APPLICATION OF INNOVATIVE STRATEGIES TO IMPROVE BICYCLE SAFETY AND MOBILITY

PREPARED FOR

MIAMI-DADE MPO
Metropolitan Planning Organization

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The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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INTRODUCTION

With the invention of the automobile, street design shifted from the straight and connected grid patterns meant for pedestrian and horse-and-buggy speeds to focusing on the efficiency of car mobility and car speeds. The number and severity of crashes rose dramatically as designated space for bicyclist was basically non-existent and the speed and size of the different street users varied widely. Bicycle traffic began to receive cursory mention within engineering manuals in the 1970s as social change including environmental awareness and the energy crisis planted the seeds for modern interest in bicycling.

Through proven education, encouragement, and engineering techniques, crash rates have decreased over time and bicycling use is on the rise in the United States. However, bicyclists are still vulnerable road users who experience fatality rates significantly higher than the general mix of road users. In general, the bicyclists that ride in-road regardless of roadway conditions are classified as "strong and fearless" and are comfortable operating a bicycle intermixed with high traffic volumes and fast speeds according to a classification system based on research conducted by the Portland Bureau of Transportation and Portland State University. However, the majority of bicyclists prefer designated facilities and local streets with slow vehicular speeds. This tends to limit the number of destinations that they can comfortably reach given the current disconnected local street network and lack of bicycle facilities prevalent in many areas. Therefore, more effort is needed to create truly bicycle-friendly infrastructure for all user types that enhances comfort, directness, accessibility, and safe traffic surroundings.

Proficient, "strong and fearless" bicyclists

The journey to work data for Miami-Dade County shows that only 0.5 percent of work trips are made by bicycle. For all purposes (commuting, shopping, recreation, etc.), only 1 percent of trips are made by bike. As vehicular congestion in Miami-Dade County continues to be a problem, decreasing the number of single-occupant vehicle trips is necessary to improve mobility.

Enhancing the safety of bicycling is imperative to shifting the modal share away from single-occupant vehicles. According to the National Household Travel Survey, nearly one-half of all trips in the United States are less than three miles in length and approximately 28 percent of trips are less than one mile. Yet less than one percent of all trips are made by bicycle according to United States Census data. Bicycling helps individuals address many modern public health concerns including obesity, stress, and anxiety disorders and can be a viable urban transportation mode when basic design principles are focused on comfort and convenience for bicyclists. Efforts to improve bicycle facilities can help towards the goal of increasing the modal share of bicycle commuting. With this in mind, bicycling has the potential to serve a much greater proportion of trips in Miami-Dade County than it currently does.

Bicyclist on the South Dade Trail

Miami-Dade County's momentum toward becoming a bicycle-friendly community is building through events such as the completion of new trail and bike lane projects, the MPO's Dutch "ThinkBike" workshop and subsequent tour of bikeway design in the Netherlands, and the expansion of the DecoBike shared bike system. Nationally, support for innovative bicycle facilities has received a boost from the National Association of City Transportation Officials (NACTO), who published the "Urban Bikeway Design Guide", which is bursting with renderings, examples, and photos depicting how to implement innovative bicycle facilities within the context of guidelines that are sensitive to national traffic engineering and roadway design standards. Even from an international level, assistance received from Dutch experts at the two-day "ThinkBike" workshop has led to the Dutch "Design Manual for Bicycle Traffic" (a.k.a. The CROW Manual) appearing on the desks of key engineers and planners who desire robust bicycle facility implementation.

Participants in the MPO's Dutch "ThinkBike" workshop bicycling along NE 17th Terrace

Communities across the country and internationally are implementing innovative bicycle facility treatments in the interest of improving safety, increasing the usage of bicycles as a primary mode of transportation, and becoming more bicycle-friendly. These inventive treatments range from design elements at intersections to features along existing roadway corridors to separate bicycle trails and paths. In the last 5 years, the City of Portland has been installing bike boxes at numerous signalized intersections to help prevent dangerous "right-hook" collisions and improve awareness and visibility of cyclists. This treatment has been successfully utilized in Northern Europe for over two decades. Another advanced bicycle facility treatment that was developed in Europe and is starting to emerge around the country is advisory bike lanes. The centerline of a low-volume two-lane roadway with parking on both sides in Minneapolis, Minnesota was removed to create advisory bike lanes. The new dashed pavement markings give bicyclists a designated space to ride, while still giving motorists the ability to pass oncoming traffic. The concept of cycle tracks can be applied in several ways including on-street, raised, and two-way cycle tracks. The Sands Street bikeway in Brooklyn, New York is an example of a two-way, center-median, protected cycle track.

Bike box treatment at a signalized intersection in Portland, Oregon

Advisory bike lanes on East 14th Street in Minneapolis, Minnesota

Sands Street bikeway in Brooklyn, New York

STUDY OBJECTIVE

The overall goal of this initiative is to increase bicycle mode share and reduce bicycle crash rates in Miami-Dade County through the provision of innovative strategies that emulate the Dutch bicycling experience and the facilities provided in the NACTO "Urban Bikeway Design Guide." The objective of this Project is to apply those innovative solutions to urban bicycle transportation access, mobility, and safety problems in Miami-Dade County.

This study will identify transportation corridors and intersections that are not served by existing or planned bicycle facilities as well as existing and planned bicycle facilities that could benefit from a more robust and innovative design. This study will include a comprehensive, detailed Action Plan that specifically describes the steps needed for implementation of various innovative bicycle strategies, including steps for formal FHWA "Request to Experiment" if necessary, and also describes how the improvements are based on sound engineering principles.

