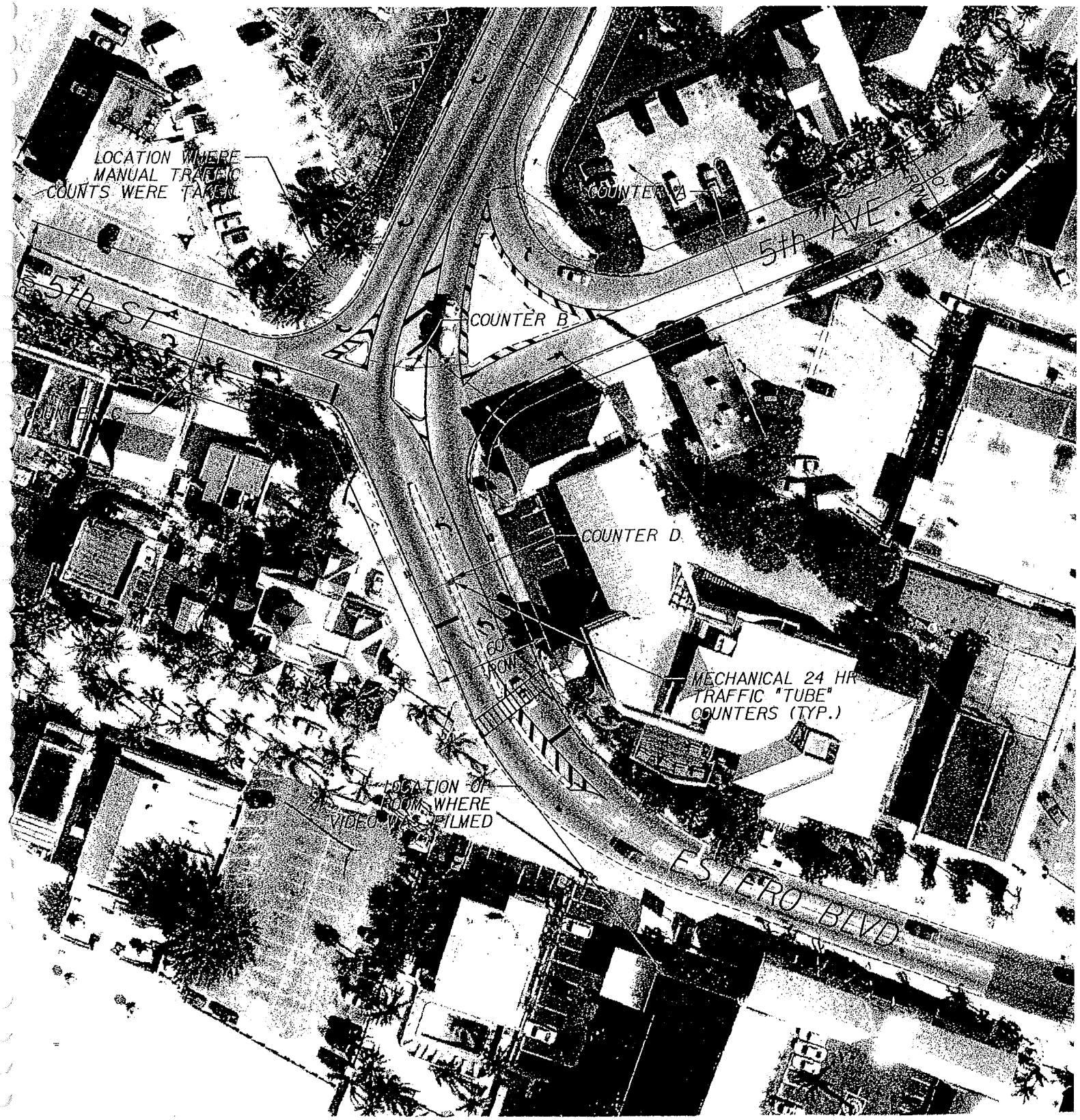
Lost Time/Cycle, L = 0.00 sec Critical v/c(X) = 0.00

LEVEL OF SERVICE WORKSHEET

Appr/ Lane Grp	Ratios v/c	Ratios g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Incremental Del d2	Res Del d3	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound												
L	1.05	0.218	27.1	1.000	348	0.50	63.3	0.0	90.5	F		
T	0.05	0.297	17.4	1.000	498	0.50	0.2	0.0	17.6	B	64.4	E
R	0.50	0.297	20.2	1.000	423	0.50	4.2	0.0	24.3	C		
Westbound												
L		0.021		1.000		0.50		0.0				
T	0.67	0.021	33.7	1.000	36	0.50	68.6	0.0	102.3	F		
R	1.07	0.021	34.0	1.000	30	0.50	185.4	0.0	219.3	F		
Northbound												
L	1.05	0.105	31.1	1.000	168	0.50	84.3	0.0	115.4	F		
T	0.90	0.588	12.5	1.000	985	0.50	12.7	0.0	25.2	C	39.1	D
R	0.04	0.588	6.1	1.000	838	0.50	0.1	0.0	6.2	A		
Southbound												
L	0.15	0.425	12.3	1.000	139	0.50	2.3	0.0	14.6	B		
T	1.06	0.425	20.0	1.000	712	0.50	50.0	0.0	69.9	E	54.2	D
R	0.49	0.425	14.5	1.000	605	0.50	2.9	0.0	17.4	B		

Intersection Delay = (sec/veh) Intersection LOS =

- Ver. mal-


LOCATION WHERE MANUAL TRAFFIC COUNTS WERE TAKEN
COUNTER A
5th AVE
5th ST
COUNTER B
COUNTER C
COUNTER D
MECHANICAL 24 HR TRAFFIC "TUBE" COUNTERS (TYP.)
LOCATION OF ROOM WHERE VIDEO WAS FILMED
ESTERO BLVD

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

****

ata File : D1217002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 17, 99 Start time : 00:00
top date : Dec 17, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ Ave

****

ec 17 Westbound Volume for Lane 1

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	10	1	2	3	0	2	9	15	20	17	34	36
30	11	1	5	2	0	1	7	20	19	32	34	33
45	3	2	1	1	1	4	9	15	30	36	50	24
00	7	0	2	1	1	2	8	19	29	35	40	34
r Total	31	4	10	7	2	9	33	69	98	120	158	127

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	40	44	54	58	50	53	22	26	23	20	30	19
30	30	40	41	40	37	38	27	20	18	24	19	22
45	45	29	37	47	67	39	37	31	20	20	14	46
00	44	43	42	33	46	32	29	22	21	12	16	11
r Total	159	156	174	178	200	162	115	99	82	76	79	98

idnight Total : 2246
M peak hour begins : 10:15 AM peak volume : 160 Peak hour factor : 0.80
M peak hour begins : 16:30 PM peak volume : 204 Peak hour factor : 0.76

****

ec 17 Eastbound Volume for Lane 2

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	1	0	0	0	0	0	1	1	1	2	4
30	0	0	0	0	0	3	0	3	0	0	2	3
45	1	0	0	0	0	0	0	0	4	1	6	3
00	1	0	1	0	1	0	1	2	2	0	1	9
r Total	4	1	1	0	1	3	1	6	7	2	11	19

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	4	6	3	4	0	7	4	1	3	2	3	4
30	1	0	2	1	4	6	5	6	3	4	3	3
45	8	2	17	10	7	1	3	0	7	5	1	5
00	5	0	6	1	3	4	2	3	1	6	5	3
r Total	18	8	28	16	14	18	14	10	14	17	12	15

idnight Total : 240
M peak hour begins : 11:00 AM peak volume : 19 Peak hour factor : 0.53
M peak hour begins : 14:15 PM peak volume : 29 Peak hour factor : 0.43

****

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

ata File : D1217002.PRN
tation : 000000000311
dentification : 000011169902
tart date : Dec 17, 99
top date : Dec 17, 99
ity/Town : ft. meyers beach
ocation : on 5th ~~street~~ Ave

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

ec 17 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	12	2	2	3	0	2	9	16	21	18	36	40
30	11	1	5	2	0	4	7	23	19	32	36	36
45	4	2	1	1	1	4	9	15	34	37	56	27
00	8	0	3	1	2	2	9	21	31	35	41	43
r Total	35	5	11	7	3	12	34	75	105	122	169	146

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	44	50	57	62	50	60	26	27	26	22	33	23
30	31	40	43	41	41	44	32	26	21	28	22	25
45	53	31	54	57	74	40	40	31	27	25	15	51
00	49	43	48	34	49	36	31	25	22	18	21	14
r Total	177	164	202	194	214	180	129	109	96	93	91	113

idnight Total : 2486
M peak hour begins : 10:15 AM peak volume : 173 Peak hour factor : 0.77
M peak hour begins : 16:30 PM peak volume : 227 Peak hour factor : 0.77

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

****

)ata File : D1217003.PRN
:tation : 000000000312
:dentification : 000011169903 Interval : 15 minutes
:tart date : Dec 17, 99 Start time : 00:00
:top date : Dec 17, 99 Stop time : 24:00
:ity/Town : ft. meyers beach County : lee
.ocation : on san carlos blvd.

****

)ec 17 Northbound Volume for Lane 1

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	11	20	9	7	12	31	97	128	142	138	160
30	17	15	11	11	6	15	52	95	122	140	161	149
45	17	12	12	5	7	22	73	110	129	133	170	143
00	14	15	9	6	9	25	80	109	142	158	162	153
Hr Total	70	53	52	31	29	74	236	411	521	573	631	605

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	152	141	146	164	173	163	141	120	89	77	61	54
30	154	140	147	176	151	159	126	116	78	71	84	39
45	145	133	139	199	199	152	129	89	86	71	91	77
00	134	156	122	172	147	164	114	69	68	72	63	64
Hr Total	585	570	554	711	670	638	510	394	321	291	299	234

Midnight Total : 9063
AM peak hour begins : 10:15 AM peak volume : 653 Peak hour factor : 0.96
PM peak hour begins : 15:15 PM peak volume : 720 Peak hour factor : 0.90

****

)ec 17 Southbound Volume for Lane 2

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	22	15	9	6	2	11	38	143	90	128	108	143
30	19	10	6	5	6	9	63	172	124	56	126	138
45	16	9	6	5	10	18	95	193	118	135	145	134
00	22	13	3	3	7	18	166	173	149	141	128	123
Hr Total	79	47	24	19	25	56	362	681	481	460	507	538

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	157	171	121	179	148	138	156	111	121	85	75	77
30	142	136	140	170	161	163	139	130	120	99	99	62
45	132	129	153	178	172	147	139	142	120	89	88	56
00	158	148	186	170	160	157	114	109	94	72	90	33
r Total	589	584	600	697	641	605	548	492	455	345	352	228

Midnight Total : 9415
M peak hour begins : 07:00 AM peak volume : 681 Peak hour factor : 0.88
M peak hour begins : 14:45 PM peak volume : 713 Peak hour factor : 0.96

****

ata File : D1217003.PRN
tation : 000000000312
dentification : 000011169903 Interval : 15 minutes
tart date : Dec 17, 99 Start time : 00:00
top date : Dec 17, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on san carlos blvd.

ec 17 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	44	26	29	15	9	23	69	240	218	270	246	303
30	36	25	17	16	12	24	115	267	246	196	287	287
45	33	21	18	10	17	40	168	303	247	268	315	277
00	36	28	12	9	16	43	246	282	291	299	290	276
r Total	149	100	76	50	54	130	598	1092	1002	1033	1138	1143

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	309	312	267	343	321	301	297	231	210	162	136	131
30	296	276	287	346	312	322	265	246	198	170	183	101
45	277	262	292	377	371	299	268	231	206	160	179	133
00	292	304	308	342	307	321	228	178	162	144	153	97
r Total	1174	1154	1154	1408	1311	1243	1058	886	776	636	651	462

idnight Total : 18478
M peak hour begins : 10:15 AM peak volume : 1195 Peak hour factor : 0.95
M peak hour begins : 15:00 PM peak volume : 1408 Peak hour factor : 0.93

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1217001.PRN
Station : 000000000310
Identification : 000012169901 Interval : 15 minutes
Start date : Dec 17, 99 Start time : 00:00
Stop date : Dec 17, 99 Stop time : 24:00
City/Town : ft. myers beach County : lee
Location : ~~estero blvd~~. 5TH ST.

Dec 17 Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	0	4	2	1	1	2	13	12	13	21	24
30	10	1	2	2	0	1	3	6	10	31	24	25
45	3	5	7	2	1	2	8	8	16	23	17	18
00	6	0	3	0	1	6	8	17	22	28	26	20
Hr Total	24	6	16	6	3	10	21	44	60	95	88	87

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	19	39	35	44	17	28	20	32	23	32	28	22
30	26	31	21	33	25	22	27	21	30	31	35	25
45	39	27	32	23	35	24	30	27	27	27	25	34
00	31	30	31	29	45	24	26	43	34	28	26	12
Hr Total	115	127	119	129	122	98	103	123	114	118	114	93

Midnight Total : 1835
AM peak hour begins : 09:15 AM peak volume : 103 Peak hour factor : 0.83
PM peak hour begins : 12:30 PM peak volume : 140 Peak hour factor : 0.90

Dec 17 Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	12	9	5	4	0	2	7	23	34	66	51	44
30	7	5	4	1	1	1	7	20	37	49	55	63
45	3	3	3	1	1	5	16	26	45	66	77	77
00	7	5	6	1	2	9	22	32	62	61	61	57
Hr Total	29	22	18	7	4	17	52	101	178	242	244	241

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	62	59	64	68	73	96	65	64	63	56	30	41
30	78	60	61	48	87	74	69	58	46	54	35	28
45	72	73	74	62	65	89	56	74	54	46	46	46
00	81	73	71	52	69	61	63	55	39	65	29	18
Hr Total	293	265	270	230	294	320	253	251	202	221	140	133

Midnight Total : 4027
AM peak hour begins : 11:30 AM peak volume : 274 Peak hour factor : 0.88
PM peak hour begins : 16:45 PM peak volume : 328 Peak hour factor : 0.85

ata File : D1217001.PRN
tation : 000000000310
dentification : 000012169901 Interval : 15 minutes
tart date : Dec 17, 99 Start time : 00:00
top date : Dec 17, 99 Stop time : 24:00
ity/Town : ft. myers beach County : lee
pcation : ~~estero blvd~~. 5TH ST.

ec 17 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	9	9	6	1	3	9	36	46	79	72	68
30	17	6	6	3	1	2	10	26	47	80	79	88
45	6	8	10	3	2	7	24	34	61	89	94	95
00	13	5	9	1	3	15	30	49	84	89	87	77
r Total	53	28	34	13	7	27	73	145	238	337	332	328

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	81	98	99	112	90	124	85	96	86	88	58	63
30	104	91	82	81	112	96	96	79	76	85	70	53
45	111	100	106	85	100	113	86	101	81	73	71	80
00	112	103	102	81	114	85	89	98	73	93	55	30
r Total	408	392	389	359	416	418	356	374	316	339	254	226

idnight Total : 5862
M peak hour begins : 11:30 AM peak volume : 357 Peak hour factor : 0.80
M peak hour begins : 16:15 PM peak volume : 450 Peak hour factor : 0.91

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

****

Data File : D1217004.PRN
Station : 000000000313
Identification : 000011169904 Interval : 15 minutes
Start date : Dec 17, 99 Start time : 00:00
Stop date : Dec 17, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on estero blvd.

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Dec 17 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	5	3	4	2	0	2	6	17	12	23	18	16
30	5	5	3	2	1	3	5	6	8	21	28	15
45	2	0	4	2	2	2	8	5	16	20	22	23
00	7	4	4	1	2	4	13	12	13	17	22	19
Hr Total	19	12	15	7	5	11	32	40	49	81	90	73

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	15	16	24	17	23	25	21	25	28	23	21	23
30	96	17	16	11	28	28	24	26	19	33	20	22
45	78	22	23	27	20	22	20	32	19	34	28	31
00	28	25	25	25	20	16	23	26	26	37	18	14
Hr Total	217	80	88	80	91	91	88	109	92	127	87	90

Midnight Total : 1674
AM peak hour begins : 11:30 AM peak volume : 153 Peak hour factor : 0.40
PM peak hour begins : 12:15 PM peak volume : 218 Peak hour factor : 0.57

****

Dec 17 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	25	15	13	8	2	9	21 ~~42~~	90	180 ~~125~~	249 ~~206~~	411	139	166
30	29	11	9	6	6	11	45 90	91 ~~181~~	~~155~~	~~309~~	158 ~~316~~	152	174
45	19	14	12	7	11	20	73 ~~145~~	142 ~~284~~	162 ~~324~~	83 ~~166~~	177	159
00	28	13	3	4	7	24	117 ~~233~~	186 ~~371~~	~~233~~ ~~466~~	87 ~~173~~	157	153
Hr Total	101	53	37	25	26	64	~~510~~ 256	~~1016~~ 509	1348 675	1066 534	625	652

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	181	216	164	232	172	183	183	150	153	126	104	101
30	178	170	168	222	189	192	173	147	157	132	139	87
45	183	166	194	206	204	178	171	178	155	125	119	95
00	192	185	220	209	202	187	145	153	128	102	117	45
Hr Total	734	737	746	869	767	740	672	628	593	485	479	328

Midnight Total : ~~13301~~ 11,335
AM peak hour begins : 08:30 AM peak volume : 1517 Peak hour factor : 0.81
PM peak hour begins : 14:45 PM peak volume : 880 Peak hour factor : 0.95

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Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

ata File : D1217004.PRN
cation : 000000000313
dentification : 000011169904 Interval : 15 minutes
tart date : Dec 17, 99 Start time : 00:00
top date : Dec 17, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on estero blvd.

ec 17 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	30	18	17	10	2	11	48	197	261	434	157	182
30	34	16	12	8	7	14	95	187	317	337	180	189
45	21	14	16	9	13	22	153	289	340	186	199	182
00	35	17	7	5	9	28	246	383	479	190	179	172
r Total	120	65	52	32	31	75	542	1056	1397	1147	715	725

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	196	232	188	249	195	208	204	175	181	149	125	124
30	274	187	184	233	217	220	197	173	176	165	159	109
45	261	188	217	233	224	200	191	210	174	159	147	126
00	220	210	245	234	222	203	168	179	154	139	135	59
r Total	951	817	834	949	858	831	760	737	685	612	566	418

idnight Total : 14975
M peak hour begins : 08:30 AM peak volume : 1590 Peak hour factor : 0.83
M peak hour begins : 12:15 PM peak volume : 987 Peak hour factor : 0.90

COUNTER 1

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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Data File : D1218002.PRN
Station : 000000000311
Identification : 000011169902
Start date : Dec 18, 99
Stop date : Dec 18, 99
City/Town : ft. meyers beach
Location : on 5th ~~street~~ AVE

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

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Dec 18 Westbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	12	8	5	1	0	1	6	10	17	35	44	37
30	11	6	3	1	2	4	8	14	15	37	41	48
45	6	2	6	2	0	5	8	17	29	36	37	33
00	6	2	3	2	1	3	8	12	26	41	36	36
Hr Total	35	18	17	6	3	13	30	53	87	149	158	154

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	37	36	50	35	39	30	33	15	28	15	18	12
30	26	44	36	34	29	20	24	27	23	18	20	13
45	36	33	39	29	63	30	21	25	9	14	15	57
00	28	29	40	22	24	31	28	21	21	24	14	23
Hr Total	127	142	165	120	155	111	106	88	81	71	67	105

Midnight Total : 2061
AM peak hour begins : 09:45 AM peak volume : 163 Peak hour factor : 0.93
PM peak hour begins : 14:00 PM peak volume : 165 Peak hour factor : 0.82

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Dec 18 Eastbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	3	2	1	1	0	0	1	2	0	3	2
30	2	0	5	0	0	0	0	0	1	4	4	1
45	2	0	2	0	0	0	0	0	6	2	9	3
00	1	0	0	0	0	0	1	0	1	7	3	4
Hr Total	8	3	9	1	1	0	1	1	10	13	19	10

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	4	1	4	1	2	3	3	4	6	5	2	5
30	2	2	3	5	3	3	8	1	1	2	0	2
45	0	4	4	4	4	3	3	6	2	2	5	1
00	4	3	1	2	4	9	3	5	2	0	5	0
Hr Total	10	10	12	12	13	18	17	16	11	9	12	8

Midnight Total : 224
AM peak hour begins : 09:45 AM peak volume : 23 Peak hour factor : 0.64
PM peak hour begins : 17:30 PM peak volume : 23 Peak hour factor : 0.64

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ata File : D1218002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 18, 99 Start time : 00:00
top date : Dec 18, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

ec 18 Total Volume for All Lanes

hd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	15	11	7	2	1	1	6	11	19	35	47	39
30	13	6	8	1	2	4	8	14	16	41	45	49
45	8	2	8	2	0	5	8	17	35	38	46	36
00	7	2	3	2	1	3	9	12	27	48	39	40
r Total	43	21	26	7	4	13	31	54	97	162	177	164

hd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	41	37	54	36	41	33	36	19	34	20	20	17
30	28	46	39	39	32	23	32	28	24	20	20	15
45	36	37	43	33	67	33	24	31	11	16	20	58
00	32	32	41	24	28	40	31	26	23	24	19	23
r Total	137	152	177	132	168	129	123	104	92	80	79	113

idnight Total : 2285
M peak hour begins : 09:45 AM peak volume : 186 Peak hour factor : 0.97
M peak hour begins : 14:00 PM peak volume : 177 Peak hour factor : 0.82

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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)ata File : D1218003.PRN
;tation : 000000000312
:dentification : 000011169903 Interval : 15 minutes
;tart date : Dec 18, 99 Start time : 00:00
;top date : Dec 18, 99 Stop time : 24:00
:ity/Town : ft. meyers beach County : lee
;ocation : on san carlos blvd.