Bicyclists riding comfortably side by side in a Dutch cycle track

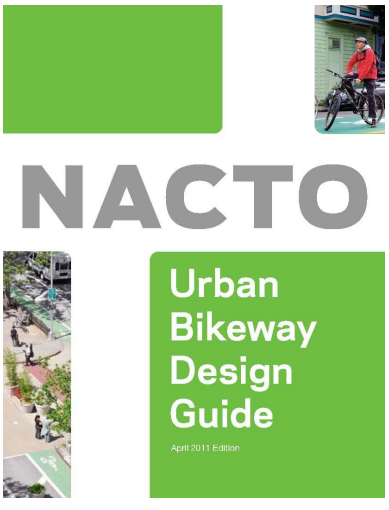
LITERATURE RESEARCH

An examination of international, national, state, and local literature was conducted to identify innovative bicycle facility design solutions that could reasonably be implemented in Miami-Dade County. The following data sources, studies, and plans were reviewed as part of this effort. A brief summary of the review of each item is included.

- NACTO "Urban Bikeway Design Guide"
- Dutch "Design Manual for Bicycle Traffic"
- BIKESAFE: Bicycle Countermeasure Selection System
- FHWA's International Technology Scan of Pedestrian and Bicyclist Safety and Mobility in Europe
- Miami-Dade MPO Transportation Improvement Program (TIP)
- Miami-Dade MPO 2035 Long Range Transportation Plan (LRTP)
- FHWA's "Request to Experiment (RTE)" Process
- Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program
- Advisory Bike Lanes
- From the Netherlands to America: Translating the World's Best Bikeway Designs
- OTREC's Evaluation of Bike Boxes at Signalized Intersections
- Manual on Uniform Traffic Control Devices

NACTO "Urban Bikeway Design Guide"

The National Association of City Transportation Officials (NACTO) published the "Urban Bikeway Design Guide", which illustrates state-of-the-practice bicycle transportation facility design solutions from the best cycling cities in the world. The designs are based on the concept that unique urban streets require innovative solutions that go beyond a more minimal approach found in many national and state standards and guidelines. The NACTO Guide illustrates through renderings, photos, case studies, and descriptive text, how the bicycle facilities in the "Urban Bikeway



Design Guide" are based on the principles found in national street/highway design guidelines and the Manual on Uniform Traffic Control Devices (MUTCD), but also how they are tailored to meet unique design challenges in urban environments.

The NACTO Guide was developed based on an extensive national and international literature search from design guidelines and real-world experiences. A panel of urban bikeway planning professionals worked with traffic engineers, planners, and academics with deep experience in urban bikeway applications to develop the NACTO Guide and to ensure that it is based on sound engineering principles.

The intent of the NACTO Guide is to offer substantive guidance for cities seeking to improve bicycle transportation in places where competing demands for the use of the right-of-way present unique challenges. The Guide details state-of-the-practice design treatments that are used in the world's most bicycle friendly cities including:

- Bike Lanes
  - Conventional Bike Lanes
  - Buffered Bike Lanes
  - Contra-Flow Bike Lanes
  - Left-Side Bike Lanes

- Cycle Tracks
    - One-Way Protected Cycle Tracks
    - Raised Cycle Tracks
    - Two-Way Cycle Tracks
- Intersections
    - Bike Boxes
    - Intersection Crossing Markings
    - Two-Stage Turn Queue Boxes
    - Median Refuge Island
    - Through Bike Lanes
    - Combined Bike Lane/Turn Lane
    - Cycle Track Intersection Approach
- Bicycle Signals
    - Bicycle Signal Heads
    - Signal Detection and Actuation
    - Active Warning Beacon for Bike Route at Unsignalized Intersection
    - Hybrid Signal for Bike Route Crossing of Major Street
- Bikeway Signing and Marking
    - Bike Route Wayfinding Signage and Markings System
    - Colored Bike Facilities
    - Shared Lane Markings

Each treatment addressed in the NACTO Guide offers three levels of guidance:

- Required – Elements for which there is a strong consensus that the treatments cannot be implemented without.
- Recommended – Elements for which there is a strong consensus of added value.
- Optional – Elements that vary across cities and may add value depending on the unique situation.

In all cases, the solutions require engineering judgment to ensure that the application makes sense for the context of each treatment given the many complexities of urban streets.

Dutch "Design Manual for Bicycle Traffic"

The Dutch "Design Manual for Bicycle Traffic" was produced by CROW, the national information and technology platform for infrastructure, traffic, transport and public space in the Netherlands. The design manual details the needed steps to create a bicycle-friendly infrastructure and begins with a description of the role of the bicycle in the Netherlands. The national government requires that all municipal authorities encourage the bicycle as the principal means of transportation. With a mode share of approximately 25 percent of all trips, the bicycle is the most popular means of transportation after the car. For shorter trips, up to 5.0 km, this mode share increases to 35 percent. The manual states that a bicycle-friendly infrastructure enables cyclists to make direct, comfortable bicycle trips in attractive, safe traffic surroundings, which is necessary for the bicycle to compete with the car in the modal split. To achieve this, planners and designers need to study the cyclist as the future user of the design, define the goals, and balance function, form and use. This results in a creative challenge requiring more than the use of template designs and in turn thinking of the consequences of a design. The design manual lists the five main requirements needed for a bicycle-friendly infrastructure as cohesion, directness, attractiveness, safety, and comfort. These requirements are based upon the following characteristics:

- Perception and the ability to ride side by side
- Minimization of resistance
- Optimization of mental capacity
- Vulnerability of the cyclists
- Need for a complete, comprehensible bicycle infrastructure

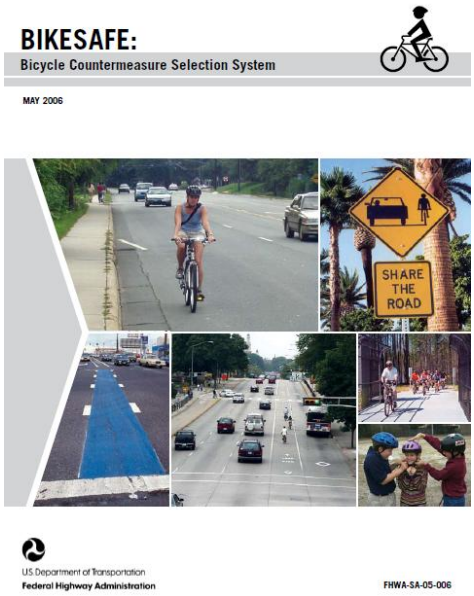
In general, if the minimum level for one of the main requirements is not met, the infrastructure should be modified. The manual goes on to address other considerations and the main requirements in detail for each type of bicycle facility.

BIKESAFE: Bicycle Countermeasure Selection System

The BIKESAFE: Bicycle Countermeasure Selection System was produced by the Federal Highway Administration (FHWA) in May 2006. BIKESAFE provides practitioners with tailored information for improving the safety and mobility of bicyclists by computing bicycle treatments based on user-specified conditions such as site characteristics, geometric features, operating conditions, the type

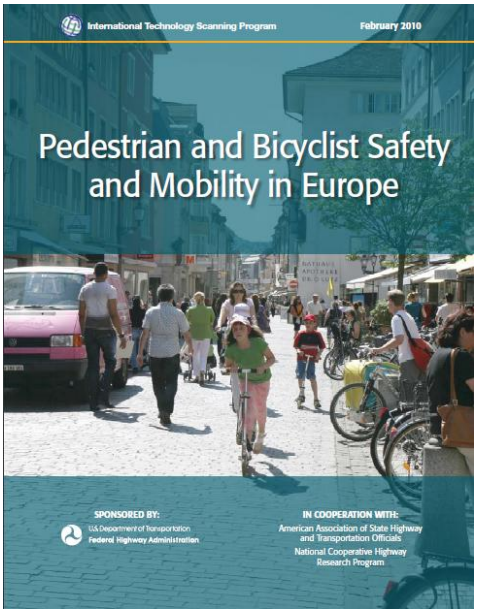
of safety problem to be overcome, and even desired behavioral changes. Several tools are available with BIKESAFE including the following.

- Selection Tool – Find appropriate countermeasures on the basis of desired objectives.
- Interactive Matrices – View the countermeasures associated with crash types and performance objectives.
- Countermeasures – Read descriptions of the 50 engineering, education, and enforcement treatments.
- Case Studies – Review real-world examples of implemented treatments.



FHWA's International Technology Scan of Pedestrian and Bicyclist Safety and Mobility in Europe

The Miami-Dade MPO participated in the Federal Highway Administration's (FHWA's) International Technology Scan of Pedestrian and Bicyclist Safety and Mobility in Europe. In May 2009, a team of twelve transportation professionals from around the United States with expertise in bicycling and walking visited five countries in Europe to identify and assess effective approaches to improve pedestrian and bicyclist safety and mobility. The team focused on innovative approaches to non-motorized transportation and the potential transferability of policies and practices. Key findings were developed based on the "Five E" approach – engineering, education, enforcement, encouragement, and evaluation. Many of the innovative design practices observed could be used to improve bicycle safety and mobility including:



- Engineering:
  - Cycle tracks
  - Cycle paths

  - Cycle paths on independent alignments
  - Advance stop lines for bikeways
  - Leading green phase for bicyclists
  - Bike boxes
  - Bicycle traffic signals
  - Colored bike lanes
  - Advisory bike lanes
  - Signal timing for bicyclists
  - Low-speed street designs
  - Integration of biking with public transit
- Education:
  - Traffic safety education programs for children
  - Traffic safety education programs for adults
  - Education and awareness programs for motorists
- Enforcement:
  - Photo enforcement at traffic signals
  - Photo enforcement of speed limits
- Encouragement:
  - Route and wayfinding signs
  - Web-based route and destination planning tools
  - Marketing campaigns
  - Shared and rental bike programs
  - Free public-use bikes (city bikes)
  - Free hotel guest use bikes
  - Bicycle service facilities
  - Improved bicycle parking
  - Bike barometers
- Evaluation:
  - Regular performance reports on bicyclist safety and mobility

Miami-Dade MPO Transportation Improvement Program (TIP)

The Miami-Dade MPO prepares the annual Transportation Improvement Program (TIP) consistent with federal guidelines. The TIP in effect at the time of this Plan is the FY 2013/14 to FY 2017/18 TIP approved by the Miami-Dade MPO Governing Board on May 23, 2013. The TIP specifies proposed transportation improvements to be implemented in Miami-Dade County over the coming five years. The TIP was reviewed to determine programmed projects where innovative bicycle solutions could be applied. Programmed projects are depicted in Table 1.

Table 1: Miami-Dade MPO TIP

FM Number	Location	From	To	Improvement	Year*
DT2512655	Biscayne Trail Seg C	SW 328 St	Black Point	Bike Path/Trail	2014
DT2512656	Old Cutler Trail	SW 136 St/SW 62 Ave	Cartagena Plaza	Bike Path/Trail	2014
DT2512657	Biscayne Trail Seg D	SW 328 St/SW 137 Ave	Homestead Bayfront Park	Bike Path/Trail	2016
DT2512715	Middle Beach Recreation - PH1	47 St	53 St Including Beach View Pa	Bike Path/Trail	2015
DT2512716	North Beach Corridor	Various Bike Path Links		Bike Path/Trail	2015
DT4183342	Miami River Greenway	Miami Circle Greenway	South Miami Avenue	Bike Path/Trail	2014
DT4209171	Overtown Greenway	NW 3 Ave	NW 7 Avenue	Bike Path/Trail	2014
DT4319022	SR 112/Julia Tuttle	Eastbound Off-Ramp		Bike Path/Trail	2014
DT4324091	NE 183 Street	NW 11 Avenue	NW 19 Avenue	Bike Path/Trail	2015
DT4324101	NW 52 Street	NW 97 Avenue	NW 107 Avenue	Bike Lane/Sidewalk	2015
	NW 102 Avenue	NW 41 Street	NW 58 Street		
PW000725	Commodore Trail Bikeway	SW 42 Avenue	Aviation Avenue	Improve existing bath and new pedestrian bridge	2014
PW000747	NE 16 Avenue	NE 123 Street	NE 135 Street	Widening with Bike Lane	2014
PW000306a	NE 2 Avenue	NE 20 Street	NE 36 Street	Oper. Imp. with Bike Lane	2014
PW000443	NE 2 Avenue	NE 42 Street	NE 51 Street	Oper. Imp. with Bike Lane	2014
PW000444	NE 2 Avenue	NE 57 Street	NE 69 Street	Oper. Imp. with Bike Lane	2014
PW000445	NE 2 Avenue	NE 69 Street	West Little River Canal	Oper. Imp. with Bike Lane	2014
PW000315b	SW 27 Avenue	US 1	Bayshore Drive	Widening with Bike Lane	2015
PW20040343	SW 137 Avenue	US 1	SW 200 Street	Completion with Bike Lane	2015
PW20040344	SW 137 Avenue	HEFT	US 1	Widening with Bike Lane	2016
PW000442	Caribbean Boulevard	Coral Sea Road	SW 87 Avenue	Widening with Bike Lane	2014
PW20040349	SW 176 Street	US 1	SW 107 Avenue	Oper. Imp. with Bike Lane	2016
PW20040348	SW 216 Street	HEFT	SW 127 Avenue	Oper. Imp. with Bike Lane	2017
PW20040350	SW 264 Street	US 1	SW 137 Avenue	Oper. Imp. with Bike Lane	2016
PW20040390	NW 87 Avenue	NW 154 Street	NW 186 Street	Widening with Bike Lane	2015
PW0000149	SW 268 Street	US 1	SW 112 Street	Widening with Bike Lane	2018