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)ec 18 Northbound Volume for Lane 1

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	47	47	36	14	15	12	33	56	103	140	166	164
30	34	26	22	13	9	11	22	49	90	134	163	165
45	36	28	25	10	7	16	30	69	89	130	160	175
00	35	24	24	2	10	16	39	71	119	156	153	133
Hr Total	152	125	107	39	41	55	124	245	401	560	642	637

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	171	145	131	115	122	118	107	86	61	71	76	63
30	139	115	126	138	119	119	93	89	62	42	85	57
45	142	127	118	131	119	99	93	87	68	72	52	61
00	142	130	117	138	118	98	91	71	73	74	71	55
Hr Total	594	517	492	522	478	434	384	333	264	259	284	236

Midnight Total : 7925
AM peak hour begins : 10:45 AM peak volume : 657 Peak hour factor : 0.94
PM peak hour begins : 12:00 PM peak volume : 594 Peak hour factor : 0.87

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)ec 18 Southbound Volume for Lane 2

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	48	24	21	7	15	9	23	47	61	88	107	109
30	46	23	13	11	4	5	28	68	97	86	107	137
45	40	23	19	2	5	10	41	84	87	90	130	122
00	24	22	15	7	9	13	68	87	81	120	116	138
Hr Total	158	92	68	27	33	37	160	286	326	384	460	506

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	161	157	138	138	123	115	115	88	80	87	98	79
30	154	136	148	140	120	132	115	99	88	91	77	62
45	129	136	127	141	134	113	105	90	93	82	71	82
00	143	164	161	141	116	108	93	93	84	76	79	39
Hr Total	587	593	574	560	493	468	428	370	345	336	325	262

Midnight Total : 7878
AM peak hour begins : 11:30 AM peak volume : 575 Peak hour factor : 0.89
PM peak hour begins : 13:00 PM peak volume : 593 Peak hour factor : 0.90

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ata File : D1218003.PRN
tation : 000000000312
dentification : 000011169903 Interval : 15 minutes
tart date : Dec 18, 99 Start time : 00:00
top date : Dec 18, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on san carlos blvd.

ec 18 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	95	71	57	21	30	21	56	103	164	228	273	273
30	80	49	35	24	13	16	50	117	187	220	270	302
45	76	51	44	12	12	26	71	153	176	220	290	297
00	59	46	39	9	19	29	107	158	200	276	269	271
r Total	310	217	175	66	74	92	284	531	727	944	1102	1143

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	332	302	269	253	245	233	222	174	141	158	174	142
30	293	251	274	278	239	251	208	188	150	133	162	119
45	271	263	245	272	253	212	198	177	161	154	123	143
00	285	294	278	279	234	206	184	164	157	150	150	94
r Total	1181	1110	1066	1082	971	902	812	703	609	595	609	498

idnight Total : 15803
M peak hour begins : 11:15 AM peak volume : 1202 Peak hour factor : 0.91
M peak hour begins : 12:00 PM peak volume : 1181 Peak hour factor : 0.89

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1218001.PRN
Station : 000000000310
Identification : 000012169901
Start date : Dec 18, 99
Stop date : Dec 18, 99
City/Town : ft. myers beach
Location : ~~estero blvd.~~ 5TH ST.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

Dec 18 — Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	16	7	5	3	3	1	5	10	9	17	26	36
30	7	10	3	1	2	1	5	10	14	24	22	30
45	6	6	6	2	1	3	2	10	10	16	27	18
00	10	3	4	1	0	2	7	8	30	28	20	28
Hr Total	39	26	18	7	6	7	19	38	63	85	95	112

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	32	27	40	24	25	17	20	18	20	18	17	24
30	26	36	30	24	17	22	22	19	37	26	23	24
45	30	28	30	33	32	15	18	24	21	14	32	44
00	25	40	37	27	19	21	17	17	27	23	10	24
Hr Total	113	131	137	108	93	75	77	78	105	81	82	116

Midnight Total : 1711
AM peak hour begins : 10:30 AM peak volume : 113 Peak hour factor : 0.78
PM peak hour begins : 13:15 PM peak volume : 144 Peak hour factor : 0.90

Dec 18 — Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	26	9	7	5	3	0	5	16	33	59	59	45
30	21	10	7	2	10	2	9	11	28	42	70	42
45	20	3	6	3	1	4	11	21	47	45	80	63
00	15	19	2	3	1	8	10	27	53	52	55	58
Hr Total	82	41	22	13	15	14	35	75	161	198	264	208

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	71	52	70	53	65	60	45	54	46	46	36	47
30	70	49	70	53	59	67	50	44	52	55	58	38
45	68	64	58	51	61	62	60	49	33	38	46	42
00	77	73	52	60	68	64	45	39	49	33	43	36
Hr Total	286	238	250	217	253	253	200	186	180	172	183	163

Midnight Total : 3709
AM peak hour begins : 10:00 AM peak volume : 264 Peak hour factor : 0.82
PM peak hour begins : 12:00 PM peak volume : 286 Peak hour factor : 0.93

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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ata File : D1218001.PRN
tation : 000000000310
dentification : 000012169901 Interval : 15 minutes
tart date : Dec 18, 99 Start time : 00:00
top date : Dec 18, 99 Stop time : 24:00
ity/Town : ft. myers beach County : lee
ocation : ~~estero blvd.~~ 5TH ST.

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ec 18 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	42	16	12	8	6	1	10	26	42	76	85	81
30	28	20	10	3	12	3	14	21	42	66	92	72
45	26	9	12	5	2	7	13	31	57	61	107	81
00	25	22	6	4	1	10	17	35	83	80	75	86
r Total	121	67	40	20	21	21	54	113	224	283	359	320

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	103	79	110	77	90	77	65	72	66	64	53	71
30	96	85	100	77	76	89	72	63	89	81	81	62
45	98	92	88	84	93	77	78	73	54	52	78	86
00	102	113	89	87	87	85	62	56	76	56	53	60
r Total	399	369	387	325	346	328	277	264	285	253	265	279

idnight Total : 5420
M peak hour begins : 11:30 AM peak volume : 366 Peak hour factor : 0.89
M peak hour begins : 13:30 PM peak volume : 415 Peak hour factor : 0.92

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COUNTER D

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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Data File : D1218004.PRN
Station : 000000000313
Identification : 000011169904 Interval : 15 minutes
Start date : Dec 18, 99 Start time : 00:00
Stop date : Dec 18, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on estero blvd.

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Dec 18 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	5	1	5	3	0	1	11	9	17	20	21
30	16	10	4	2	6	2	3	3	12	9	23	18
45	8	1	4	1	0	3	4	8	16	12	23	21
00	8	0	2	1	1	2	0	5	19	14	18	17
Hr Total	49	16	11	9	10	7	8	27	56	52	84	77

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	26	21	20	13	18	17	16	16	20	19	13	20
30	22	24	26	17	14	20	24	20	21	18	34	26
45	17	18	19	22	12	12	13	12	17	18	18	25
00	22	29	26	25	24	16	16	18	14	15	19	15
Hr Total	87	92	91	77	68	65	69	66	72	70	84	86

Midnight Total : 1333
AM peak hour begins : 11:30 AM peak volume : 86 Peak hour factor : 0.83
PM peak hour begins : 13:45 PM peak volume : 94 Peak hour factor : 0.81

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Dec 18 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	66	29	26	9	18	10	27	58	71	114	137	150
30	54	33	16	12	6	6	36	81	111	116	134	163
45	45	29	26	4	6	13	44	90	100	110	160	143
00	36	29	17	8	9	16	77	95	110	147	141	175
Hr Total	201	120	85	33	39	45	184	324	392	487	572	631

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	193	181	197	166	155	137	149	113	104	112	119	110
30	184	174	190	184	149	158	147	121	130	120	104	93
45	162	172	162	179	173	136	135	121	119	103	105	128
00	167	208	204	177	147	135	114	114	111	104	93	65
Hr Total	706	735	753	706	624	566	545	469	464	439	421	396

Midnight Total : 9937
AM peak hour begins : 11:30 AM peak volume : 695 Peak hour factor : 0.90
PM peak hour begins : 13:30 PM peak volume : 767 Peak hour factor : 0.92

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ta File : D1218004.PRN
ation : 000000000313
dentification : 000011169904
art date : Dec 18, 99
op date : Dec 18, 99
ty/Town : ft. meyers beach
cation : on estero blvd.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

ec 18 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	83	34	27	14	21	10	28	69	80	131	157	171
30	70	43	20	14	12	8	39	84	123	125	157	181
45	53	30	30	5	6	16	48	98	116	122	183	164
00	44	29	19	9	10	18	77	100	129	161	159	192
r Total	250	136	96	42	49	52	192	351	448	539	656	708

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	219	202	217	179	173	154	165	129	124	131	132	130
30	206	198	216	201	163	178	171	141	151	138	138	119
45	179	190	181	201	185	148	148	133	136	121	123	153
00	189	237	230	202	171	151	130	132	125	119	112	80
r Total	793	827	844	783	692	631	614	535	536	509	505	482

idnight Total : 11270
M peak hour begins : 11:30 AM peak volume : 781 Peak hour factor : 0.89
M peak hour begins : 13:30 PM peak volume : 860 Peak hour factor : 0.91

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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Data File : D1219002.PRN
Station : 000000000311
Identification : 000011169902
Start date : Dec 19, 99
Stop date : Dec 19, 99
City/Town : ft. meyers beach
Location : on 5th ~~street~~ AVE

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

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Dec 19 Westbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	11	10	9	4	1	2	4	4	9	23	32	33
30	2	7	4	3	0	0	4	7	16	28	35	29
45	4	2	6	2	0	0	5	9	15	37	26	35
00	5	5	2	5	2	2	5	18	23	26	30	35
Hr Total	22	24	21	14	3	4	18	38	63	114	123	132

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	46	34	42	61	74	53	56	29	23	26	25	21
30	40	32	49	50	58	54	53	31	25	22	21	11
45	40	34	54	69	93	65	40	23	22	22	26	32
00	31	51	52	63	66	73	43	38	32	21	15	23
Hr Total	157	151	197	243	291	245	192	121	102	91	87	87

Midnight Total : 2540
AM peak hour begins : 11:30 AM peak volume : 156 Peak hour factor : 0.85
PM peak hour begins : 16:00 PM peak volume : 291 Peak hour factor : 0.78

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Dec 19 Eastbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	1	0	0	0	0	0	0	1	1	1	3
30	1	0	0	0	2	0	0	1	2	0	2	3
45	0	0	1	0	0	0	0	0	1	1	4	5
00	0	0	0	2	0	0	0	0	0	1	0	4
Hr Total	7	1	1	2	2	0	0	1	4	3	7	15

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	3	5	3	14	9	2	3	3	3	3	3	3
30	2	4	2	3	8	5	2	2	1	3	2	3
45	4	6	3	9	2	10	9	4	4	4	0	0
00	8	8	5	5	4	5	7	1	2	5	1	0
Hr Total	17	23	13	31	23	22	21	10	10	15	6	6

Midnight Total : 240
AM peak hour begins : 11:00 AM peak volume : 15 Peak hour factor : 0.75
PM peak hour begins : 14:45 PM peak volume : 31 Peak hour factor : 0.55

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ata File : D1219002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 19, 99 Start time : 00:00
top date : Dec 19, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

ec 19 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	17	11	9	4	1	2	4	4	10	24	33	36
30	3	7	4	3	2	0	4	8	18	28	37	32
45	4	2	7	2	0	0	5	9	16	38	30	40
00	5	5	2	7	2	2	5	18	23	27	30	39
r Total	29	25	22	16	5	4	18	39	67	117	130	147

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	49	39	45	75	83	55	59	32	26	29	28	24
30	42	36	51	53	66	59	55	33	26	25	23	14
45	44	40	57	78	95	75	49	27	26	26	26	32
00	39	59	57	68	70	78	50	39	34	26	16	23
r Total	174	174	210	274	314	267	213	131	112	106	93	93

idnight Total : 2780
M peak hour begins : 11:30 AM peak volume : 170 Peak hour factor : 0.87
M peak hour begins : 16:00 PM peak volume : 314 Peak hour factor : 0.83

COUNTER 2

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1219003.PRN
Station : 000000000312
Identification : 000011169903
Start date : Dec 19, 99
Stop date : Dec 19, 99
City/Town : ft. meyers beach
Location : on san carlos blvd.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

Dec 19 — Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	50	40	20	12	8	13	18	28	66	99	111	160
30	48	24	24	13	6	11	18	33	75	115	132	122
45	37	18	11	8	5	9	18	40	63	106	117	147
00	20	27	13	10	8	8	26	40	101	101	138	163
Hr Total	155	109	68	43	27	41	80	141	305	421	498	592

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	152	130	137	156	168	163	135	122	66	65	80	44
30	138	127	110	152	169	156	161	93	68	63	62	52
45	117	121	131	144	155	158	141	94	71	61	46	34
00	135	136	147	152	147	172	109	75	59	77	46	33
Hr Total	542	514	525	604	639	649	546	384	264	266	234	163

Midnight Total : 7810
AM peak hour begins : 11:30 AM peak volume : 600 Peak hour factor : 0.92
PM peak hour begins : 17:00 PM peak volume : 649 Peak hour factor : 0.94

Dec 19 — Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	55	35	17	11	7	7	14	29	66	131	125	148
30	38	21	25	4	8	6	12	55	51	97	135	154
45	45	21	13	6	5	14	22	78	70	100	126	136
00	33	17	12	11	8	13	30	71	100	88	146	148
Hr Total	171	94	67	32	28	40	78	233	287	416	532	586

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	145	197	151	171	126	156	121	100	83	87	72	63
30	156	149	154	129	155	164	101	99	100	88	54	74
45	179	154	161	138	151	164	92	93	86	82	49	56
00	202	154	166	163	144	140	97	85	93	88	55	54
Hr Total	682	654	632	601	576	624	411	377	362	345	230	247

Midnight Total : 8305
AM peak hour begins : 11:00 AM peak volume : 586 Peak hour factor : 0.95
PM peak hour begins : 12:15 PM peak volume : 734 Peak hour factor : 0.91

ata File : D1219003.PRN
tation : 000000000312
dentification : 000011169903 Interval : 15 minutes
tart date : Dec 19, 99 Start time : 00:00
top date : Dec 19, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on san carlos blvd.

ec 19 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	105	75	37	23	15	20	32	57	132	230	236	308
30	86	45	49	17	14	17	30	88	126	212	267	276
45	82	39	24	14	10	23	40	118	133	206	243	283
00	53	44	25	21	16	21	56	111	201	189	284	311
r Total	326	203	135	75	55	81	158	374	592	837	1030	1178

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	297	327	288	327	294	319	256	222	149	152	152	107
30	294	276	264	281	324	320	262	192	168	151	116	126
45	296	275	292	282	306	322	233	187	157	143	95	90
00	337	290	313	315	291	312	206	160	152	165	101	87
r Total	1224	1168	1157	1205	1215	1273	957	761	626	611	464	410

idnight Total : 16115
M peak hour begins : 11:30 AM peak volume : 1185 Peak hour factor : 0.95
M peak hour begins : 17:00 PM peak volume : 1273 Peak hour factor : 0.99

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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)ata File : D1219001.PRN
;tation : 000000000310
:dentification : 000012169901 Interval : 15 minutes
;tart date : Dec 19, 99 Start time : 00:00
;top date : Dec 19, 99 Stop time : 24:00
:ity/Town : ft. myers beach County : lee
;ocation : ~~estero blvd~~. 5TH ST.

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)ec 19 Eastbound Volume for Lane 1

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	10	6	6	0	2	0	5	3	10	21	22	31
30	14	10	5	2	1	3	3	7	11	23	22	23
45	5	6	4	5	4	2	2	14	14	19	20	28
00	5	6	2	0	2	4	3	22	14	28	23	22
Hr Total	34	28	17	7	9	9	13	46	49	91	87	104

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	34	21	30	39	42	34	40	30	35	30	23	28
30	16	40	43	29	61	46	49	36	35	26	24	15
45	32	29	46	44	45	42	39	33	28	29	25	24
00	25	39	44	48	52	62	32	23	33	19	22	19
Hr Total	107	129	163	160	200	184	160	122	131	104	94	86

Midnight Total : 2134
AM peak hour begins : 11:15 AM peak volume : 107 Peak hour factor : 0.79
PM peak hour begins : 16:00 PM peak volume : 200 Peak hour factor : 0.82

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)ec 19 Westbound Volume for Lane 2

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	24	12	9	6	5	1	1	14	37	54	55	80
30	19	11	12	1	2	5	11	14	24	52	91	69
45	12	4	5	3	1	4	5	14	39	59	83	107
00	12	4	1	2	2	8	14	23	58	54	67	106
:r Total	67	31	27	12	10	18	31	65	158	219	296	362

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	78	91	72	93	93	122	64	61	53	69	35	37
30	66	103	104	91	97	106	58	41	55	51	28	21
45	118	112	148	87	89	110	65	58	73	55	35	27
00	94	99	107	98	97	102	68	63	70	37	36	18
r Total	356	405	431	369	376	440	255	223	251	212	134	103

idnight Total : 4851
M peak hour begins : 11:00 AM peak volume : 362 Peak hour factor : 0.85
M peak hour begins : 14:15 PM peak volume : 452 Peak hour factor : 0.76

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Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

****

ata File : D1219001.PRN
tation : 000000000310
dentification : 000012169901
tart date : Dec 19, 99
top date : Dec 19, 99
ity/Town : ft. myers beach
pcation : ~~estero blvd~~. 5TH ST.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

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ec 19 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	34	18	15	6	7	1	6	17	47	75	77	111
30	33	21	17	3	3	8	14	21	35	75	113	92
45	17	10	9	8	5	6	7	28	53	78	103	135
00	17	10	3	2	4	12	17	45	72	82	90	128
r Total	101	59	44	19	19	27	44	111	207	310	383	466

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	112	112	102	132	135	156	104	91	88	99	58	65
30	82	143	147	120	158	152	107	77	90	77	52	36
45	150	141	194	131	134	152	104	91	101	84	60	51
00	119	138	151	146	149	164	100	86	103	56	58	37
r Total	463	534	594	529	576	624	415	345	382	316	228	189

idnight Total : 6985
M peak hour begins : 11:15 AM peak volume : 467 Peak hour factor : 0.86
M peak hour begins : 14:15 PM peak volume : 624 Peak hour factor : 0.80

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Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1219004.PRN
Station : 000000000313
Identification : 000011169904 Interval : 15 minutes
Start date : Dec 19, 99 Start time : 00:00
Stop date : Dec 19, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on estero blvd.

Dec 19 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	12	6	7	4	3	1	1	2	15	13	12	21
30	14	7	10	0	1	0	2	3	3	11	27	25
45	10	2	5	1	1	3	6	1	12	17	20	20
00	3	4	2	0	2	2	4	8	24	20	24	30
Hr Total	39	19	24	5	7	6	13	14	54	61	83	96

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	21	29	24	35	34	39	26	32	19	40	18	20
30	16	20	32	29	35	27	19	17	21	25	14	15
45	30	36	22	34	32	44	26	25	45	21	16	16
00	23	29	29	34	30	32	27	22	21	21	25	11
Hr Total	90	114	107	132	131	142	98	96	106	107	73	62

Midnight Total : 1679
AM peak hour begins : 11:00 AM peak volume : 96 Peak hour factor : 0.80
PM peak hour begins : 17:00 PM peak volume : 142 Peak hour factor : 0.81

Dec 19 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	65	42	20	11	9	7	18	32	77	152	154	170
30	54	31	32	6	9	8	15	66	62	124	164	186
45	54	28	17	11	10	16	24	95	89	121	152	166
00	37	22	14	11	10	18	35	93	117	120	167	175
Hr Total	210	123	83	39	38	49	92	286	345	517	637	697

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	177	218	186	203	175	199	163	136	120	127	100	93
30	158	193	187	168	217	205	153	137	136	120	79	88
45	210	195	210	185	203	214	129	136	119	115	77	84
00	216	200	223	197	194	205	128	110	136	105	78	74
Hr Total	761	806	806	753	789	823	573	519	511	467	334	339

Midnight Total : 10597
AM peak hour begins : 11:15 AM peak volume : 704 Peak hour factor : 0.95
PM peak hour begins : 12:30 PM peak volume : 837 Peak hour factor : 0.96

ata File : D1219004.PRN
tation : 000000000313
dentification : 000011169904
tart date : Dec 19, 99
top date : Dec 19, 99
ity/Town : ft. meyers beach
ocation : on estero blvd.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

ec 19 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	77	48	27	15	12	8	19	34	92	165	166	191
30	68	38	42	6	10	8	17	69	65	135	191	211
45	64	30	22	12	11	19	30	96	101	138	172	186
00	40	26	16	11	12	20	39	101	141	140	191	205
r Total	249	142	107	44	45	55	105	300	399	578	720	793

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	198	247	210	238	209	238	189	168	139	167	118	113
30	174	213	219	197	252	232	172	154	157	145	93	103
45	240	231	232	219	235	258	155	161	164	136	93	100
00	239	229	252	231	224	237	155	132	157	126	103	85
r Total	851	920	913	885	920	965	671	615	617	574	407	401

idnight Total : 12276
M peak hour begins : 11:15 AM peak volume : 800 Peak hour factor : 0.95
M peak hour begins : 17:00 PM peak volume : 965 Peak hour factor : 0.94

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1220002.PRN
Station : 000000000311
Identification : 000011169902
Start date : Dec 20, 99
Stop date : Dec 20, 99
City/Town : ft. meyers beach
Location : on 5th ~~street~~ AVE

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

Dec 20 Westbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	11	4	4	2	1	2	3	13	25	31	55	32
30	3	4	2	1	0	1	9	14	35	35	31	47
45	5	9	0	0	1	5	6	27	30	34	40	38
00	3	9	2	0	1	4	6	15	22	41	31	39
Hr Total	22	26	8	3	3	12	24	69	112	141	157	156

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	30	59	47	74	64	88	58	32	18	19	15	12
30	55	48	51	58	65	50	65	33	30	21	17	13
45	40	42	51	68	58	57	49	28	25	18	11	36
00	36	44	74	64	46	62	35	29	14	18	20	17
Hr Total	161	193	223	264	233	257	207	122	87	76	63	78

Midnight Total : 2697
AM peak hour begins : 09:45 AM peak volume : 167 Peak hour factor : 0.76
PM peak hour begins : 14:45 PM peak volume : 274 Peak hour factor : 0.93

Dec 20 Eastbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	2	0	0	0	0	0	1	0	3	0	10	4
30	1	0	0	0	0	0	0	0	2	3	7	2
45	1	0	1	0	0	0	1	0	1	2	1	6
00	0	0	0	0	0	0	0	0	1	6	4	7
Hr Total	4	0	1	0	0	0	2	0	7	11	22	19

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	11	5	7	1	6	9	4	3	5	3	3	3
30	3	1	6	1	0	10	13	5	10	2	5	0
45	6	3	8	2	7	8	1	1	0	1	1	2
00	10	4	4	7	3	5	5	4	4	5	1	0
Hr Total	30	13	25	11	16	32	23	13	19	11	10	5

Midnight Total : 274
AM peak hour begins : 11:30 AM peak volume : 27 Peak hour factor : 0.61
PM peak hour begins : 17:00 PM peak volume : 32 Peak hour factor : 0.80

ata File : D1220002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 20, 99 Start time : 00:00
top date : Dec 20, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

ec 20 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	13	4	4	2	1	2	4	13	28	31	65	36
30	4	4	2	1	0	1	9	14	37	38	38	49
45	6	9	1	0	1	5	7	27	31	36	41	44
00	3	9	2	0	1	4	6	15	23	47	35	46
Total	26	26	9	3	3	12	26	69	119	152	179	175

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	41	64	54	75	70	97	62	35	23	22	18	15
30	58	49	57	59	65	60	78	38	40	23	22	13
45	46	45	59	70	65	65	50	29	25	19	12	38
00	46	48	78	71	49	67	40	33	18	23	21	17
Total	191	206	248	275	249	289	230	135	106	87	73	83

idnight Total : 2971
l peak hour begins : 09:45 AM peak volume : 191 Peak hour factor : 0.73
M peak hour begins : 17:00 PM peak volume : 289 Peak hour factor : 0.74

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1220003.PRN
Station : 000000000312
Identification : 000011169903 Interval : 15 minutes
Start date : Dec 20, 99 Start time : 00:00
Stop date : Dec 20, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on san carlos blvd.

Dec 20 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	20	18	16	6	6	13	32	95	121	143	161	165
30	23	24	16	8	5	14	44	99	127	137	158	156
45	17	20	14	5	9	17	53	118	148	160	162	153
00	19	16	18	3	13	17	56	110	148	167	171	139
Hr Total	79	78	64	22	33	61	185	422	544	607	652	613

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	131	147	154	175	183	199	183	108	76	54	88	39
30	172	154	166	200	191	179	167	110	64	69	44	41
45	154	134	164	203	172	176	133	71	71	56	40	38
00	177	159	169	185	177	172	132	68	75	58	40	29
Hr Total	634	594	653	763	723	726	615	357	286	237	212	147

Midnight Total : 9307
AM peak hour begins : 10:15 AM peak volume : 656 Peak hour factor : 0.96
PM peak hour begins : 15:15 PM peak volume : 771 Peak hour factor : 0.95

Dec 20 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	39	11	9	9	4	9	37	99	135	128	133	149
30	19	16	14	7	4	10	59	88	131	153	184	188
45	27	18	8	3	11	15	86	131	144	150	177	186
00	20	16	4	7	8	21	104	109	174	172	162	232
Hr Total	105	61	35	26	27	55	286	427	584	603	656	755

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	172	217	147	163	136	145	141	95	96	101	74	36
30	165	203	161	147	176	156	146	94	74	76	48	39
45	191	176	158	149	149	157	117	120	94	90	63	51
00	180	194	151	156	155	133	122	112	122	68	46	44
Hr Total	708	790	617	615	616	591	526	421	386	335	231	170

Midnight Total : 9626
AM peak hour begins : 11:15 AM peak volume : 778 Peak hour factor : 0.84
PM peak hour begins : 12:30 PM peak volume : 791 Peak hour factor : 0.91

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

ata File : D1220003.PRN
tation : 000000000312
dentification : 000011169903
tart date : Dec 20, 99
top date : Dec 20, 99
ity/Town : ft. meyers beach
ocation : on san carlos blvd.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

ec 20 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	59	29	25	15	10	22	69	194	256	271	294	314
30	42	40	30	15	9	24	103	187	258	290	342	344
45	44	38	22	8	20	32	139	249	292	310	339	339
00	39	32	22	10	21	38	160	219	322	339	333	371
r Total	184	139	99	48	60	116	471	849	1128	1210	1308	1368

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	303	364	301	338	319	344	324	203	172	155	162	75
30	337	357	327	347	367	335	313	204	138	145	92	80
45	345	310	322	352	321	333	250	191	165	146	103	89
00	357	353	320	341	332	305	254	180	197	126	86	73
r Total	1342	1384	1270	1378	1339	1317	1141	778	672	572	443	317

idnight Total : 18933
M peak hour begins : 11:00 AM peak volume : 1368 Peak hour factor : 0.92
M peak hour begins : 12:30 PM peak volume : 1423 Peak hour factor : 0.98

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1220001.PRN
Station : 000000000310
Identification : 000012169901
Start date : Dec 20, 99
Stop date : Dec 20, 99
City/Town : ft. myers beach
Location : ~~estero blvd~~. 5TH ST.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

Dec 20 Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	15	5	4	2	1	2	1	16	12	17	36	21
30	6	7	3	0	0	1	5	13	23	28	30	29
45	8	7	3	1	0	3	1	3	22	23	30	34
00	2	4	0	0	0	3	6	13	23	25	29	43
Hr Total	31	23	10	3	1	9	13	45	80	93	125	127

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	31	41	53	43	52	40	36	35	29	36	36	14
30	42	43	29	49	38	37	30	32	33	17	20	15
45	33	50	40	38	39	33	38	40	35	32	13	24
00	34	38	43	34	34	53	19	31	16	20	10	9
Hr Total	140	172	165	164	163	163	123	138	113	105	79	62

Midnight Total : 2147
AM peak hour begins : 11:30 AM peak volume : 150 Peak hour factor : 0.87
PM peak hour begins : 13:15 PM peak volume : 184 Peak hour factor : 0.87

Dec 20 Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	18	10	7	3	0	2	8	24	43	66	89	103
30	13	8	3	2	0	2	11	11	41	57	101	125
45	11	0	2	4	3	2	16	41	46	62	111	98
00	6	3	2	1	6	6	25	35	64	70	101	105
Hr Total	48	21	14	10	9	12	60	111	194	255	402	431

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	103	112	70	87	60	121	59	77	62	57	28	23
30	106	100	88	68	78	100	79	79	56	53	43	33
45	93	102	97	68	87	84	77	64	56	41	30	16
00	116	84	70	73	81	92	83	64	44	37	33	17
Hr Total	418	398	325	296	306	397	298	284	218	188	134	89

Midnight Total : 4918
AM peak hour begins : 10:30 AM peak volume : 440 Peak hour factor : 0.88
PM peak hour begins : 12:45 PM peak volume : 430 Peak hour factor : 0.93

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

ata File : D1220001.PRN
tation : 000000000310
dentification : 000012169901
tart date : Dec 20, 99
top date : Dec 20, 99
ity/Town : ft. myers beach
ocation : ~~estero blvd~~. 5TH ST.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

ec 20 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	33	15	11	5	1	4	9	40	55	83	125	124
30	19	15	6	2	0	3	16	24	64	85	131	154
45	19	7	5	5	3	5	17	44	68	85	141	132
00	8	7	2	1	6	9	31	48	87	95	130	148
r Total	79	44	24	13	10	21	73	156	274	348	527	558

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	134	153	123	130	112	161	95	112	91	93	64	37
30	148	143	117	117	116	137	109	111	89	70	63	48
45	126	152	137	106	126	117	115	104	91	73	43	40
00	150	122	113	107	115	145	102	95	60	57	43	26
r Total	558	570	490	460	469	560	421	422	331	293	213	151

idnight Total : 7065
M peak hour begins : 11:15 AM peak volume : 568 Peak hour factor : 0.92
M peak hour begins : 12:45 PM peak volume : 598 Peak hour factor : 0.98

COUNTERD

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1220004.PRN
Station : 000000000313
Identification : 000011169904
Start date : Dec 20, 99
Stop date : Dec 20, 99
City/Town : ft. meyers beach
Location : on estero blvd.

Interval : 15 minutes
Start time : 00:00
Stop time : 24:00
County : lee

Dec 20 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	13	7	4	3	0	3	1	9	9	21	37	26
30	9	4	2	1	0	1	8	2	11	30	29	29
45	6	0	1	5	1	2	11	9	19	18	24	27
00	1	1	3	0	5	7	13	12	14	19	17	38
Hr Total	29	12	10	9	6	13	33	32	53	88	107	120

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	22	27	20	33	20	28	22	31	20	27	13	12
30	28	24	44	20	18	26	28	34	15	21	13	17
45	29	30	35	21	33	23	26	38	35	22	16	6
00	39	20	28	21	19	31	44	25	20	24	15	8
Hr Total	118	101	127	95	90	108	120	128	90	94	57	43

Midnight Total : 1683
AM peak hour begins : 11:00 AM peak volume : 120 Peak hour factor : 0.79
PM peak hour begins : 18:45 PM peak volume : 147 Peak hour factor : 0.84

Dec 20 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	54	16	10	7	5	10	39	113	149	153	175	173
30	26	24	16	7	4	11	63	100	151	181	205	223
45	27	24	11	4	11	19	85	136	168	172	201	228
00	22	19	5	7	9	23	110	124	196	200	196	257
Hr Total	129	83	42	25	29	63	297	473	664	706	777	881

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	210	237	227	241	206	228	189	145	132	154	115	52
30	214	250	234	214	243	214	203	137	128	98	70	52
45	242	227	228	212	201	226	172	168	134	127	82	74
00	207	230	231	204	207	204	167	161	147	98	54	54
Hr Total	873	944	920	871	857	872	731	611	541	477	321	232

Midnight Total : 12419
AM peak hour begins : 11:15 AM peak volume : 918 Peak hour factor : 0.89
PM peak hour begins : 13:00 PM peak volume : 944 Peak hour factor : 0.94

ata File : D1220004.PRN
tation : 000000000313
dentification : 000011169904 Interval : 15 minutes
tart date : Dec 20, 99 Start time : 00:00
top date : Dec 20, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on estero blvd.

ec 20 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	67	23	14	10	5	13	40	122	158	174	212	199
30	35	28	18	8	4	12	71	102	162	211	234	252
45	33	24	12	9	12	21	96	145	187	190	225	255
00	23	20	8	7	14	30	123	136	210	219	213	295
r Total	158	95	52	34	35	76	330	505	717	794	884	1001

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	232	264	247	274	226	256	211	176	152	181	128	64
30	242	274	278	234	261	240	231	171	143	119	83	69
45	271	257	263	233	234	249	198	206	169	149	98	80
00	246	250	259	225	226	235	211	186	167	122	69	62
r Total	991	1045	1047	966	947	980	851	739	631	571	378	275

idnight Total : 14102
M peak hour begins : 11:15 AM peak volume : 1034 Peak hour factor : 0.88
M peak hour begins : 14:15 PM peak volume : 1074 Peak hour factor : 0.97

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1221002.PRN
Station : 000000000311
Identification : 000011169902 Interval : 15 minutes
Start date : Dec 21, 99 Start time : 00:00
Stop date : Dec 21, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on 5th ~~street~~ AVE

Dec 21 Westbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	7	4	5	0	4	4	14	30	29	39	40
30	5	6	1	1	1	1	7	17	32	42	42	45
45	4	4	0	2	1	2	12	13	30	42	47	31
00	8	3	3	1	0	2	13	21	29	31	51	42
Hr Total	20	20	8	9	2	9	36	65	121	144	179	158

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	37	44	35	52	68	74	63	57	21	23	25	17
30	48	34	49	67	57	65	54	35	35	15	17	9
45	40	52	66	66	119	43	46	40	27	15	20	44
00	41	39	56	58	71	61	38	31	23	26	11	18
Hr Total	166	169	206	243	315	243	201	163	106	79	73	88

Midnight Total : 2823
AM peak hour begins : 10:30 AM peak volume : 183 Peak hour factor : 0.90
PM peak hour begins : 16:30 PM peak volume : 329 Peak hour factor : 0.69

Dec 21 Eastbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	1	0	0	0	0	0	1	2	2	2	4
30	1	1	0	0	0	0	0	0	1	5	2	3
45	1	0	0	0	0	0	0	2	2	5	3	6
00	2	1	0	0	0	0	3	0	4	5	4	3
Hr Total	4	3	0	0	0	0	3	3	9	17	11	16

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	10	11	5	7	4	8	5	7	4	0	3	0
30	5	6	2	6	2	2	4	5	8	2	4	1
45	1	4	5	2	17	0	6	6	3	7	1	7
00	4	9	6	7	3	7	7	2	0	5	1	0
Hr Total	20	30	18	22	26	17	22	20	15	14	9	8

Midnight Total : 287
AM peak hour begins : 11:30 AM peak volume : 24 Peak hour factor : 0.60
PM peak hour begins : 13:00 PM peak volume : 30 Peak hour factor : 0.68

ata File : D1221002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 21, 99 Start time : 00:00
top date : Dec 21, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

ec 21 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	3	8	4	5	0	4	4	15	32	31	41	44
30	6	7	1	1	1	1	7	17	33	47	44	48
45	5	4	0	2	1	2	12	15	32	47	50	37
00	10	4	3	1	0	2	16	21	33	36	55	45
r Total	24	23	8	9	2	9	39	68	130	161	190	174

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	47	55	40	59	72	82	68	64	25	23	28	17
30	53	40	51	73	59	67	58	40	43	17	21	10
45	41	56	71	68	136	43	52	46	30	22	21	51
00	45	48	62	65	74	68	45	33	23	31	12	18
r Total	186	199	224	265	341	260	223	183	121	93	82	96

idnight Total : 3110
M peak hour begins : 10:30 AM peak volume : 197 Peak hour factor : 0.90
M peak hour begins : 16:30 PM peak volume : 359 Peak hour factor : 0.66

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1221003.PRN
Station : 000000000312
Identification : 000011169903 Interval : 15 minutes
Start date : Dec 21, 99 Start time : 00:00
Stop date : Dec 21, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on san carlos blvd.

Dec 21 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	35	24	17	8	6	11	23	94	104	135	175	184
30	24	24	19	8	7	13	43	92	134	146	181	184
45	24	21	9	2	10	20	67	126	142	164	171	139
00	22	21	8	5	11	24	66	122	148	163	155	170
Hr Total	105	90	53	23	34	68	199	434	528	608	682	677

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	158	157	153	177	198	177	179	104	57	83	70	55
30	135	141	154	181	184	173	167	103	81	59	50	41
45	161	171	163	176	184	191	184	97	73	50	69	50
00	131	148	175	181	197	171	132	66	68	51	42	28
Hr Total	585	617	645	715	763	712	662	370	279	243	231	174

Midnight Total : 9497
AM peak hour begins : 10:30 AM peak volume : 694 Peak hour factor : 0.94
PM peak hour begins : 16:00 PM peak volume : 763 Peak hour factor : 0.96

Dec 21 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	28	20	16	8	6	12	29	94	124	145	128	164
30	39	14	8	9	6	5	75	92	128	133	132	129
45	25	17	12	8	7	12	81	119	165	140	151	138
00	11	12	2	8	4	22	103	112	133	148	154	186
Hr Total	103	63	38	33	23	51	288	417	550	566	565	617

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	178	176	168	147	145	146	141	106	108	126	82	60
30	178	167	153	154	176	156	125	122	110	121	66	54
45	191	169	156	159	160	160	114	100	81	88	66	43
00	144	165	154	159	176	153	121	118	95	78	73	39
Hr Total	691	677	631	619	657	615	501	446	394	413	287	196

Midnight Total : 9441
AM peak hour begins : 11:30 AM peak volume : 680 Peak hour factor : 0.89
PM peak hour begins : 12:00 PM peak volume : 691 Peak hour factor : 0.90

Data File : D1221003.PRN
Station : 000000000312
Identification : 000011169903 Interval : 15 minutes
Start date : Dec 21, 99 Start time : 00:00
Stop date : Dec 21, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on san carlos blvd.

Dec 21 Total Volume for All Lanes

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	63	44	33	16	12	23	52	188	228	280	303	348
30	63	38	27	17	13	18	118	184	262	279	313	313
45	49	38	21	10	17	32	148	245	307	304	322	277
00	33	33	10	13	15	46	169	234	281	311	309	356
Hr Total	208	153	91	56	57	119	487	851	1078	1174	1247	1294

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	336	333	321	324	343	323	320	210	165	209	152	115
30	313	308	307	335	360	329	292	225	191	180	116	95
45	352	340	319	335	344	351	298	197	154	138	135	93
00	275	313	329	340	373	324	253	184	163	129	115	67
Hr Total	1276	1294	1276	1334	1420	1327	1163	816	673	656	518	370

Midnight Total : 18938
AM peak hour begins : 11:00 AM peak volume : 1294 Peak hour factor : 0.91
PM peak hour begins : 16:00 PM peak volume : 1420 Peak hour factor : 0.95

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1221001.PRN
Station : 000000000310
Identification : 000012169901 Interval : 15 minutes
Start date : Dec 21, 99 Start time : 00:00
Stop date : Dec 21, 99 Stop time : 24:00
City/Town : ft. myers beach County : lee
Location : ~~estero blvd~~. 5TH ST.

Dec 21 Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	10	2	3	1	1	1	5	13	16	24	28	33
30	3	3	3	0	2	0	5	17	14	20	30	39
45	5	3	3	0	0	1	1	10	27	27	22	38
00	11	5	5	1	0	4	8	10	22	18	26	35
Hr Total	29	13	14	2	3	6	19	50	79	89	106	145

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	27	29	38	38	47	52	35	25	36	40	32	24
30	33	35	53	39	33	32	24	27	27	31	27	9
45	20	31	37	39	67	27	35	32	28	28	27	31
00	69	42	32	45	43	39	31	24	26	24	26	14
Hr Total	149	137	160	161	190	150	125	108	117	123	112	78

Midnight Total : 2165
AM peak hour begins : 11:00 AM peak volume : 145 Peak hour factor : 0.93
PM peak hour begins : 16:15 PM peak volume : 195 Peak hour factor : 0.73

Dec 21 Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	11	2	2	2	2	1	3	26	49	74	87	99
30	10	7	2	1	1	2	10	16	43	72	94	109
45	8	6	5	1	1	4	16	34	62	56	100	70
00	7	7	3	4	0	6	30	50	79	71	80	113
Hr Total	36	22	12	8	4	13	59	126	233	273	361	391

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	112	109	94	75	60	129	79	82	68	64	56	38
30	91	102	101	91	89	101	73	54	69	60	59	29
45	102	113	96	71	75	80	68	56	61	59	56	24
00	105	101	85	80	88	108	58	69	68	40	23	30
Hr Total	410	425	376	317	312	418	278	261	266	223	194	121

Midnight Total : 5139
AM peak hour begins : 11:15 AM peak volume : 404 Peak hour factor : 0.89
PM peak hour begins : 12:45 PM peak volume : 429 Peak hour factor : 0.95

ata File : D1221001.PRN
tation : 000000000310
dentification : 000012169901 Interval : 15 minutes
tart date : Dec 21, 99 Start time : 00:00
top date : Dec 21, 99 Stop time : 24:00
ity/Town : ft. myers beach County : lee
ocation : ~~estero blvd~~. 5TH ST.

ec 21 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	21	4	5	3	3	2	8	39	65	98	115	132
30	13	10	5	1	3	2	15	33	57	92	124	148
45	13	9	8	1	1	5	17	44	89	83	122	108
00	18	12	8	5	0	10	38	60	101	89	106	148
r Total	65	35	26	10	7	19	78	176	312	362	467	536

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	139	138	132	113	107	181	114	107	104	104	88	62
30	124	137	154	130	122	133	97	81	96	91	86	38
45	122	144	133	110	142	107	103	88	89	87	83	55
00	174	143	117	125	131	147	89	93	94	64	49	44
r Total	559	562	536	478	502	568	403	369	383	346	306	199

idnight Total : 7304
M peak hour begins : 11:15 AM peak volume : 543 Peak hour factor : 0.92
M peak hour begins : 12:45 PM peak volume : 593 Peak hour factor : 0.85

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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)ata File : D1221004.PRN
;tation : 000000000313
:dentification : 000011169904 Interval : 15 minutes
;tart date : Dec 21, 99 Start time : 00:00
;top date : Dec 21, 99 Stop time : 24:00
:ity/Town : ft. meyers beach County : lee
;ocation : on estero blvd.