* Project completion date

Miami-Dade MPO 2035 Long Range Transportation Plan (LRTP)

The Miami-Dade Metropolitan Planning Organization (MPO) updates their LRTP every five years per federal legislation requirements. The LRTP outlines expenditures for surface transportation programs including highways, transit, safety, research and freight. The current LRTP is for long term planning horizon 2035. The 2035 LRTP was adopted by the MPO Governing Board late 2009. The plan addresses several transportation improvements, including mobility, safety, security, economic vitality, environment, connectivity, and system preservation. The plan identified several projects that are candidate projects where innovative solutions could be applied. Table 2 and Table 3 summarize these projects.

Table 2: Miami-Dade 2035 LRTP Cost Feasible Plan
Non-Motorized Projects

Facility	From	To	Description
Atlantic Trail	44th Street	46th Street	Trail Improvements
Atlantic Trail	South Pointe Park	5th Street	Trail Improvements
Atlantic Trail (except portion between 44th and 46th Street)	23rd Street	64th Street	Trail Improvements (Design)
Beachwalk Greenway/5th Street	South end of Lummus Park	South of Washington Avenue	Trail Improvements
Biscayne Trail	Black Point Park	SW 280th Street	Trail Improvements
Biscayne Trail	Black Point Park	Biscayne National Park to US-1	Trail Improvements (PD&E Study)
Black Creek Trail "A"	Black Point Park	Larry and Penny Thompson Park	Trail Improvements
Black Creek Trail "B"	SW 184th Street	SW 144th Street	Trail Improvements
Commodore Trail	Coco Plum Circle	SW 27th Avenue	Trail Improvements
Dade Boulevard Bike Path	Venetian Causeway	Beachwalk	Bicycle Facility Improvements
Ludlam Trail	Dadeland North Station	NW 12th Street	Trail Improvements (PE)
Miami River Greenway	NW 12th Avenue	SE 2nd Avenue	Trail Improvements
Miami River Greenway	5th Street Bridge		Trail Improvements
M-Path Extension	Dadeland South Station	SW 67th Avenue	Trail Improvements
NE 135th Street	East of Biscayne Boulevard	Bayvista Boulevard at FIU	Bicycle Facility Improvements
NE 15th Avenue	NE 163rd Street	NE 186th Street	Bicycle Facility Improvements
NE 2nd Avenue	NE 20th Street	NE 36th Street	Bicycle Facility Improvements
NE 2nd Avenue	NE 36th Street	NE 43rd Street	Bicycle Facility Improvements
NE 2nd Avenue	NE 43rd Street	NE 62nd Street	Bicycle Facility Improvements
NE 2nd Avenue	NE 62nd Street	West Little River Canal/ NE 84th Street	Bicycle Facility Improvements
NW 74th Street	NW 107th Avenue	NW 84th Avenue	Bicycle Facility Improvements

Table 2: Miami-Dade 2035 LRTP Cost Feasible Plan
Non-Motorized Projects (Cont.)

Facility	From	To	Description
Old Cutler Road Path Phase 1	SW 224th Street	SW 136th Street	Trail Improvements
Overtown Greenway	NW 3rd Avenue	NW 7th Avenue	Trail Improvements
Snake Creek Trail	NW 17th Avenue/Turnpike	NW 186th Street	Trail Improvements
Snapper Creek Trail	K-Land Park/SW 88th Street	SW 72nd Street	Trail Improvements
SW 137th Avenue	US-1	SW 184th Street	Bicycle Facility Improvements
SW 137th Avenue	HEFT	US-1	Bicycle Facility Improvements
SW 137th Avenue	SW 184th Street	SW 152 Street	Bicycle Facility Improvements
SW 160th Street	SW 147th Avenue	SW 137th Avenue	Bicycle Facility Improvements
SW 176th Street	SW 107th Avenue	US-1	Bicycle Facility Improvements
SW 216th Street	SW 127th Avenue	HEFT	Bicycle Facility Improvements
SW 264th Street	US-1	SW 137th Avenue	Bicycle Facility Improvements
SW 27th Avenue	S Bayshore Drive	US-1	Bicycle Facility Improvements
SW 8th Street	HEFT	SR 826	Bicycle Facility Improvements
West Dixie Highway	NE 186th Street	Ives Dairy Road	Bicycle Facility Improvements
Federal Highway/NE 4th Court	NE 39th Street	NE 61st Street	Bicycle Facility Improvements (Restriping)
Miami River Greenway	NW 36th Street	NW 12th Avenue	Trail Improvements
M-Path Master Plan	Miami River	SW 37th Avenue	Trail Improvements
NE 61st Street	Biscayne Boulevard	NE 2nd Avenue	Bicycle Facility Improvements (Restriping)
NE 62nd Street	Biscayne Boulevard	NE 2nd Avenue	Bicycle Facility Improvements (Restriping)
North Miami Avenue	NW 14th Street	NW 20th Street	Bicycle Facility Improvements (Restriping)
North Miami Avenue	NW 14th Street	NW 5th Street	Bicycle Facility Improvements (Restriping)
NW 11th Street	NW 22nd Avenue	NW 27th Avenue	Bicycle Facility Improvements (Restriping)
NW 2nd Avenue	NW 20th Street	NW 79th Street	Bicycle Facility Improvements (Restriping)
NW 22nd Avenue	NW 36th Street	NW 183rd Street	Bicycle Facility Improvements (Restriping)