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)ec 21 Northbound Volume for Lane 1

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	6	2	3	1	1	0	2	12	14	17	29	27
30	6	2	2	0	1	1	2	3	9	16	30	35
45	6	6	2	0	0	2	6	12	17	22	31	23
00	2	4	0	2	0	1	13	16	21	21	27	23
:r Total	20	14	7	3	2	4	23	43	61	76	117	108

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	25	34	29	13	25	29	26	31	34	37	28	20
30	12	25	19	22	36	69	23	32	30	20	29	17
45	30	35	34	14	28	21	33	23	19	31	30	17
00	25	28	38	18	20	26	33	25	30	19	13	23
:r Total	92	122	120	67	109	145	115	111	113	107	100	77

:idnight Total : 1756
AM peak hour begins : 10:30 AM peak volume : 120 Peak hour factor : 0.86
PM peak hour begins : 16:30 PM peak volume : 146 Peak hour factor : 0.53

****

)ec 21 Southbound Volume for Lane 2

:nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	36	21	15	8	10	13	34	106	136	186	176	218
30	41	18	12	9	5	6	80	108	151	160	175	200
45	29	20	12	8	7	13	82	134	189	175	189	199
00	21	17	8	9	4	28	113	125	172	190	194	231
:r Total	127	76	47	34	26	60	309	473	648	711	734	848

:nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	235	217	229	209	207	240	210	157	179	182	117	86
30	238	240	224	223	237	221	182	165	155	171	95	67
45	233	217	212	232	233	210	165	156	130	126	105	79
00	227	240	228	232	262	274	175	162	141	117	98	53
r Total	933	914	893	896	939	945	732	640	605	596	415	285

idnight Total : 12886
M peak hour begins : 11:30 AM peak volume : 903 Peak hour factor : 0.95
M peak hour begins : 16:15 PM peak volume : 972 Peak hour factor : 0.93

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ata File : D1221004.PRN
cation : 000000000313
dentification : 000011169904 Interval : 15 minutes
tart date : Dec 21, 99 Start time : 00:00
top date : Dec 21, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on estero blvd.

ec 21 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	42	23	18	9	11	13	36	118	150	203	205	245
30	47	20	14	9	6	7	82	111	160	176	205	235
45	35	26	14	8	7	15	88	146	206	197	220	222
00	23	21	8	11	4	29	126	141	193	211	221	254
r Total	147	90	54	37	28	64	332	516	709	787	851	956

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	260	251	258	222	232	269	236	188	213	219	145	106
30	250	265	243	245	273	290	205	197	185	191	124	84
45	263	252	246	246	261	231	198	179	149	157	135	96
00	252	268	266	250	282	300	208	187	171	136	111	76
r Total	1025	1036	1013	963	1048	1090	847	751	718	703	515	362

idnight Total : 14642
M peak hour begins : 11:30 AM peak volume : 986 Peak hour factor : 0.94
M peak hour begins : 16:30 PM peak volume : 1102 Peak hour factor : 0.95

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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ata File : D1222002.PRN
tation : 000000000311
dentification : 000011169902 Interval : 15 minutes
tart date : Dec 22, 99 Start time : 00:00
top date : Dec 22, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

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ec 22 Westbound Volume for Lane 1

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	13	1	2	1	0	1	1	14	22	26	37	36
30	5	1	5	2	2	2	13	24	29	38	44	44
45	5	1	4	2	1	3	9	17	22	57	46	49
00	4	5	4	1	1	3	14	14	25	41	32	33
r Total	27	8	15	6	4	9	37	69	98	162	159	162

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	47	47	70	83	87	76	48	27	20	32	29	16
30	44	43	54	84	86	79	40	34	20	28	15	17
45	37	43	83	79	77	65	42	24	23	26	19	58
00	47	53	51	79	112	63	18	33	17	28	14	12
r Total	175	186	258	325	362	283	148	118	80	114	77	103

idnight Total : 2985
M peak hour begins : 09:30 AM peak volume : 179 Peak hour factor : 0.79
M peak hour begins : 16:00 PM peak volume : 362 Peak hour factor : 0.81

****

ec 22 Eastbound Volume for Lane 2

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	0	0	0	1	0	0	1	3	2	8	6	4
30	0	3	0	1	0	0	0	1	3	3	0	4
45	1	0	0	0	0	0	1	0	2	2	4	4
00	0	0	0	0	0	0	0	1	4	3	7	4
r Total	1	3	0	2	0	0	2	5	11	16	17	16

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	6	6	7	7	5	3	3	2	6	3	2	0
30	10	7	4	5	6	4	4	4	2	5	3	5
45	7	4	8	7	6	5	5	3	4	1	3	0
00	4	8	5	10	19	8	4	8	3	0	0	0
r Total	27	25	24	29	36	20	16	17	15	9	8	5

idnight Total : 304
M peak hour begins : 11:30 AM peak volume : 24 Peak hour factor : 0.60
M peak hour begins : 16:00 PM peak volume : 36 Peak hour factor : 0.47

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ata File : D1222002.PRN
cation : 000000000311
entification : 000011169902 Interval : 15 minutes
tart date : Dec 22, 99 Start time : 00:00
top date : Dec 22, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on 5th ~~street~~ AVE

c 22 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	13	1	2	2	0	1	2	17	24	34	43	40
30	5	4	5	3	2	2	13	25	32	41	44	48
45	6	1	4	2	1	3	10	17	24	59	50	53
00	4	5	4	1	1	3	14	15	29	44	39	37
Total	28	11	15	8	4	9	39	74	109	178	176	178

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	53	53	77	90	92	79	51	29	26	35	31	16
30	54	50	58	89	92	83	44	38	22	33	18	22
45	44	47	91	86	83	70	47	27	27	27	22	58
00	51	61	56	89	131	71	22	41	20	28	14	12
Total	202	211	282	354	398	303	164	135	95	123	85	108

idnight Total : 3289
M peak hour begins : 11:30 AM peak volume : 197 Peak hour factor : 0.91
M peak hour begins : 16:00 PM peak volume : 398 Peak hour factor : 0.76

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1222003.PRN
Station : 000000000312
Identification : 000011169903 Interval : 15 minutes
Start date : Dec 22, 99 Start time : 00:00
Stop date : Dec 22, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on san carlos blvd.

Dec 22 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	35	28	26	9	8	10	29	97	135	176	177	150
30	40	27	16	8	2	20	47	95	130	149	157	172
45	31	18	18	11	7	22	63	95	113	163	192	161
00	32	22	17	4	15	17	65	140	126	164	161	144
Hr Total	138	95	77	32	32	69	204	427	504	652	687	627

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	135	162	135	175	161	187	193	121	86	65	65	58
30	174	170	176	174	182	182	178	101	78	72	73	47
45	171	114	166	180	184	166	127	73	66	61	64	37
00	124	166	165	168	172	164	101	82	54	72	59	37
Hr Total	604	612	642	697	699	699	599	377	284	270	261	179

Midnight Total : 9467
AM peak hour begins : 09:45 AM peak volume : 690 Peak hour factor : 0.90
PM peak hour begins : 16:15 PM peak volume : 725 Peak hour factor : 0.97

Dec 22 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	27	19	13	10	4	11	39	99	110	157	163	163
30	34	19	9	5	8	5	57	93	139	141	160	196
45	22	14	12	7	8	12	84	103	135	146	162	171
00	22	17	16	10	11	15	113	113	148	166	178	146
Hr Total	105	69	50	32	31	43	293	408	532	610	663	676

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	182	142	155	135	187	190	138	101	115	100	89	58
30	189	171	184	174	205	227	108	116	89	106	84	40
45	175	149	148	202	207	168	128	86	98	87	77	43
00	152	145	159	185	197	158	109	100	114	84	60	43
Hr Total	698	607	646	696	796	743	483	403	416	377	310	184

Midnight Total : 9871
AM peak hour begins : 10:45 AM peak volume : 708 Peak hour factor : 0.90
PM peak hour begins : 16:30 PM peak volume : 821 Peak hour factor : 0.90

ata File : D1222003.PRN
tation : 000000000312
dentification : 000011169903 Interval : 15 minutes
tart date : Dec 22, 99 Start time : 00:00
top date : Dec 22, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on san carlos blvd.

ec 22 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	62	47	39	19	12	21	68	196	245	333	340	313
30	74	46	25	13	10	25	104	188	269	290	317	368
45	53	32	30	18	15	34	147	198	248	309	354	332
00	54	39	33	14	26	32	178	253	274	330	339	290
r Total	243	164	127	64	63	112	497	835	1036	1262	1350	1303

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	317	304	290	310	348	377	331	222	201	165	154	116
30	363	341	360	348	387	409	286	217	167	178	157	87
45	346	263	314	382	391	334	255	159	164	148	141	80
00	276	311	324	353	369	322	210	182	168	156	119	80
r Total	1302	1219	1288	1393	1495	1442	1082	780	700	647	571	363

idnight Total : 19338
M peak hour begins : 10:30 AM peak volume : 1374 Peak hour factor : 0.93
M peak hour begins : 16:30 PM peak volume : 1546 Peak hour factor : 0.94

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1222001.PRN
Station : 000000000310
Identification : 000012169901 Interval : 15 minutes
Start date : Dec 22, 99 Start time : 00:00
Stop date : Dec 22, 99 Stop time : 24:00
City/Town : ft. myers beach County : lee
Location : ~~estero blvd~~. 5TH ST.

Dec 22 Eastbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	11	9	4	4	0	2	4	11	11	22	28	48
30	8	9	8	1	4	4	7	8	19	22	27	30
45	9	4	2	4	1	3	6	11	12	36	24	27
00	9	3	3	3	2	2	3	9	18	28	33	36
Hr Total	37	25	17	12	7	11	20	39	60	108	112	141

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	38	46	47	53	67	55	22	23	20	42	29	18
30	32	32	49	55	40	29	27	43	23	37	22	26
45	33	48	35	50	35	21	30	27	24	23	23	34
00	52	55	43	43	71	24	36	29	23	29	23	10
Hr Total	155	181	174	201	213	129	115	122	90	131	97	88

Midnight Total : 2285
AM peak hour begins : 11:00 AM peak volume : 141 Peak hour factor : 0.73
PM peak hour begins : 15:15 PM peak volume : 215 Peak hour factor : 0.80

Dec 22 Westbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	15	7	6	3	1	2	9	22	53	78	112	108
30	17	8	9	5	1	3	7	27	30	60	142	142
45	16	6	3	4	0	3	15	28	56	65	102	105
00	10	6	3	0	8	4	30	40	71	85	95	118
Hr Total	58	27	21	12	10	12	61	117	210	288	451	473

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	100	132	101	100	68	83	72	49	54	57	42	41
30	119	171	93	99	85	96	66	52	76	61	47	33
45	120	98	117	100	96	74	70	58	68	38	44	34
00	117	114	107	76	95	63	67	65	57	48	45	25
Hr Total	456	515	418	375	344	316	275	224	255	204	178	133

Midnight Total : 5433
AM peak hour begins : 11:00 AM peak volume : 473 Peak hour factor : 0.83
PM peak hour begins : 12:30 PM peak volume : 540 Peak hour factor : 0.79

Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

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ata File : D1222001.PRN
cation : 000000000310
dentification : 000012169901 Interval : 15 minutes
tart date : Dec 22, 99 Start time : 00:00
top date : Dec 22, 99 Stop time : 24:00
ity/Town : ft. myers beach County : lee
ocation : ~~estero blvd~~. 5TH ST

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ec 22 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	26	16	10	7	1	4	13	33	64	100	140	156
30	25	17	17	6	5	7	14	35	49	82	169	172
45	25	10	5	8	1	6	21	39	68	101	126	132
00	19	9	6	3	10	6	33	49	89	113	128	154
Total	95	52	38	24	17	23	81	156	270	396	563	614

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	138	178	148	153	135	138	94	72	74	99	71	59
30	151	203	142	154	125	125	93	95	99	98	69	59
45	153	146	152	150	131	95	100	85	92	61	67	68
00	169	169	150	119	166	87	103	94	80	77	68	35
Total	611	696	592	576	557	445	390	346	345	335	275	221

idnight Total : 7718
I peak hour begins : 11:00 AM peak volume : 614 Peak hour factor : 0.89
M peak hour begins : 12:30 PM peak volume : 703 Peak hour factor : 0.87

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Wilson, Miller, Barton & Peek
3200 Bailey Lane at Airport Road, Naples FL 33942
Volume Report with Midnight Totals

Data File : D1222004.PRN
Station : 000000000313
Identification : 000011169904 Interval : 15 minutes
Start date : Dec 22, 99 Start time : 00:00
Stop date : Dec 22, 99 Stop time : 24:00
City/Town : ft. meyers beach County : lee
Location : on estero blvd.

Dec 22 Northbound Volume for Lane 1

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	9	9	2	3	1	2	2	9	9	23	26	30
30	2	7	7	1	1	3	3	12	11	16	36	42
45	15	5	3	1	0	2	10	9	15	19	19	26
00	4	4	1	1	5	4	15	13	18	20	22	36
Hr Total	30	25	13	6	7	11	30	43	53	78	103	134

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	26	33	31	20	27	21	24	36	24	24	21	18
30	26	27	32	25	18	19	33	18	33	20	17	16
45	27	29	34	20	24	25	27	28	19	12	26	17
00	38	33	28	16	26	21	30	36	26	22	25	11
Hr Total	117	122	125	81	95	86	114	118	102	78	89	62

Midnight Total : 1722
AM peak hour begins : 11:00 AM peak volume : 134 Peak hour factor : 0.80
PM peak hour begins : 13:45 PM peak volume : 130 Peak hour factor : 0.96

Dec 22 Southbound Volume for Lane 2

End Time	00	01	02	03	04	05	06	07	08	09	10	11
15	38	24	18	14	4	14	45	107	132	182	209	239
30	47	30	18	6	11	9	55	103	160	182	207	258
45	31	16	11	12	9	15	91	117	153	197	208	215
00	33	20	17	13	13	18	119	118	181	217	235	203
Hr Total	149	90	64	45	37	56	310	445	626	778	859	915

End Time	12	13	14	15	16	17	18	19	20	21	22	23
15	247	238	244	228	252	233	178	133	140	147	115	75
30	261	252	248	259	248	252	151	155	117	148	117	68
45	232	216	222	255	254	197	161	128	136	109	106	77
00	230	234	233	234	281	187	148	136	144	131	95	53
Hr Total	970	940	947	976	1035	869	638	552	537	535	433	273

Midnight Total : 13079
AM peak hour begins : 10:45 AM peak volume : 947 Peak hour factor : 0.92
PM peak hour begins : 16:00 PM peak volume : 1035 Peak hour factor : 0.92

ata File : D1222004.PRN
ation : 000000000313
dentification : 000011169904 Interval : 15 minutes
tart date : Dec 22, 99 Start time : 00:00
top date : Dec 22, 99 Stop time : 24:00
ity/Town : ft. meyers beach County : lee
ocation : on estero blvd.

c 22 Total Volume for All Lanes

nd Time	00	01	02	03	04	05	06	07	08	09	10	11
15	47	33	20	17	5	16	47	116	141	205	235	269
30	49	37	25	7	12	12	58	115	171	198	243	300
45	46	21	14	13	9	17	101	126	168	216	227	241
00	37	24	18	14	18	22	134	131	199	237	257	239
Total	179	115	77	51	44	67	340	488	679	856	962	1049

nd Time	12	13	14	15	16	17	18	19	20	21	22	23
15	273	271	275	248	279	254	202	169	164	171	136	93
30	287	279	280	284	266	271	184	173	150	168	134	84
45	259	245	256	275	278	222	188	156	155	121	132	94
00	268	267	261	250	307	208	178	172	170	153	120	64
Total	1087	1062	1072	1057	1130	955	752	670	639	613	522	335

idnight Total : 14801
1 peak hour begins : 10:45 AM peak volume : 1067 Peak hour factor : 0.89
M peak hour begins : 16:00 PM peak volume : 1130 Peak hour factor : 0.92

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpm
Site Code : 00000001
Start Date : 12/21/1999
Page No : 1

Groups Printed- All vehicles & pedestrians

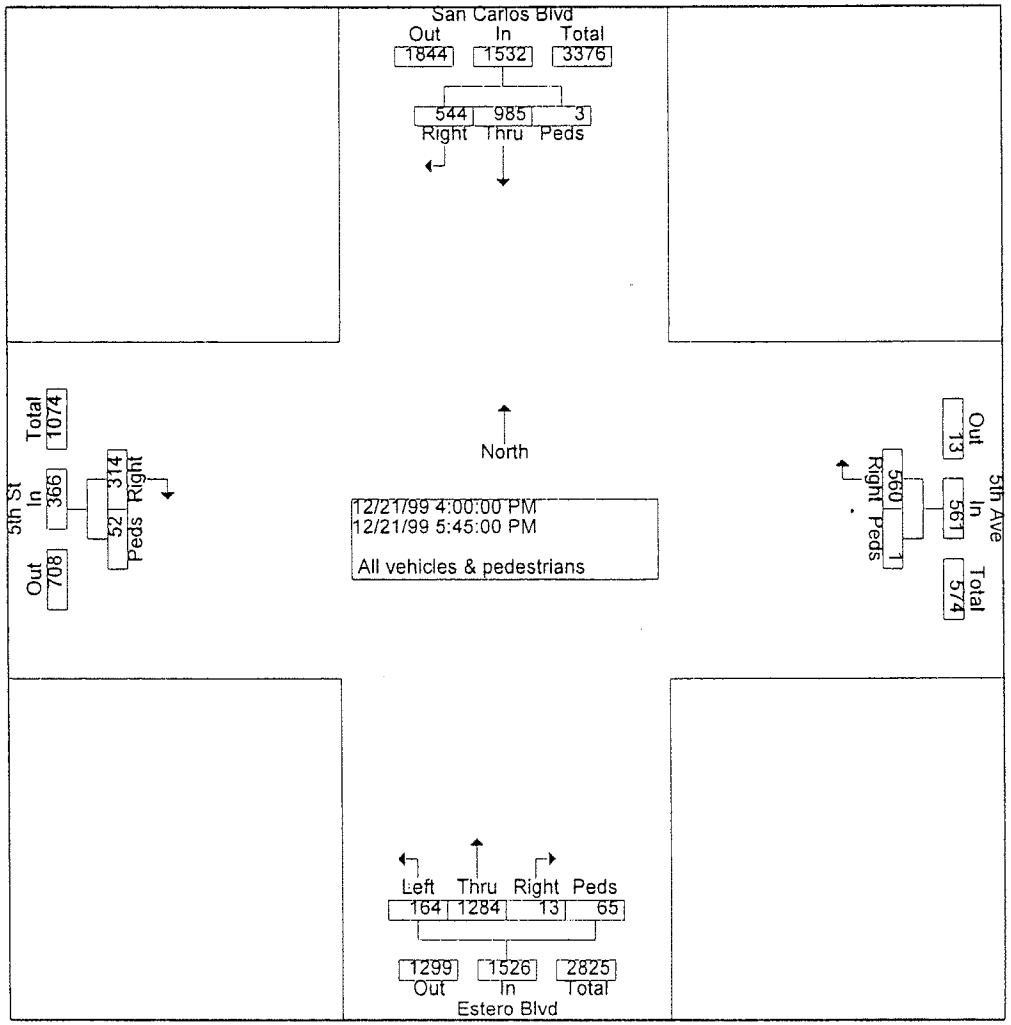
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0		
04:00 PM	142	43	0	185	68	0	68	16	184	2	21	223	40	4	44	520
04:15 PM	151	39	0	190	56	0	56	30	153	1	3	187	37	13	50	483
04:30 PM	130	38	3	171	135	0	135	25	161	1	10	197	53	10	63	566
04:45 PM	148	58	0	206	77	0	77	13	172	1	6	192	36	7	43	518
Total	571	178	3	752	336	0	336	84	670	5	40	799	166	34	200	2087
05:00 PM	136	66	0	202	63	0	63	23	160	2	5	190	46	9	55	510
05:15 PM	151	55	0	206	51	0	51	22	150	1	5	178	31	3	34	469
05:30 PM	54	134	0	188	47	0	47	17	152	3	11	183	28	4	32	450
05:45 PM	73	111	0	184	63	1	64	18	152	2	4	176	43	2	45	469
Total	414	366	0	780	224	1	225	80	614	8	25	727	148	18	166	1898
Grand Total	985	544	3	1532	560	1	561	164	1284	13	65	1526	314	52	366	3985
Apprch %	64.3	35.5	0.2		99.8	0.2		10.7	84.1	0.9	4.3		85.8	14.2		
Total %	24.7	13.7	0.1	38.4	14.1	0.0	14.1	4.1	32.2	0.3	1.6	38.3	7.9	1.3	9.2	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 2