Table 2: Miami-Dade 2035 LRTP Cost Feasible Plan Non-Motorized Projects (Cont.)

Facility	From	To	Description
NW 23rd Avenue	NW 11th Street	NW 7th Street	Bicycle Facility Improvements (Restriping)
NW 35th Court	NW 11th Street	NW 7th Street	Bicycle Facility Improvements (Restriping)
NW 5th Avenue	NW 29th Street	NW 36th Street	Bicycle Facility Improvements (Restriping)
NW 5th Avenue	NW 4th Street	NW 11th Street	Bicycle Facility Improvements (Restriping)
Snapper Creek Trail	North of 56th Street	SW 8th Street	Trail Improvements
Snapper Creek Trail "B"	SW 94th Avenue	SW 57th Avenue	Trail Improvements (PD&E Study)
South Miami Avenue	SW 14th Terrace	SW 12th Street	Bicycle Facility Improvements (Restriping)
South Miami Avenue	SW 6th Street	SW 3rd Street	Bicycle Facility Improvements (Restriping)
SW/NW 1st Avenue	SW 2nd Street	NW 20th Street	Bicycle Facility Improvements (Restriping)
SW 137th Avenue	SW 72nd Street	SW 56th Street	Bicycle Facility Improvements (Restriping)
SW 2nd Avenue	SW 15th Road	SW 8th Street	Bicycle Facility Improvements (Restriping)
SW 25th Road	Brickell Avenue	Coral Way	Bicycle Facility Improvements (Restriping)
SW 3rd Avenue	US-1	SW 22nd Street	Bicycle Facility Improvements (Restriping)
SW 32nd Road	Vizcaya Metrorail Station	Coral Way	Bicycle Facility Improvements (Restriping)
SW 32nd Road	Brickell Avenue	Vizcaya Pedestrian Bridge	Bicycle Facility Improvements (Restriping)
SW 72nd Avenue	SW 4th Street	W Flagler Street	Bicycle Facility Improvements (Restriping)
Tamiami Canal Road	SW 8th Street	NW 7th Street	Bicycle Facility Improvements (Restriping)
Tamiami Canal Road	West Flagler Street	SW 8th Street	Bicycle Facility Improvements (Restriping)
Bike Boulevard Demo Project	NW 32 Avenue/NW 41 Street	NW 11 Avenue/Little River Drive	Bike Boulevard improvements
Biscayne Trail "C"	SW 280th Street	SW 328th Street	Trail Improvements
M-Path Master Plan	SW 37th Avenue	SW 67th Avenue	Trail Improvements
NW/NE 131st Street	NW 22nd Avenue	NE 16th Avenue	Bicycle Facility Improvements
Overtown Greenway (except portion between NW 3rd and 7th Avenue)	Miami River Greenway	Bicentennial Park	Trail Improvements

Table 2: Miami-Dade 2035 LRTP Cost Feasible Plan
Non-Motorized Projects (Cont.)

Facility	From	To	Description
Snapper Creek Trail	North of SW 56th Street	SW 72nd Street	Trail Improvements
Atlantic Trail (except portion between 44th and 46th Street)	23rd Street	64th Street	Trail Improvements
Biscayne Trail "D"	SW 97th Avenue	US-1	Trail Improvements
Ingraham Highway	SW 376th Street	SW 392nd Street	Bicycle Facility Improvements
Old Cutler Road Path Phase 2	SW 136th Street	SW 88th Street	Trail Improvements
SW 192nd Avenue	SW 344th Street	SW 376th Street	Bicycle Facility Improvements
SW 344th Street	SW 192nd Avenue	NW 6th Avenue	Bicycle Facility Improvements
SW 376th Street	Ingraham Highway	SW 192nd Avenue	Bicycle Facility Improvements
SW 392nd Street	Ingraham Highway	Everglades National Park	Bicycle Facility Improvements
SW 48th Street	SW 117th Avenue	SW 82nd Avenue	Bicycle Facility Improvements

Table 3: Miami-Dade 2035 LRTP Cost Feasible Plan
Priority I through IV and Congestion Management Improvements

Facility	From	To	Description
Parking expansion at Opa-Locka Tri-Rail station	Opa-Locka Tri-Rail Station		Opa-Locka Tri-Rail station parking improvements
41st Street	Atlon Road	Collins Avenue	Corridor improvements
One-waying of South Beach Local Streets			Capacity improvements

FHWA's "Request to Experiment" Process

The FHWA's "Request to Experiment (RTE)" process allows for changes to existing traffic control devices or the addition of new ones to the Manual on Uniform Traffic Control Devices (MUTCD), or at least an FHWA Interim Approval (IA). A brief summary of the RTE process is provided below.

- Requests must be initiated by the agency responsible for managing/maintaining the roadway or the controlled setting where the experiment will take place. That agency

forwards the RTE to the FHWA with a copy to the FHWA Division Office (in this case, Tallahassee).