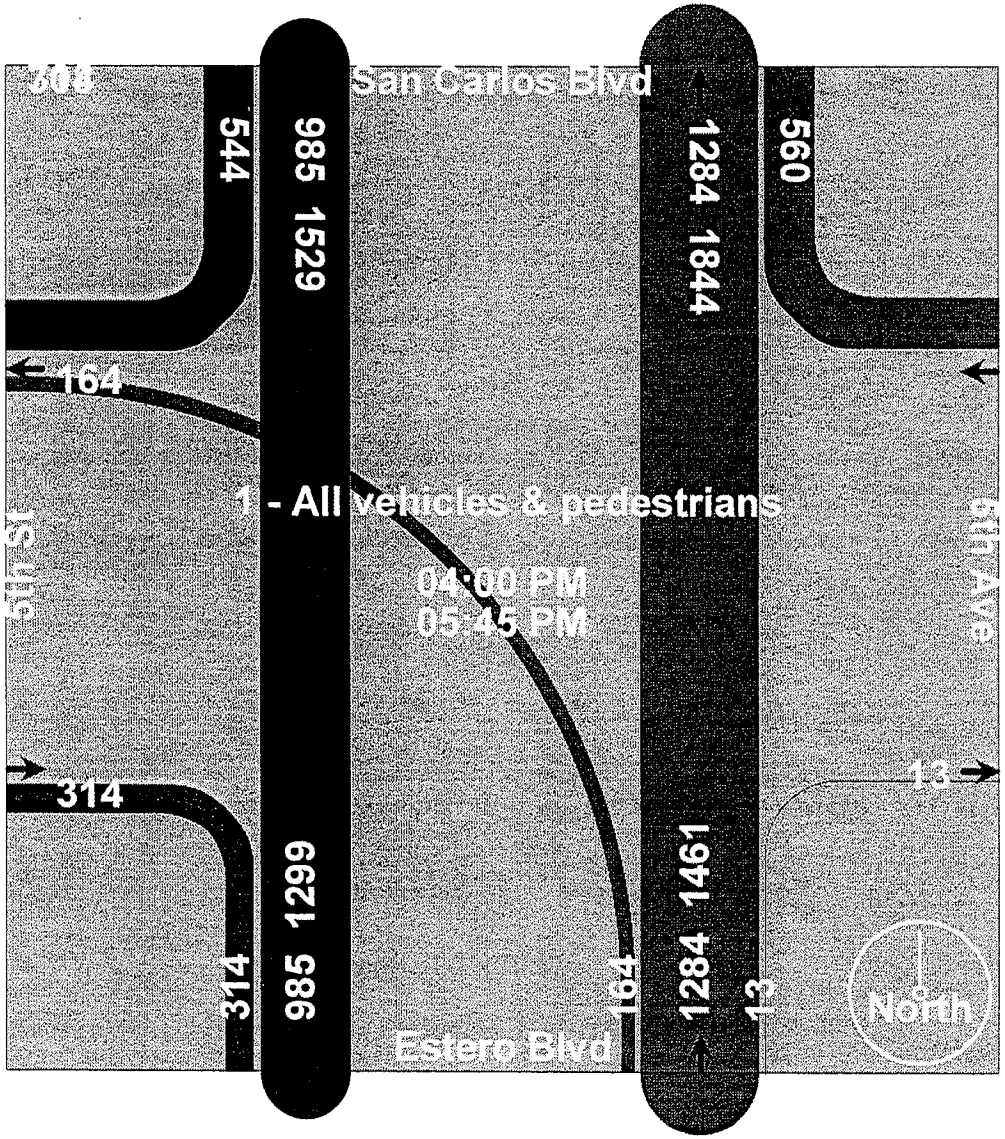


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpm
Site Code : 00000001
Start Date : 12/21/1999
Page No : 3



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 4

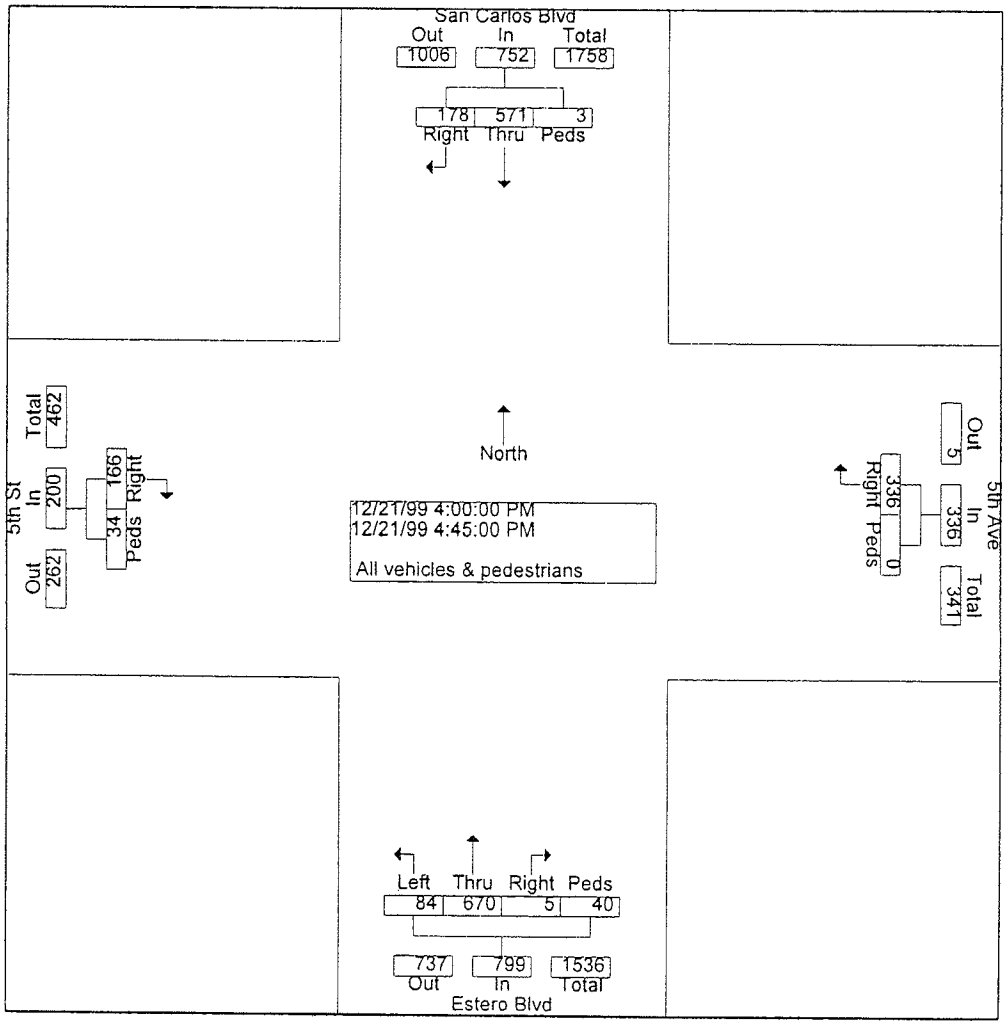
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																
Intersection 04:00 PM																
Volume	571	178	3	752	336	0	336	84	670	5	40	799	166	34	200	2087
Percent	75.9	23.7	0.4		100.0	0.0		10.5	83.9	0.6	5.0		83.0	17.0		
04:30 Volume	130	38	3	171	135	0	135	25	161	1	10	197	53	10	63	566
Peak Factor																0.922
High Int.	04:45 PM				04:30 PM			04:00 PM					04:30 PM			
Volume	148	58	0	206	135	0	135	16	184	2	21	223	53	10	63	
Peak Factor				0.913			0.622					0.896			0.794	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 5

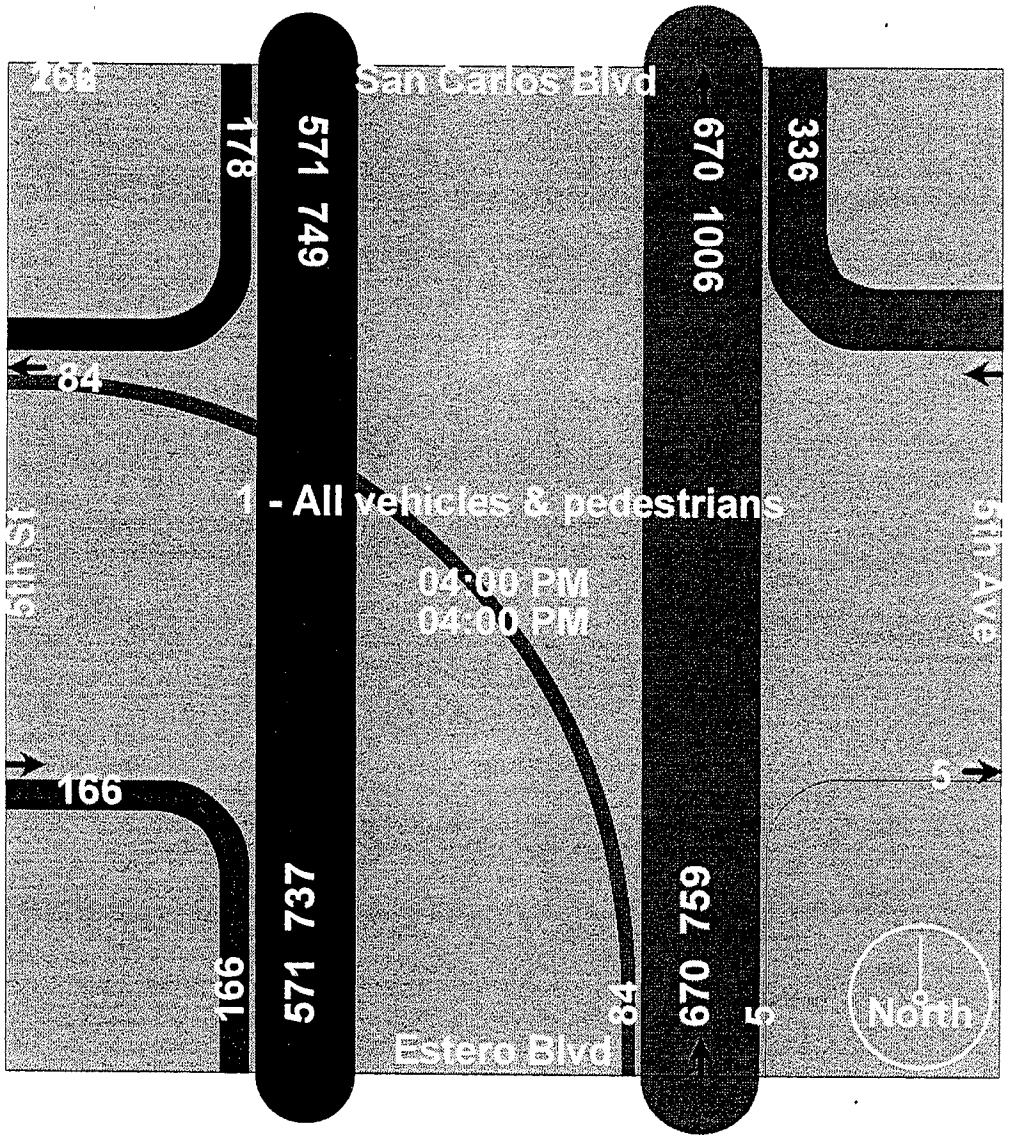


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpm
Site Code : 00000001
Start Date : 12/21/1999
Page No : 6



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpm
Site Code : 00000001
Start Date : 12/21/1999
Page No : 7

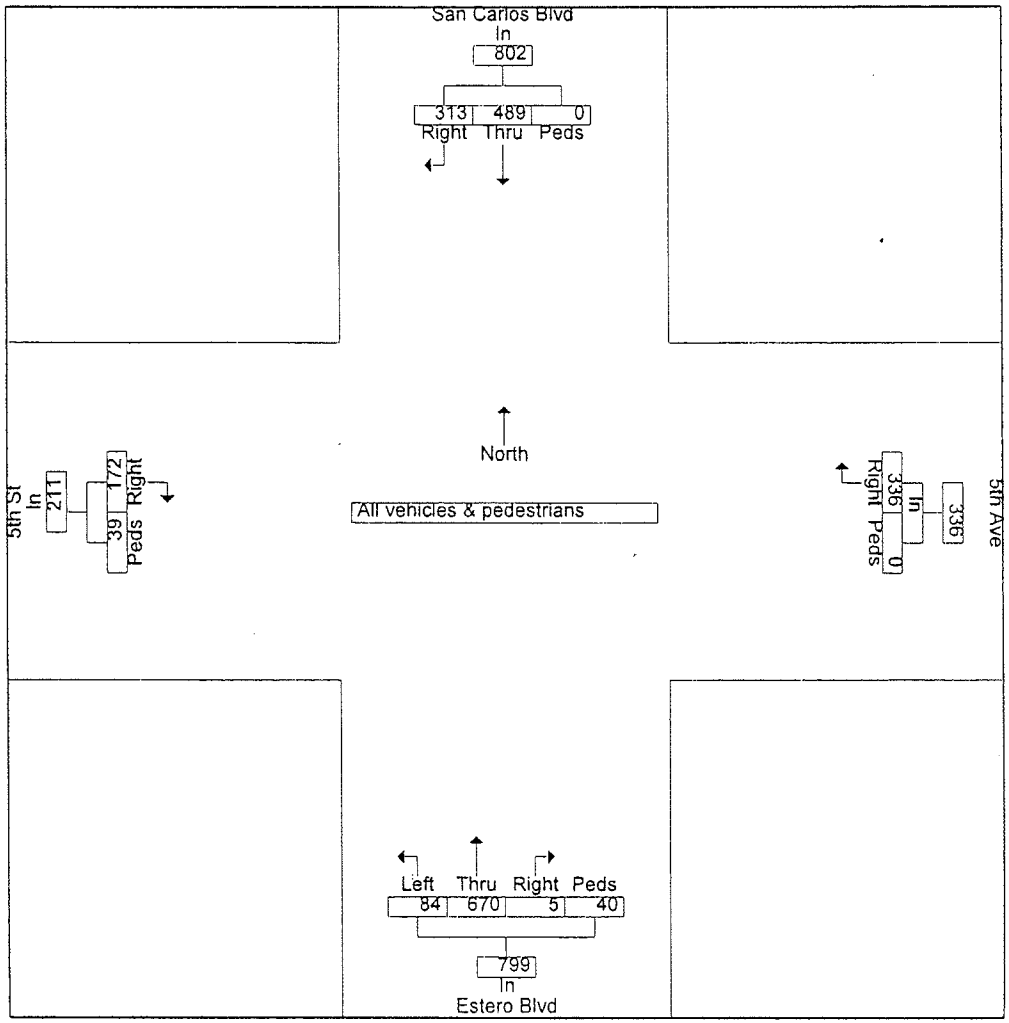
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																
By Approach	04:45 PM				04:00 PM			04:00 PM					04:15 PM			
Volume	489	313	0	802	336	0	336	84	670	5	40	799	172	39	211	
Percent	61.0	39.0	0.0		100.0	0.0		10.5	83.9	0.6	5.0		81.5	18.5		
High Int.	04:45 PM				04:30 PM			04:00 PM					04:30 PM			
Volume	148	58	0	206	135	0	135	16	184	2	21	223	53	10	63	
Peak Factor				0.973			0.622					0.896			0.837	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 8

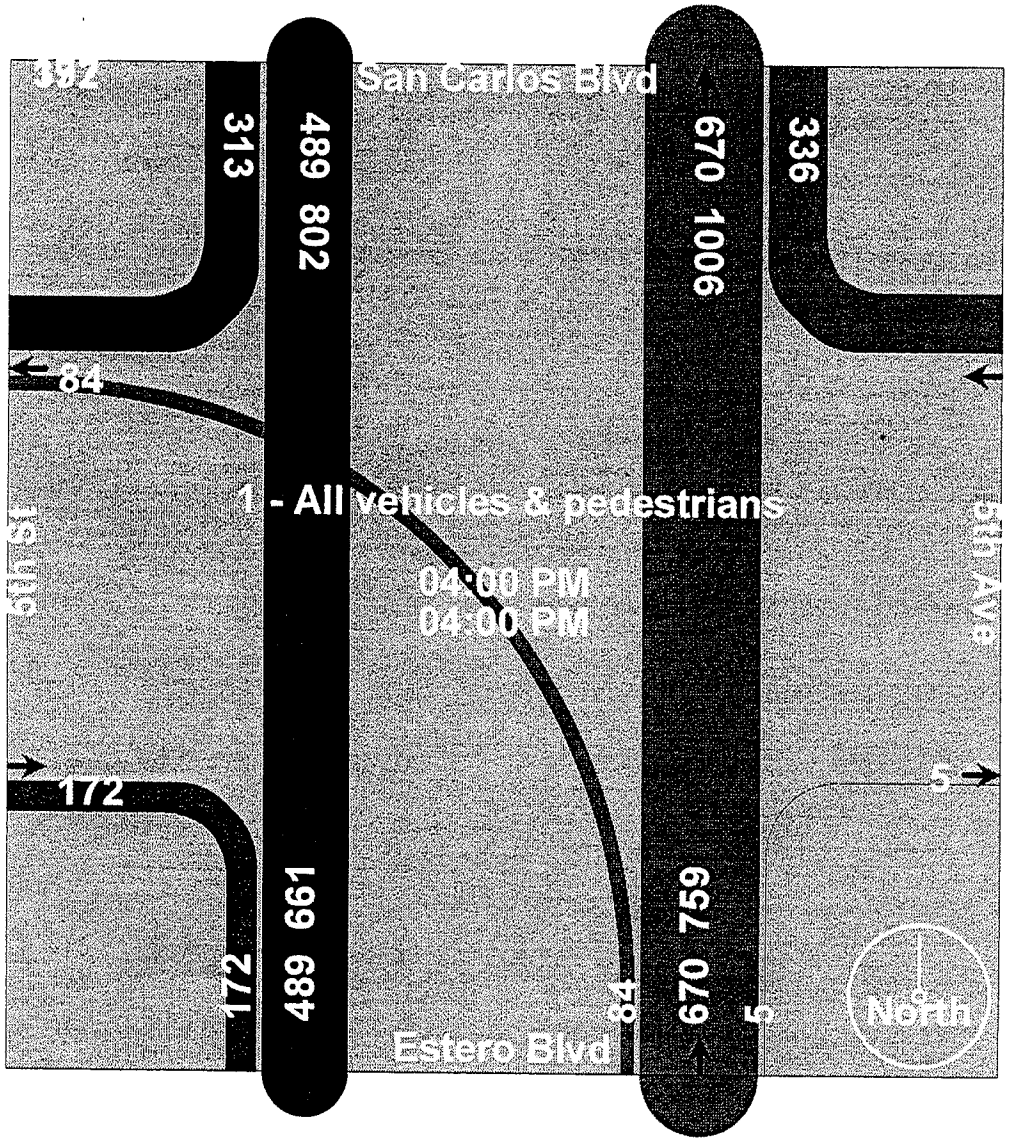


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpm
Site Code : 00000001
Start Date : 12/21/1999
Page No : 9