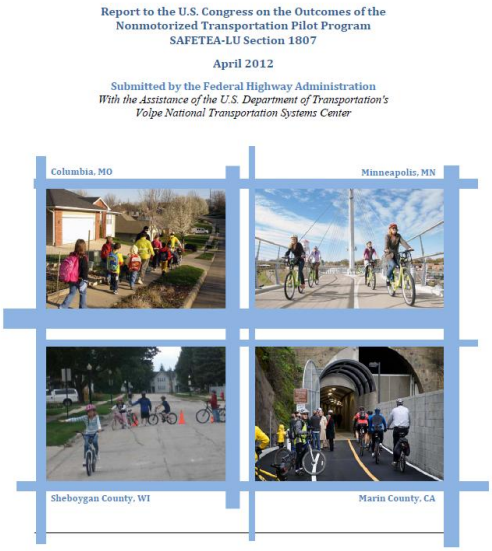
- RTEs must include the following items.
  - A statement of the nature of the problem, including data that justifies the need for a new device or application.
  - Describe the proposed change and how it deviates from the current MUTCD and supporting data that explains how the experimental device was developed, if it has been tried, the adequacy of its performance, and the process by which the device was chosen.
  - A legally binding statement certifying that the concept of the traffic control device is not protected by a patent or copyright.
  - The proposed time period and location(s) of the experiment.
  - A detailed evaluation plan.
  - An agreement to restore the experimental site to a condition that complies with the provisions of the MUTCD within three months following completion of the experiment. The agreement must also provide that the agency will terminate the experiment at any time if it determines that the experiment directly or indirectly causes significant safety hazards.
  - If the experiment demonstrates an improvement, the device or application may remain in place as a request is made to update the MUTCD and an official rulemaking action occurs.
  - An agreement to provide semiannual progress reports for the duration of the experimentation and to provide a copy of the final results to the FHWA Office of Transportation Operations within three months of the conclusion of the experiment.
- FHWA must formally approve the experiment before it begins

Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program

The FHWA's Report to the U.S. Congress on the Outcomes of the Nonmotorized Transportation Pilot Program (NTPP) details and evaluates the effect of the infrastructure, educational, and promotional strategies implemented as part of the demonstration program to encourage a shift in travel behavior towards nonmotorized modes of transportation in the four pilot communities of

Columbia, Missouri; Marin County, California; Minneapolis, Minnesota; and Sheboygan County, Wisconsin. The project investments related to bicycle infrastructure included:

- Off-road shared-use paths
- On-street bicycle lanes
- On-street shared-lane markings (sharrows)
- Bicycle parking
- Colored bicycle lanes in conflict areas
- Low-traffic roads designed to give priority to bicyclists
- Wayfinding pavement markings for bicyclists
- Bicycle rack cost-sharing program
- Bicycle parking corrals
- Rail-with-trail
- Bicycle detection at traffic signals
- Bicycle boulevards
- Road diets with bike lanes
- Bike-sharing/bicycle library
- Radio frequency identification bicycle validation system
- Cycle tracks
- Bike boxes with advance stop lines
- "Bicycles May Use Full Lane" signs



The program was evaluated on both a project-level and community-wide basis. A few of the bicycle facility-related infrastructure projects that were chosen to be evaluated and the identified impacts are:

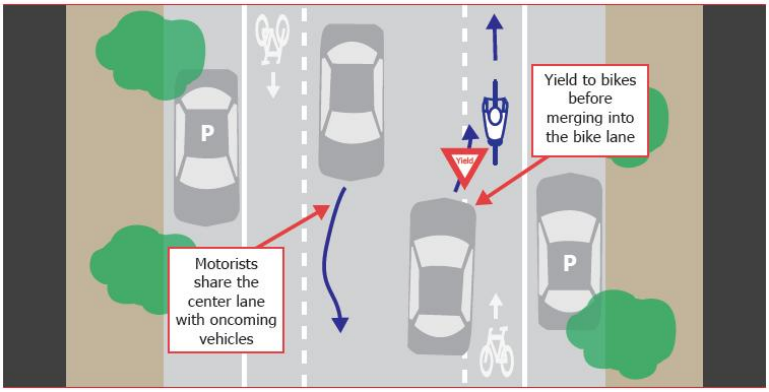
- Windsor/Ash Bicycle Boulevard (Columbia, Missouri)– 124 percent increase in bicycle traffic, 4 percent decrease in motor vehicle traffic, and 7 percent decrease in average vehicle speeds from April 2009 to April 2011
- Cal Park Hill Tunnel - rail with trail project (Marin County, California) – Reduced bicycle trip time by 15 minutes, and increased weekday bicyclists four-fold from September 2010 to May 2011

- Alameda del Prado bicycle lanes (Marin County, California) – Increased weekday peak hour bicycle traffic by 366 percent and weekend peak hour bicycle traffic by 540 percent from 2007 to 2010
- Medway Road Improvements - shared lane markings (Marin County, California) – Increased weekday peak hour bicycle traffic by 7 percent and weekend peak hour bicycle traffic by 203 percent from 2007 to 2010
- Marshall Avenue, Saint Paul - network gap closure added a bicycle lane on one side and "Bicycle May Use Full Lane Signs" to the other side (Minneapolis, Minnesota) – Increased April to July monthly average two hour counts of bicyclists by 42 percent from 2009 to 2011
- Nice Ride Bicycle Sharing - public bicycle sharing program (Minneapolis, Minnesota) – Over 100,000 rides in the first season, 23 percent of which would have otherwise been made by car