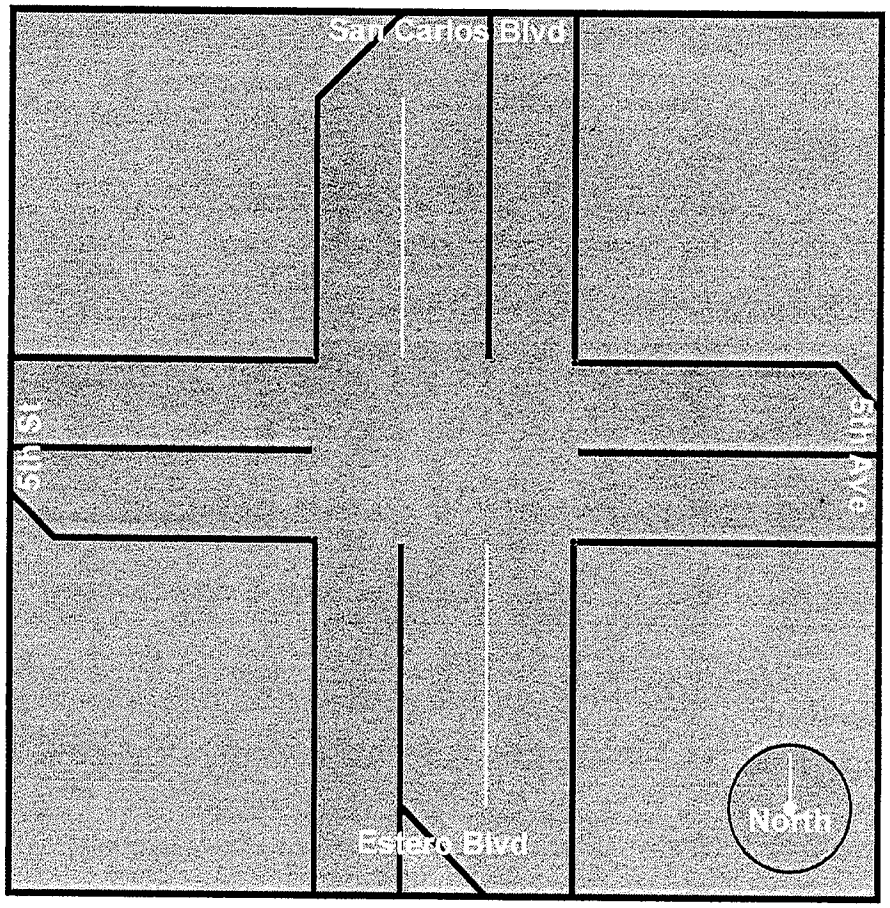


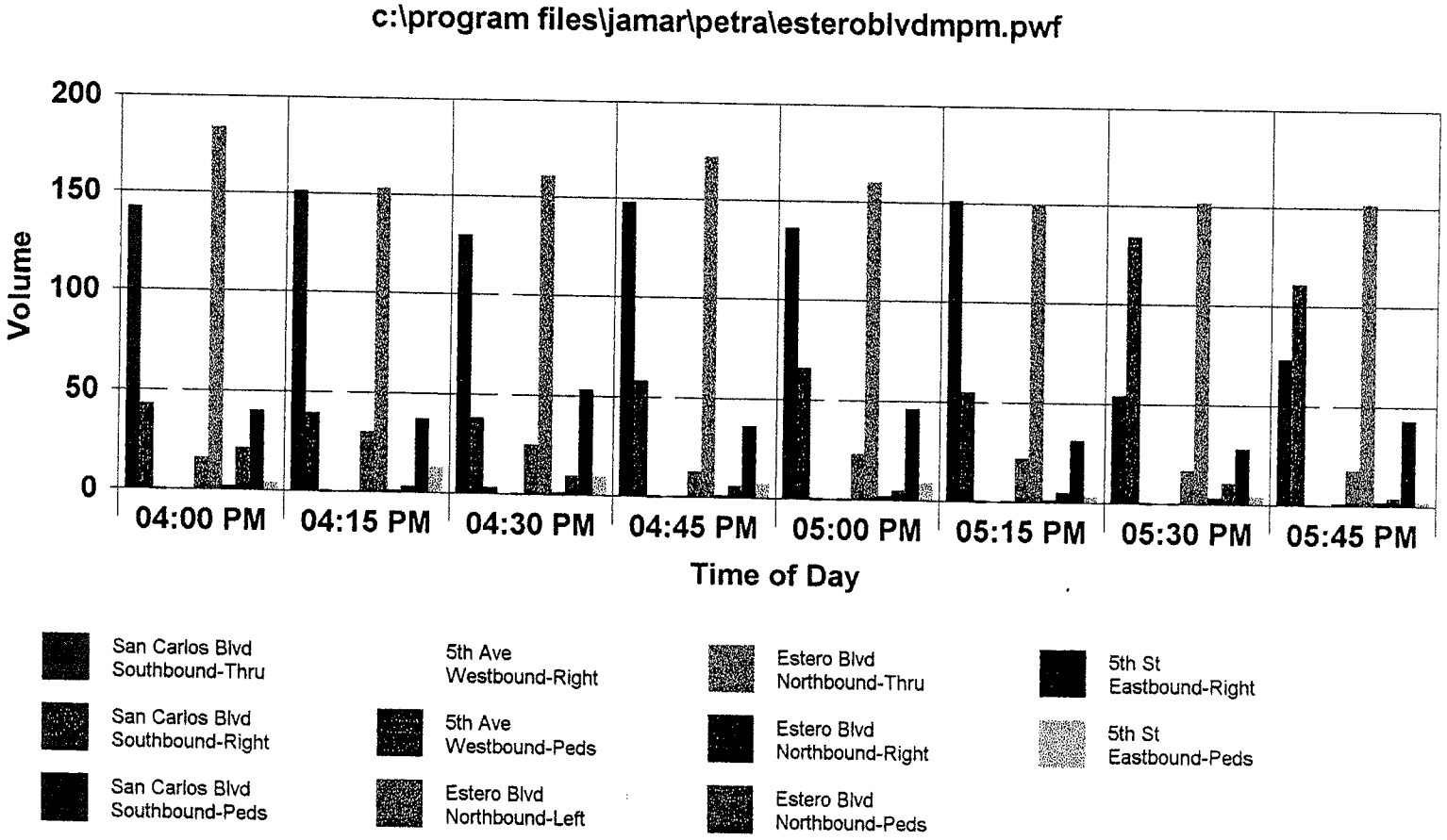
Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 4PM-6PM

File Name : esteroblvdmpn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 10




c:\program files\jamar\petra\esteroblvdmpm.pwf
200
150
100
50
0
Volume
04:00 PM
04:15 PM
04:30 PM
04:45 PM
05:00 PM
05:15 PM
05:30 PM
05:45 PM
Time of Day
San Carlos Blvd Southbound-Thru
San Carlos Blvd Southbound-Right
San Carlos Blvd Southbound-Peds
5th Ave Westbound-Right
5th Ave Westbound-Peds
Estero Blvd Northbound-Left
Estero Blvd Northbound-Thru
Estero Blvd Northbound-Right
Estero Blvd Northbound-Peds
5th St Eastbound-Right
5th St Eastbound-Peds

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmni
Site Code : 00000001
Start Date : 12/21/1999
Page No : 1

Groups Printed- All vehicles & pedestrians

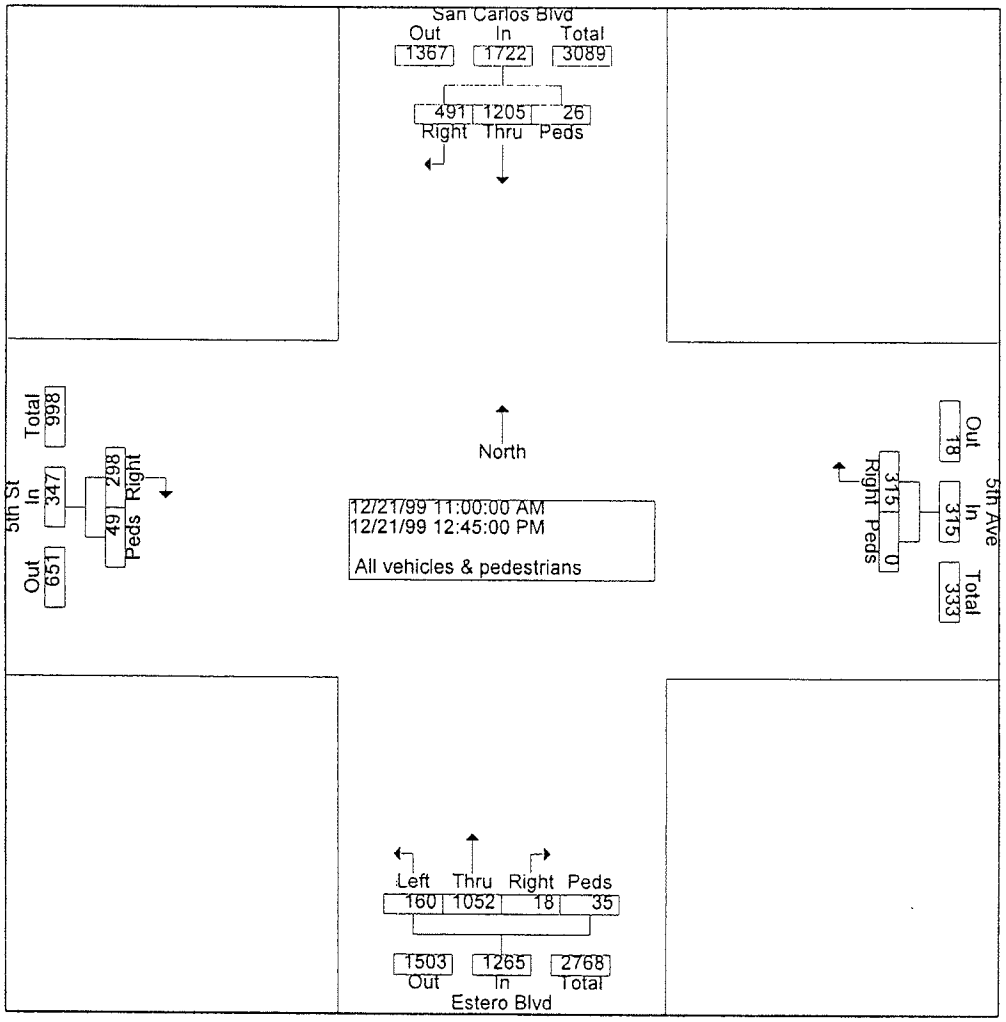
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0		
11:00 AM	159	57	0	216	40	0	40	23	163	5	4	195	44	10	54	505
11:15 AM	127	54	10	191	42	0	42	30	152	0	2	184	36	3	39	456
11:30 AM	139	56	4	199	34	0	34	16	136	2	2	156	46	5	51	440
11:45 AM	161	69	0	230	41	0	41	15	152	2	5	174	33	5	38	483
Total	586	236	14	836	157	0	157	84	603	9	13	709	159	23	182	1884
12:00 PM	165	64	6	235	32	0	32	22	158	6	1	187	37	5	42	496
12:15 PM	167	61	5	233	46	0	46	14	84	1	5	104	31	3	34	417
12:30 PM	159	72	0	231	35	0	35	17	102	0	5	124	23	5	28	418
12:45 PM	128	58	1	187	45	0	45	23	105	2	11	141	48	13	61	434
Total	619	255	12	886	158	0	158	76	449	9	22	556	139	26	165	1765
Grand Total	1205	491	26	1722	315	0	315	160	1052	18	35	1265	298	49	347	3649
Apprch %	70.0	28.5	1.5		100.0	0.0		12.6	83.2	1.4	2.8		85.9	14.1		
Total %	33.0	13.5	0.7	47.2	8.6	0.0	8.6	4.4	28.8	0.5	1.0	34.7	8.2	1.3	9.5	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmnr
Site Code : 00000001
Start Date : 12/21/1999
Page No : 2

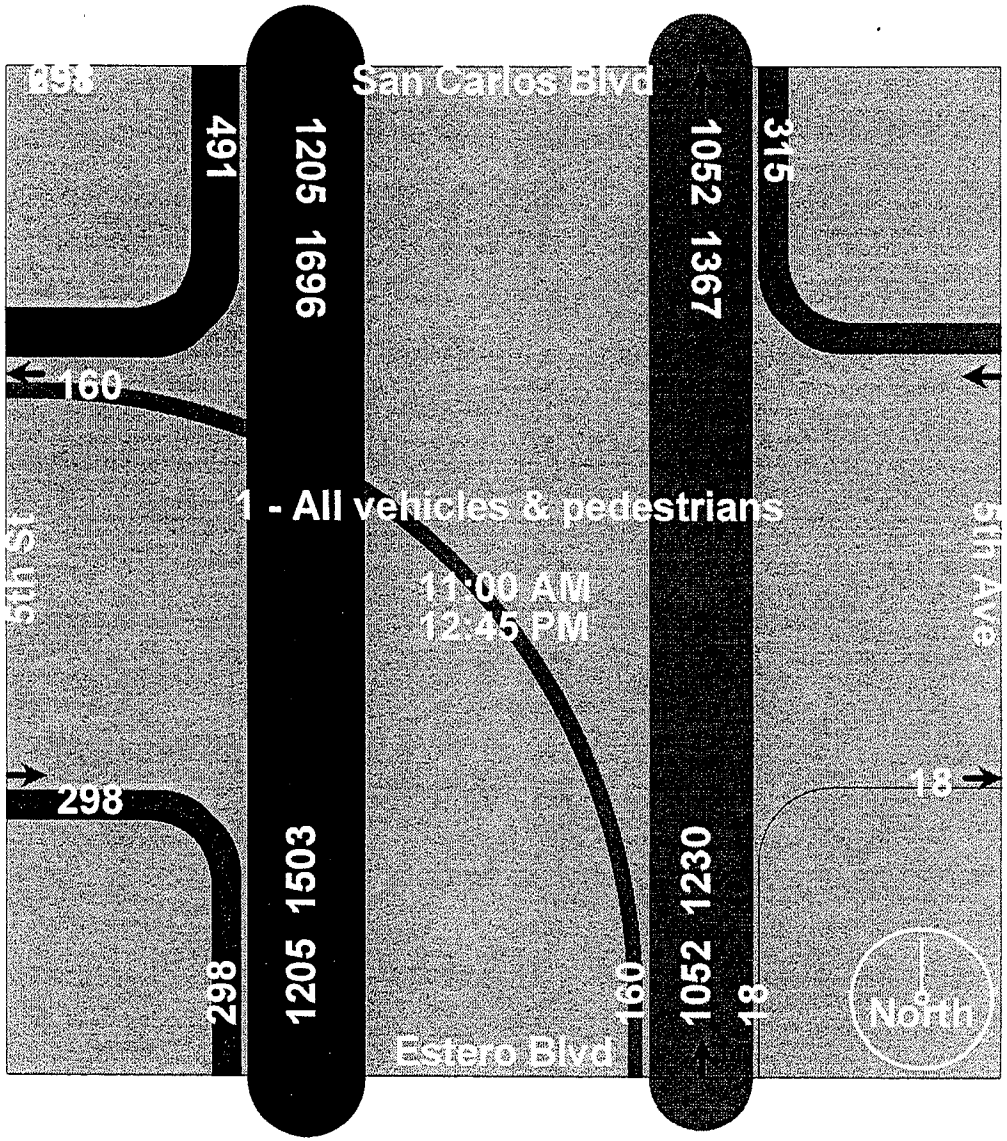


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 3



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmnr
Site Code : 00000001
Start Date : 12/21/1999
Page No : 4

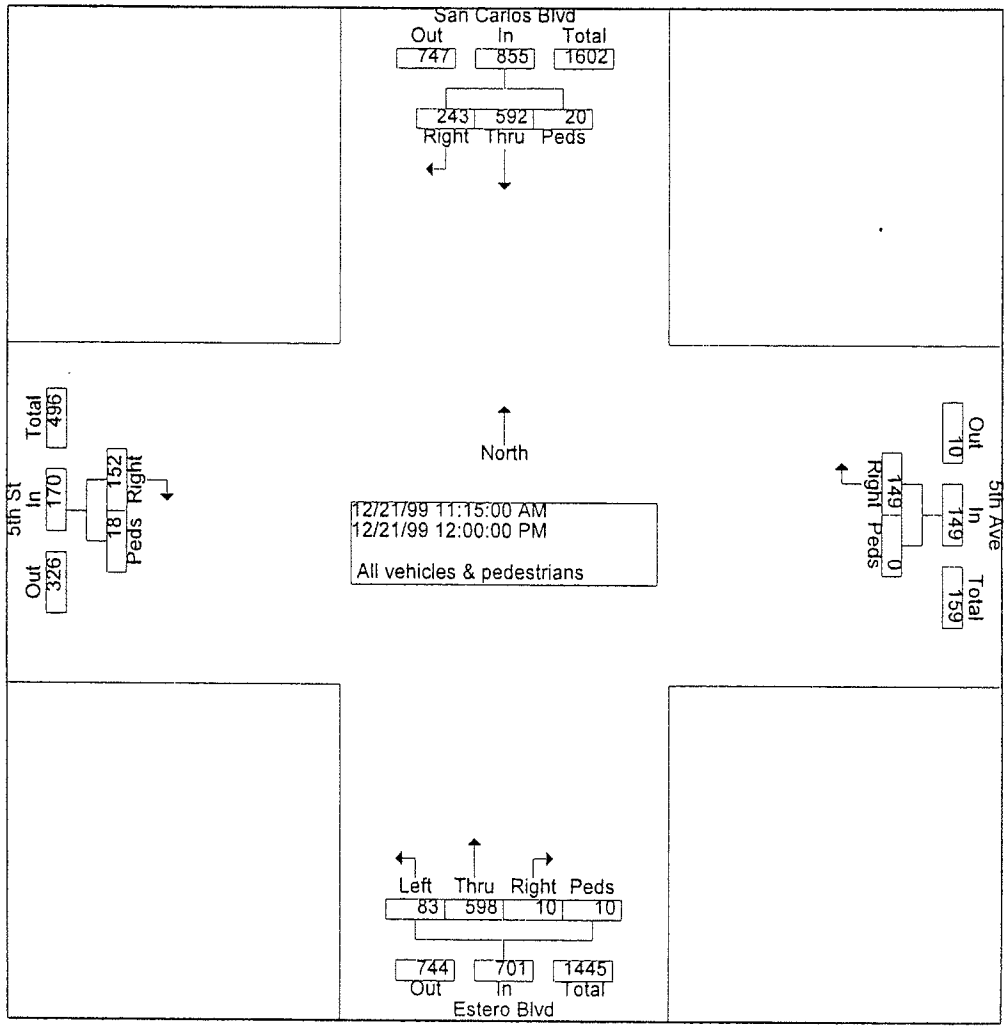
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds.	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 11:15 AM to 12:45 PM - Peak 1 of 1																
Intersection	11:15 AM															
Volume	592	243	20	855	149	0	149	83	598	10	10	701	152	18	170	1875
Percent	69.2	28.4	2.3		100.0	0.0		11.8	85.3	1.4	1.4		89.4	10.6		
12:00 Volume	165	64	6	235	32	0	32	22	158	6	1	187	37	5	42	496
Peak Factor																0.945
High Int.	12:00 PM				11:15 AM			12:00 PM					11:30 AM			
Volume	165	64	6	235	42	0	42	22	158	6	1	187	46	5	51	
Peak Factor				0.910			0.887					0.937			0.833	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmnr
Site Code : 00000001
Start Date : 12/21/1999
Page No : 5

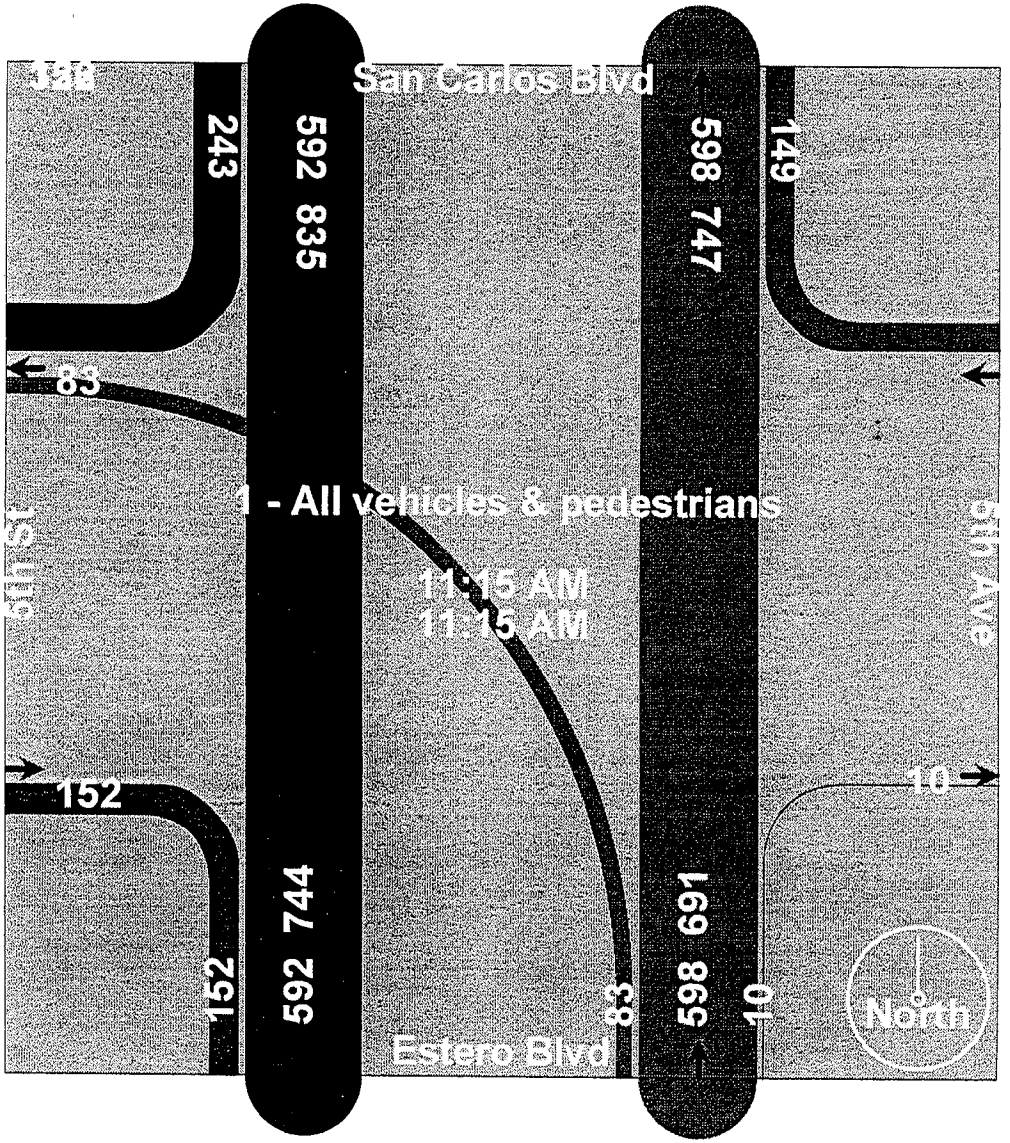


Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

Estero Blvd at Times Square

Turning Movement Counts

File Name : esteroblvdmnr
Site Code : 00000001
Start Date : 12/21/1999
Page No : 6