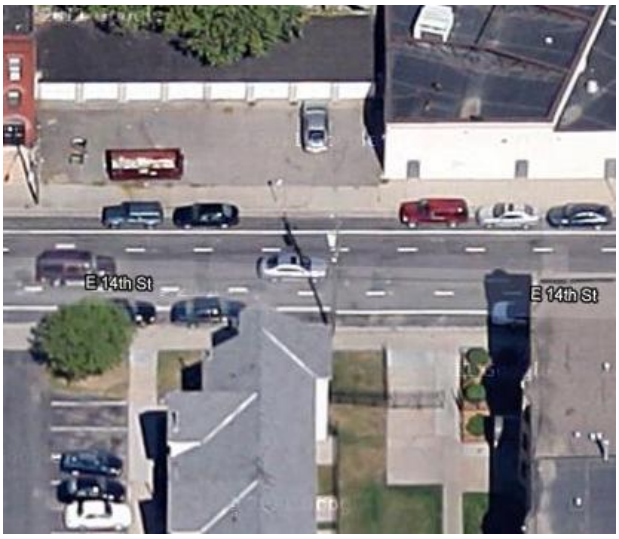
The community-wide evaluations were based on several types of counts, surveys, and modeling techniques. The results of the counts show that the four pilot communities saw a 49 percent increase in the number of bicyclists from 2007 to 2010. On average, people in the pilot communities made 4.7 more utilitarian bicycle trips, for an average total of 10.7 miles, in 2010 than in 2007. For the four pilot communities in sum, the bicycling mode share increased 0.4, the walking mode share increased 1.8, and the driving mode share decreased 2.2 from 2007 to 2010, which outpaced the national average from 2001 to 2008. In 2010, an estimated 16 million miles were walked or bicycle that would have otherwise been driven in the four pilot communities.

Advisory Bike Lanes

The concept of advisory bike lanes was reviewed from two existing applications of the treatment. In Suffolk, England and Minneapolis, Minnesota, the centerline of the roadways were removed and dashed advisory bike lanes were added to each direction. This treatment allows motor vehicles to travel in either direction down the middle of the roadway and the ability to merge into the advisory bicycle lane to pass vehicles traveling in the opposite



direction after yielding to passing bicyclists. The addition of advisory bike lanes can increase the level of comfort for bicyclists. The pictures from Google Maps below depict the lane markings on East 14th Street in Minneapolis before and after the removal of the centerline and addition of the advisory bike lanes.



The street view image on the left shows the previous two-lane roadway with parking on both sides. The aerial view image on the right shows the redesigned two-way roadway with advisory bike lanes and parking on both sides. For the case in Suffolk, the number of bicyclists on the roadway per day increased from 150 before the addition of advisory bike lanes to 183 after and the average daily traffic of the roadway dropped from 5,600 to 4,500 vehicles per day.

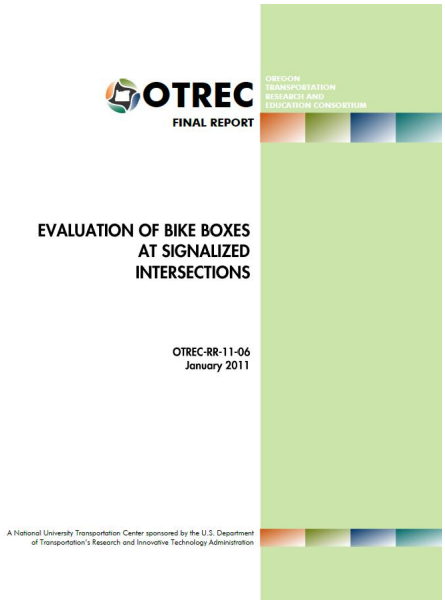
From the Netherlands to America: Translating the World's Best Bikeway Designs

This video created by Street Films in association with Green Lane Project documents the Transportation Leadership Study Tour in the Netherlands taken by representatives from Chicago, Miami-Dade, and Washington, DC, in November of 2011. The study tour consisted of meetings with local transportation officials and hands on, in the field experiences in seven Dutch cities; Amsterdam, Groningen, Nijmegen, Rotterdam, Tilburg, Utrecht, and Zwolle. The video begins with commentary on how the Netherlands developed a strong bicycle culture. Hillie Talens, the Project Manager for Traffic, Transportation and Public Space for the Dutch Bicycle Council, explains that oil crisis and high level of traffic fatalities in the 1970s motivated the Dutch people to find a cheaper, healthier way of traveling. Today, 27 percent of all trips in the Netherlands are by bike. The

representatives on the tour saw that, in general, bicycle facilities in the Netherlands have clearer separation from motor vehicles when speeds are high and little to no separation when speeds are low. At some crossings, the bicycle facilities are underneath the motor vehicle roadway. Bicycle facilities often have colored pavement in the Netherlands. In several cities, the representatives observed bicycle signals with countdowns. In Utrecht, they learned that 85 percent of children ride to school by bike. The citizens of Groningen know that it is easier and cheaper to bike the city center than it is by car. The video concludes with the idea that bicycling leads to the Dutch being "healthier and happier everyday".

OTREC's Evaluation of Bike Boxes at Signalized Intersections

The Oregon Transportation Research and Education Consortium (OTREC) and the City of Portland funded this study to evaluate cyclists' and motorists' understanding and compliance with the 12 bike box treatments installed at signalized intersections in the central core of Portland, Oregon along with their effect on safety and whether the green color of some of the bike boxes makes a difference. The analysis consisted of motorist and cyclist surveys and before-and-after video data. At least 86 percent of motorists had an understanding of the bike boxes based on the survey data. The video data showed that before the installation of the bike boxes, 77 percent of motorists stopped at the appropriate position at the stop bar prior to the crosswalk, and after the installation 73 percent of motorists stopped at the appropriate position at the stop bar prior to the bike box. At intersection approaches with bike boxes, 73 percent of cyclists stopped ahead of the motor vehicle stop line as they should. Only 5 percent of cyclists stopped in the bike box directly in front of where a motor vehicle would stop; however, they were more likely to stop there when other cyclists were already



waiting in that area. The video data also showed that the percentage of cyclists who arrived on a red signal and encroached on the crosswalk decreased from 41 percent to 25 percent after the installation of the bike boxes. The analysis on the effect of the bike boxes on safety found that the number of conflicts decreased after the installation of the bike boxes and that drive yielding behavior increased. Similarly, the survey results showed that both motorist and cyclist perceptions of safety improved with the installation. The analysis on the differences between the green colored versus no-color bike boxes found that green colored locations experienced decreased motor vehicle encroachment in the bike lane prior to arriving at the intersection and appeared to encourage cyclists to stop ahead of the motor vehicle stop line. When comparing the green colored and no-color locations, there was no substantial difference in the frequency of conflicts. The green colored bike boxes were preferred over the no-color bike boxes by 90 percent of the motorists surveyed.