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 7

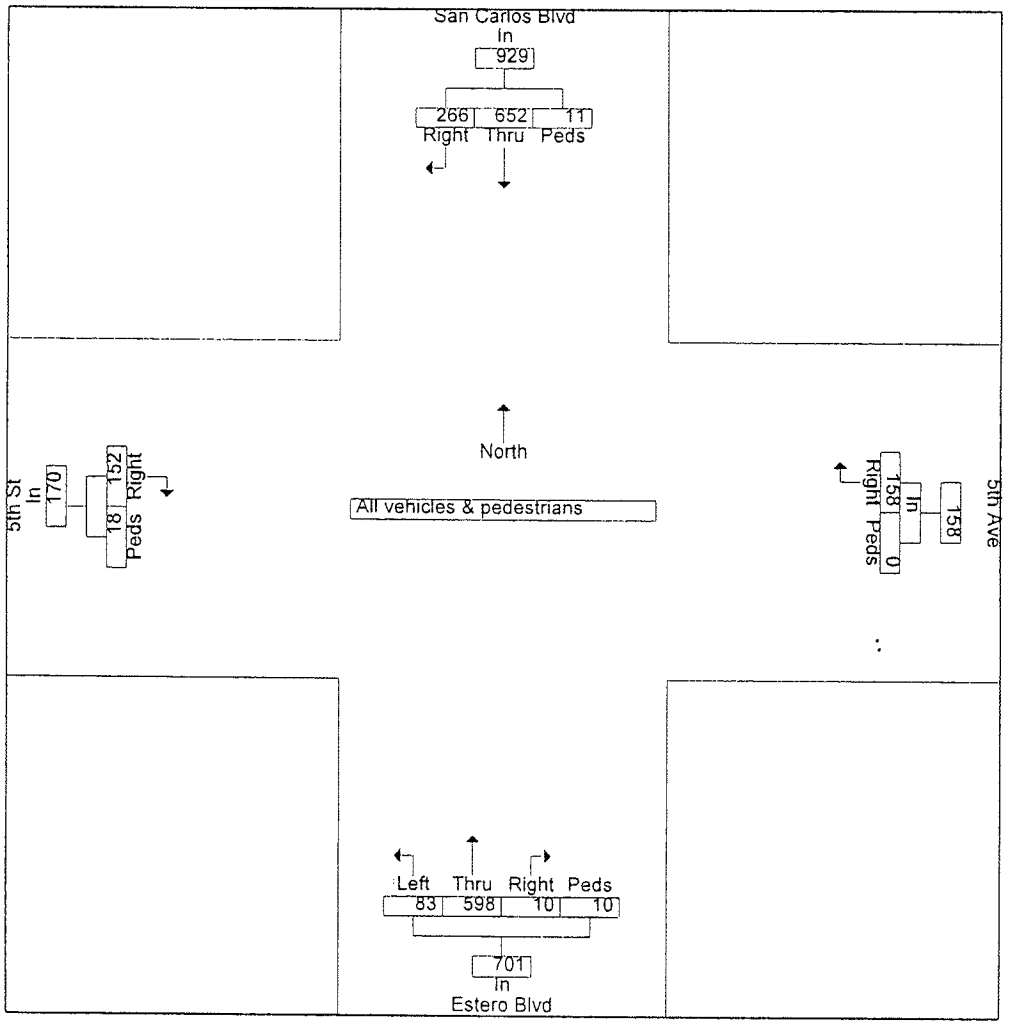
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 11:15 AM to 12:45 PM - Peak 1 of 1																
By Approach	11:45 AM				12:00 PM			11:15 AM					11:15 AM			
Volume	652	266	11	929	158	0	158	83	598	10	10	701	152	18	170	
Percent	70.2	28.6	1.2		100.0	0.0		11.8	85.3	1.4	1.4		89.4	10.6		
High Int.	12:00 PM				12:15 PM			12:00 PM					11:30 AM			
Volume	165	64	6	235	46	0	46	22	158	6	1	187	46	5	51	
Peak Factor				0.988			0.859					0.937			0.833	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmni
Site Code : 00000001
Start Date : 12/21/1999
Page No : 8

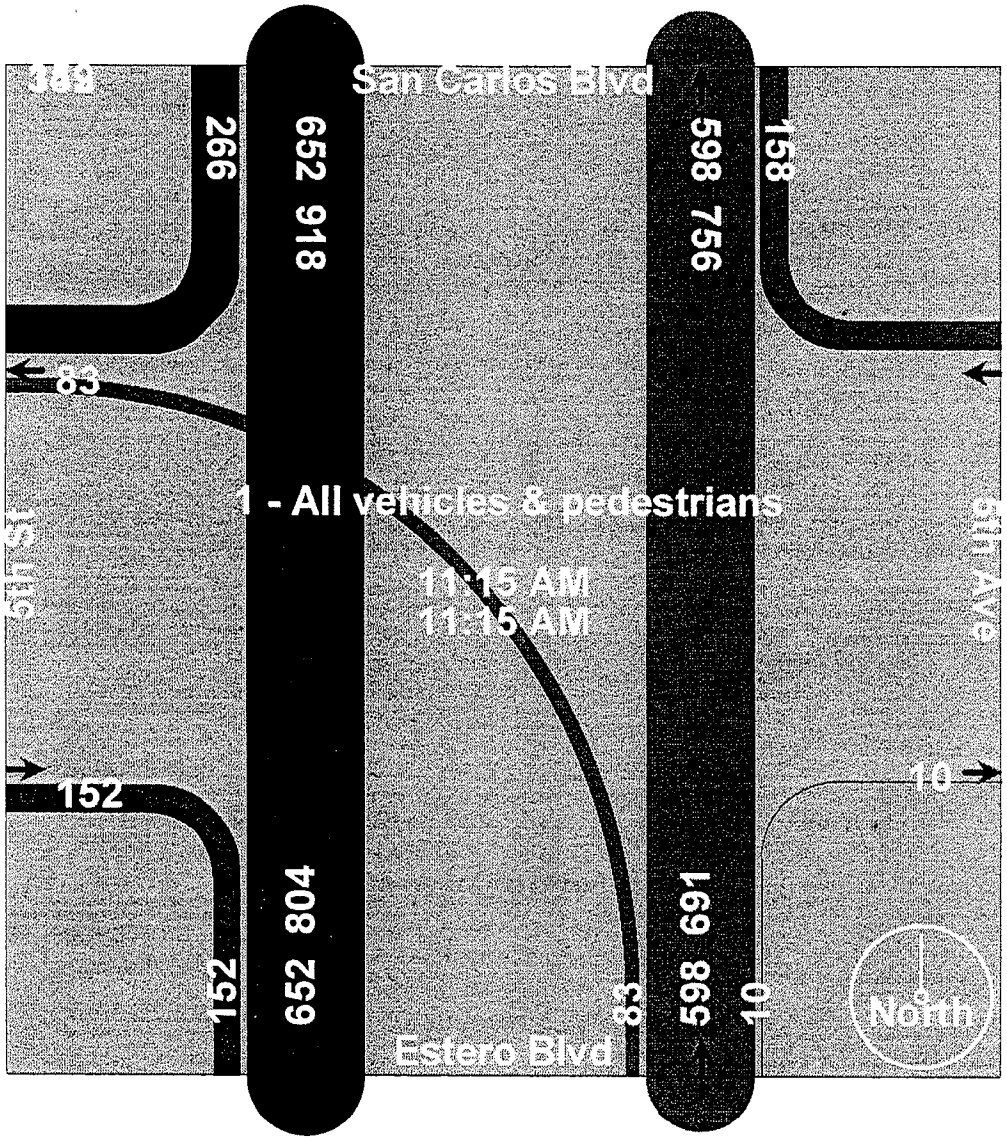


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

File Name : esteroblvdmn
Site Code : 00000001
Start Date : 12/21/1999
Page No : 9

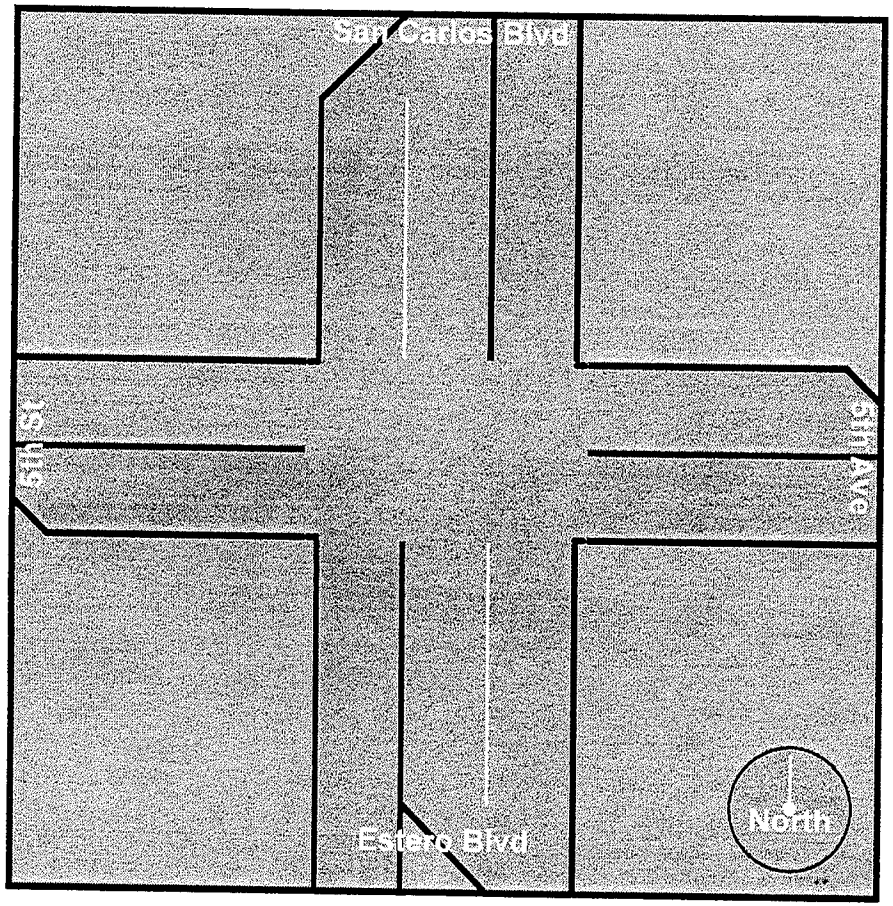


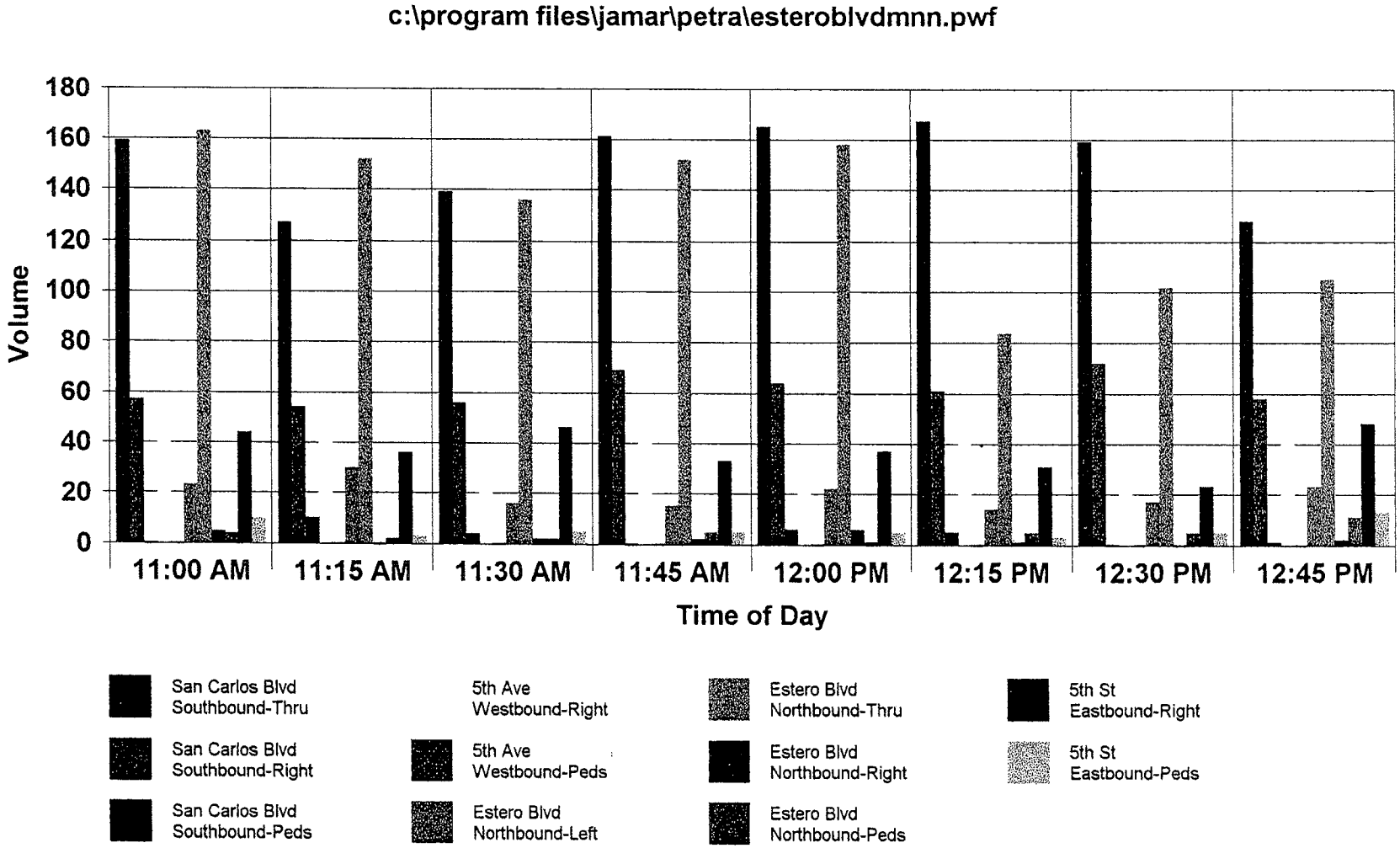
Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Clear
Time: 11AM-1PM

Estero Blvd at Times Square

Turning Movement Counts

File Name : esteroblvdmnl
Site Code : 00000001
Start Date : 12/21/1999
Page No : 10




c:\program files\jamar\petra\esteroblvdmnn.pwf
Volume
180
160
140
120
100
80
60
40
20
0
11:00 AM
11:15 AM
11:30 AM
11:45 AM
12:00 PM
12:15 PM
12:30 PM
12:45 PM
Time of Day
San Carlos Blvd Southbound-Thru
San Carlos Blvd Southbound-Right
San Carlos Blvd Southbound-Peds
5th Ave Westbound-Right
5th Ave Westbound-Peds
Estero Blvd Northbound-Left
Estero Blvd Northbound-Thru
Estero Blvd Northbound-Right
Estero Blvd Northbound-Peds
5th St Eastbound-Right
5th St Eastbound-Peds

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 1

Groups Printed- All vehicles & pedestrians

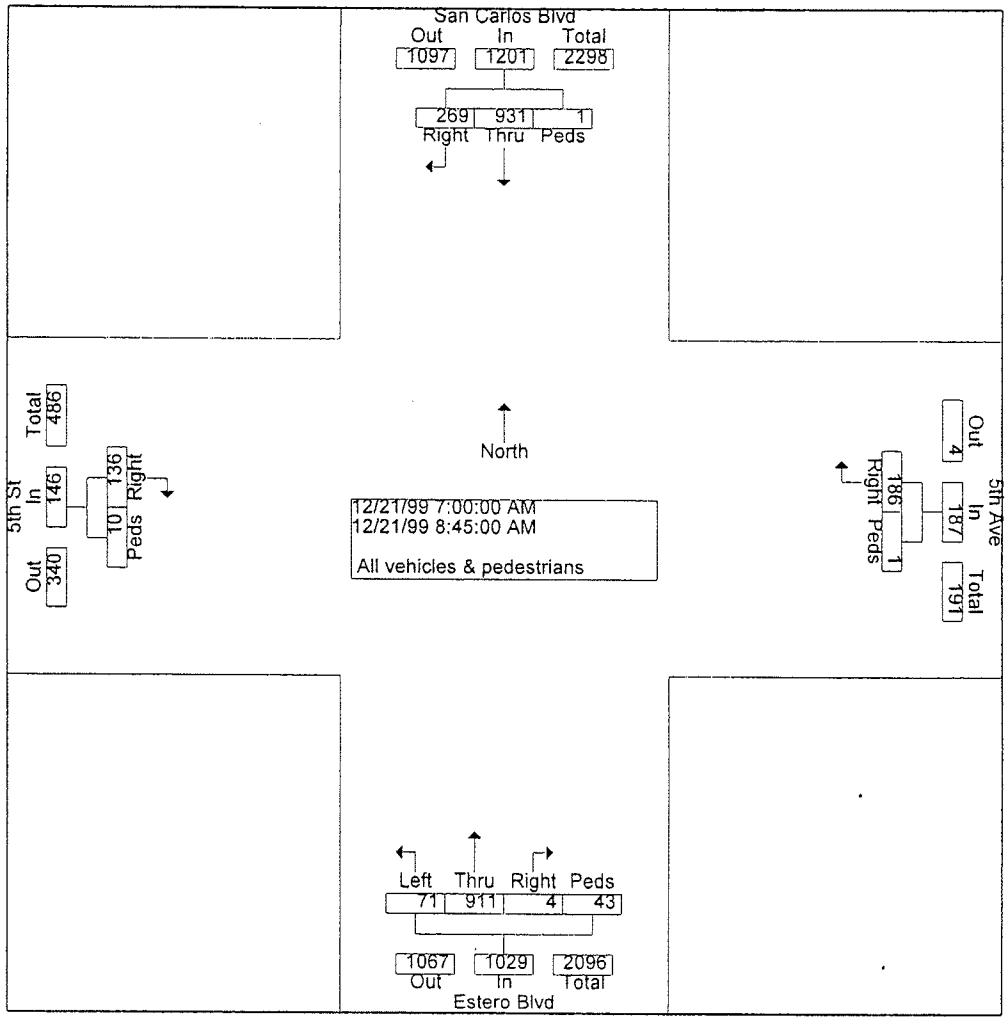
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0		
07:00 AM	97	15	0	112	13	0	13	7	92	0	2	101	12	0	12	238
07:15 AM	76	14	0	90	17	0	17	1	93	1	5	100	16	0	16	223
07:30 AM	135	24	0	159	13	1	14	8	113	1	6	128	10	2	12	313
07:45 AM	101	42	0	143	21	0	21	8	114	0	7	129	10	1	11	304
Total	409	95	0	504	64	1	65	24	412	2	20	458	48	3	51	1078
08:00 AM	124	39	0	163	35	0	35	11	98	0	9	118	17	3	20	336
08:15 AM	120	29	1	150	30	0	30	7	129	1	6	143	16	2	18	341
08:30 AM	150	48	0	198	30	0	30	13	136	0	5	154	30	0	30	412
08:45 AM	128	58	0	186	27	0	27	16	136	1	3	156	25	2	27	396
Total	522	174	1	697	122	0	122	47	499	2	23	571	88	7	95	1485
Grand Total	931	269	1	1201	186	1	187	71	911	4	43	1029	136	10	146	2563
Apprch %	77.5	22.4	0.1		99.5	0.5		6.9	88.5	0.4	4.2		93.2	6.8		
Total %	36.3	10.5	0.0	46.9	7.3	0.0	7.3	2.8	35.5	0.2	1.7	40.1	5.3	0.4	5.7	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 2

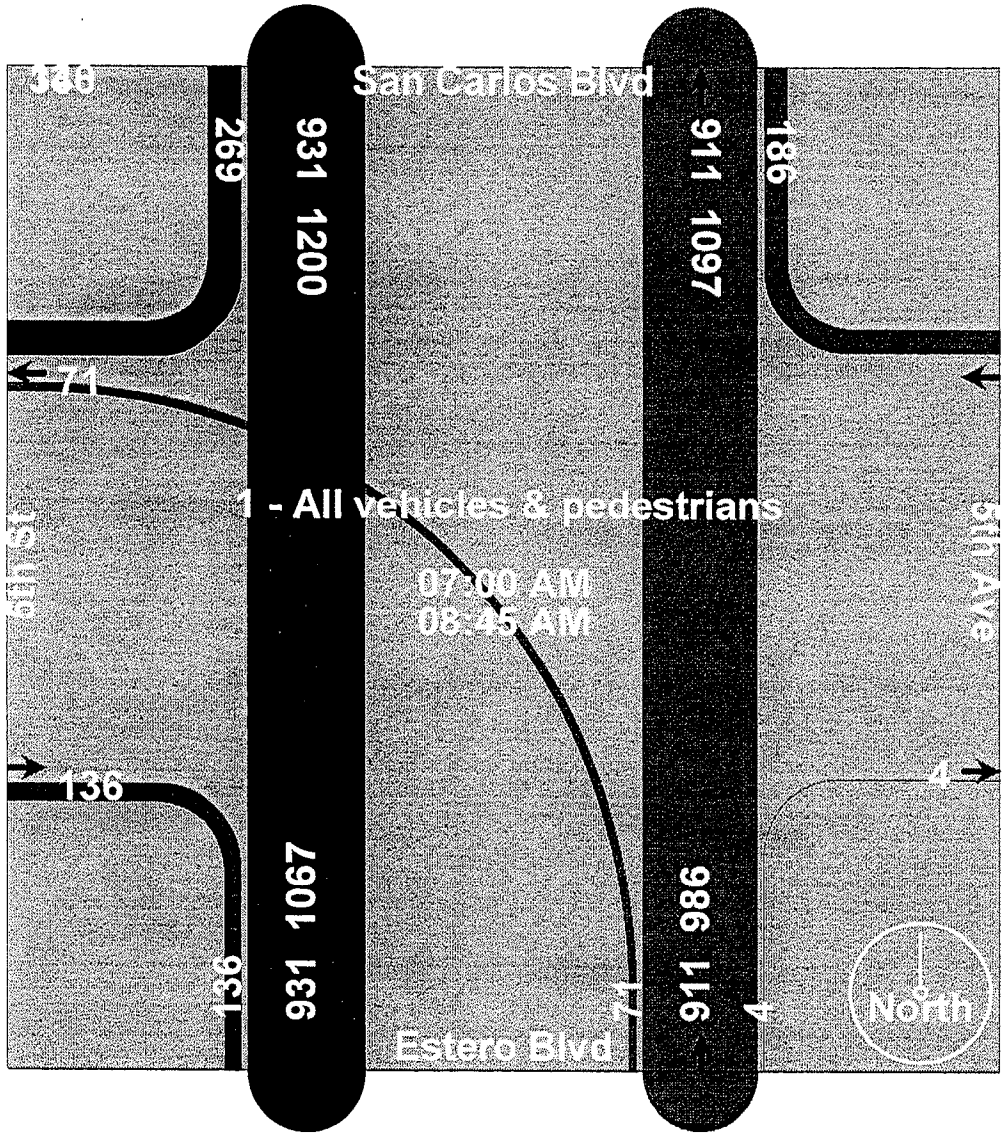


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 3



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 4

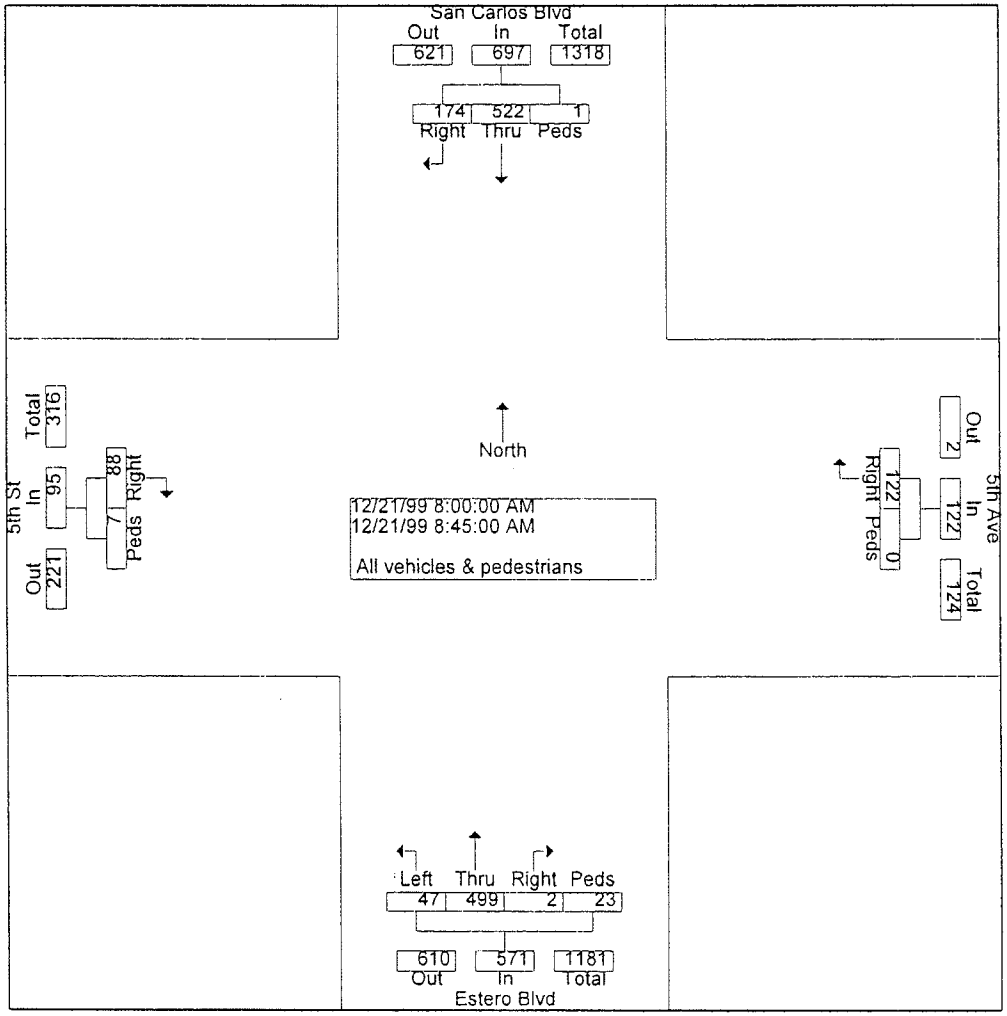
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																
Intersection	08:00 AM															
Volume	522	174	1	697	122	0	122	47	499	2	23	571	88	7	95	1485
Percent	74.9	25.0	0.1		100.0	0.0		8.2	87.4	0.4	4.0		92.6	7.4		
08:30 Volume	150	48	0	198	30	0	30	13	136	0	5	154	30	0	30	412
Peak Factor																0.901
High Int.	08:30 AM				08:00 AM			08:45 AM					08:30 AM			
Volume	150	48	0	198	35	0	35	16	136	1	3	156	30	0	30	
Peak Factor				0.880			0.871					0.915			0.792	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdman
Site Code : 00000001
Start Date : 12/21/1999
Page No : 5

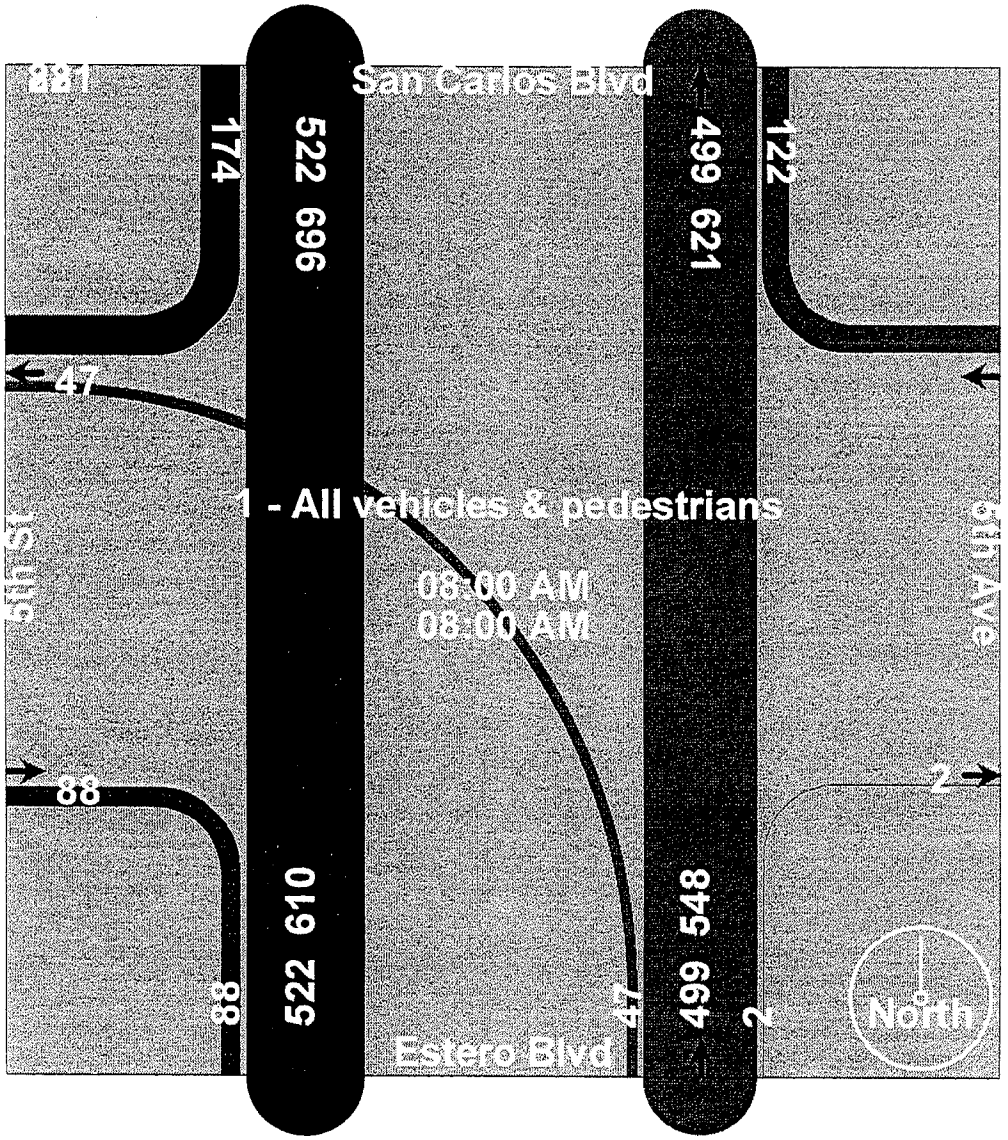


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 6



Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmam
Site Code : 00000001
Start Date : 12/21/1999
Page No : 7

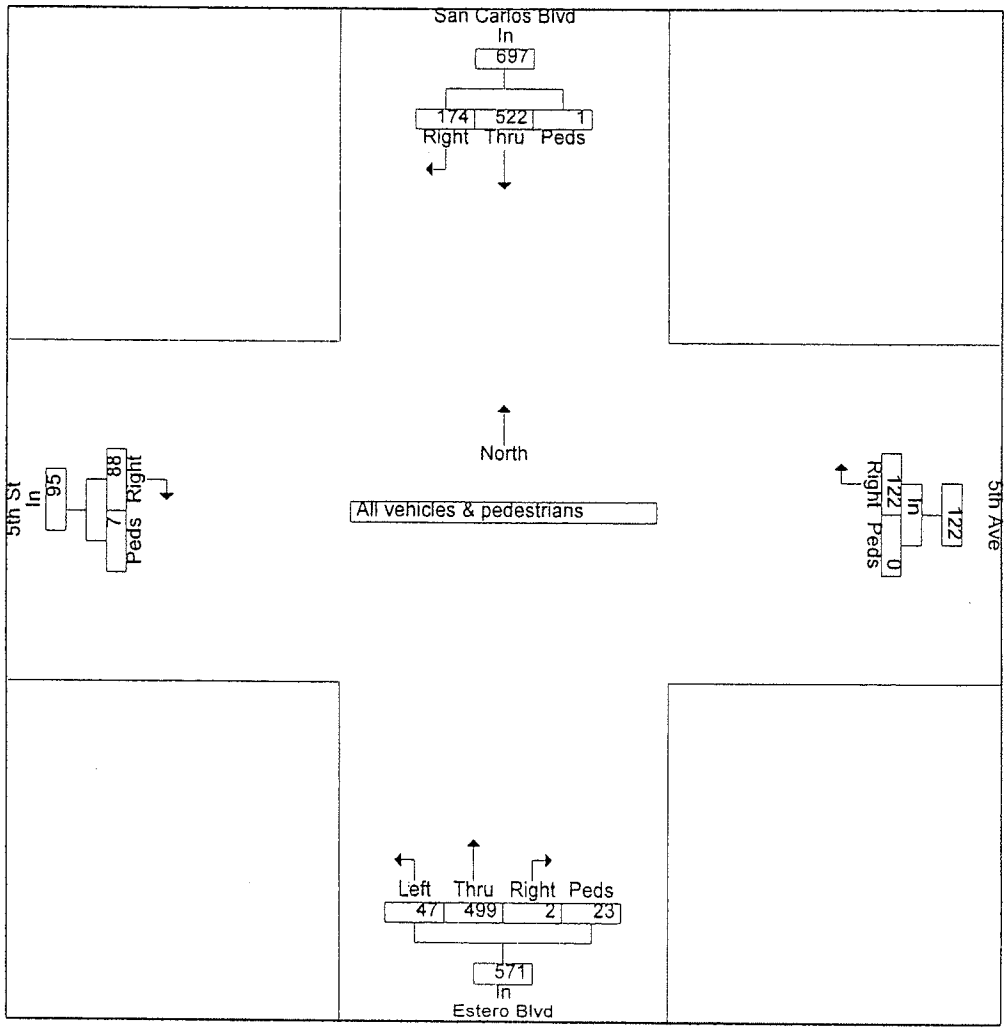
	San Carlos Blvd Southbound				5th Ave Westbound			Estero Blvd Northbound					5th St Eastbound			
Start Time	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Right	Peds	App. Total	Int. Total
Peak Hour From 07:00 AM to 08:45 AM - Peak 1 of 1																
By Approach	08:00 AM				08:00 AM			08:00 AM					08:00 AM			
Volume	522	174	1	697	122	0	122	47	499	2	23	571	88	7	95	
Percent	74.9	25.0	0.1		100.0	0.0		8.2	87.4	0.4	4.0		92.6	7.4		
High Int.	08:30 AM				08:00 AM			08:45 AM					08:30 AM			
Volume	150	48	0	198	35	0	35	16	136	1	3	156	30	0	30	
Peak Factor				0.880			0.871					0.915			0.792	

Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmar
Site Code : 00000001
Start Date : 12/21/1999
Page No : 8

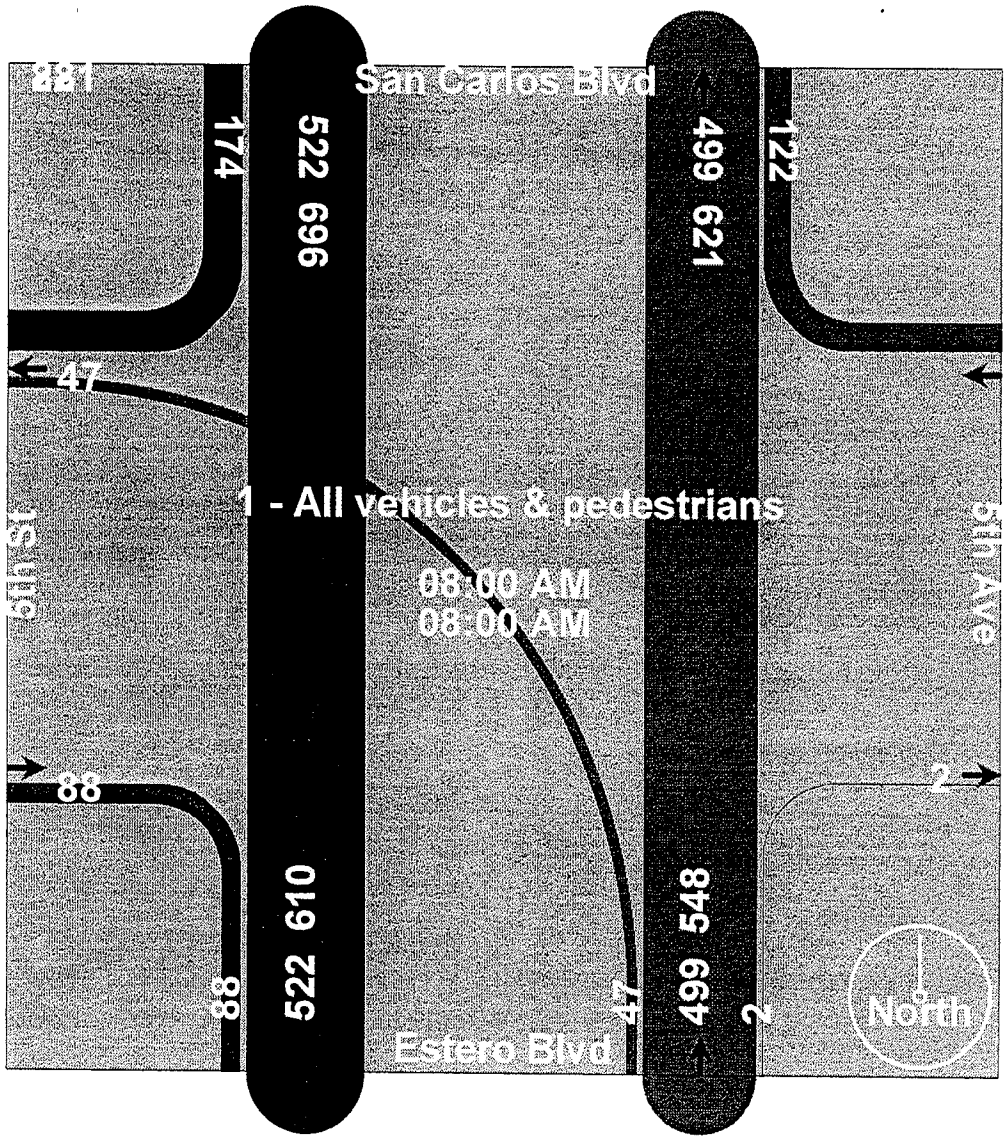


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdman
Site Code : 00000001
Start Date : 12/21/1999
Page No : 9

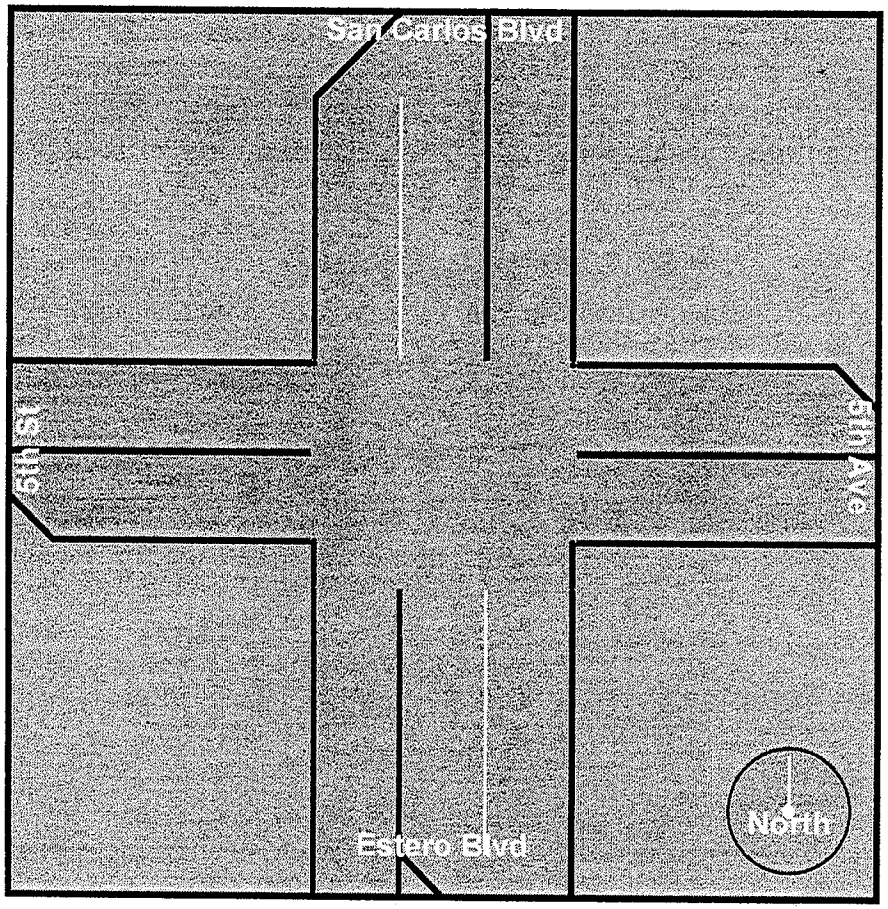


Estero Blvd at Times Square

Turning Movement Counts

Counter: JAMAR DB-400
Counted By: AMC / MOD
Weather: Rainy / overcast
Time: 7AM-9AM

File Name : esteroblvdmar
Site Code : 00000001
Start Date : 12/21/1999
Page No : 10



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