Manual on Uniform Traffic Control Devices

The Federal Highway Administration (FHWA) publishes the Manual on Uniform Traffic Control Devices (MUTCD) to define the national standards for installing and maintaining traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic. As communities nationwide are focusing on increasing the usage of bicycles as a primary mode of transportation, the FHWA is receiving more inquiries about what bicycle facilities, signs, and markings are permitted in the MUTCD. Due to these inquires, the FWHA has posted a table on their Bicycle and Pedestrian Program website that lists different bicycle-related signs, markings and other treatments and identifies their status within the MUTCD. This table, shown in Appendix A, demonstrates that most innovative bicycle facilities are either:

(A) Able to be implemented at this time

(B) Considered experimental and local agencies can implement them if they follow the FHWA's Request for Experimentation process

(C) Not considered a traffic control device; the MUTCD places no restrictions on its use

However, a few of the bicycle facility treatments listed in the table, such as defining orange pavement markings for temporary traffic control usage, are not allowed by the MUTCD and no experiments are being conducted regarding these treatments.

ESSENTIAL PLANNING PRINCIPLES

When designing bikeways there are several essential principles that planners and engineers should keep in mind:

- Bicyclists should have safe, convenient, and comfortable access to all destinations.
- Every street is a bicycle street, regardless of whether a designated bicycle facility or bicycle route is present.
- Street design should accommodate all types, levels, and ages of bicyclists.
- Bicyclists should be separated from pedestrians, except under special circumstances such as shared-use pathways or shared-space streets.
- Bikeway facilities should take into account vehicle speeds and volumes, with
    - Shared use on low volume, low-speed roads.
    - Separation on higher volume, higher-speeds roads.
- Bikeway treatments should provide clear guidance to enhance safety for all users.
- Since most bicycle trips are short, a complete network of designated bikeways has a grid spacing of roughly ½ mile.

As stated in Florida Statue 316.2065, bicyclists operate a vehicle and are legitimate road users. However, they are slower and less visible than motor vehicles. Bicyclists should be the primary design parameter in bikeway facilities. Bicycling requires both the physical and mental capacities of the bicyclist. The following characteristics of bicyclists and the bicycle vehicle should be foremost in mind by all planners and engineers when designing bicycle-friendly networks and facilities:

- Bicyclists power the bicycle through muscle power. Therefore, bicycle-friendly design keeps energy loss to a minimum.
- Bicycling is a social activity. Therefore, bicycle-friendly design allows bicyclists to ride side-by-side.
- The bicycle has no crumple zone and offers no

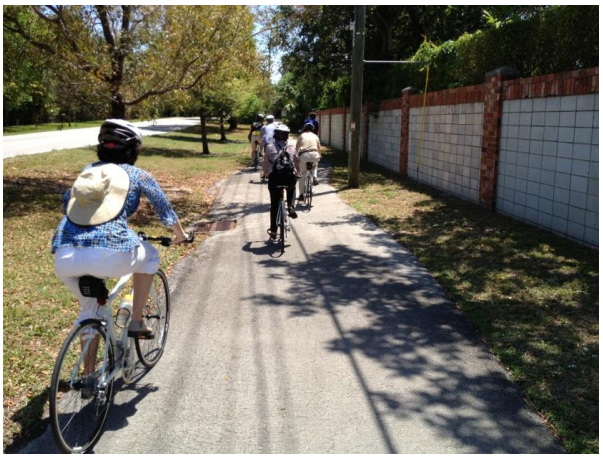
Bicyclists riding side-by-side on the M-Path

protection in a crash. Therefore, bicyclists are more vulnerable in a crash than motorists.

- Most bicycles have very little suspension and bicycle tires puncture easier than motor vehicle tires. Therefore, a smooth road surface relatively free of debris is a minimum condition.
- Bicyclists ride in the open air. Therefore, planners and designers should take note of the attractiveness of the surroundings in which the bicyclists rides.
- People are the key factor. Therefore, the designer should respect the limitations of less experienced and less able-bodied road users.

Varied bicyclist skill levels provide a wide range of speeds and expected behaviors. Bicycle infrastructure should use planning and designing options, from shared roadways to separate facilities, to accommodate as many user types as possible and to provide a comfortable experience for the greatest number of cyclists.

A classification system developed by the City of Portland, Oregon, provides four bicycle user types that range from "strong and fearless" bicyclists who will ride anywhere regardless of roadway conditions to "no way, now how" people that are not even considered cyclists as they perceive severe safety issues with riding in traffic and will never ride a bicycle in traffic under any circumstances. The "strong and fearless" cyclists consists of a nominal percentage of the population while the "no way, no how" group of people consist of about a quarter to a third of the population.



Less-experienced bicyclists prefer separate paths

In addition to the different bicycle skill levels, children must be considered when planning bicycle facilities. Whether riding on their own or with their parents, children may not travel as fast as their adult counterparts. However, they still require access to key destinations in their community, such as schools, recreational facilities, and friends' homes. It is essential for children bicyclists to have

access to these locations via shared-use paths linked with low-speed residential streets and well-defined pavement markings between bicycles and motor vehicles on busier streets. These types of facilities can accommodate children bicyclists without compelling them to ride in the travel lanes of major arterials.

Schoolchildren often need better facilities for walking and bicycling to school

TOOLBOX STRATEGIES

A toolbox of various innovative bicycle strategies was developed for this study. The strategies listed in the toolbox are flexible and will help to design bicycle facilities that will meet the requirements and issues at specific locations.

It is anticipated that the strategies in the toolbox may need to be modified as detailed designs for facilities are developed in collaboration with local communities and cyclists. This toolbox should be viewed as a guideline, not a rule, for implementing innovative bicycle strategies. The specific elements needed to incorporate innovative bicycle strategies must be tailored to the unique conditions of each location.

A summary of the toolbox is presented in Table 4. The strategies listed in the toolbox can be implemented independently or cooperatively. The combined impact of the toolbox strategies is far greater than any single strategy alone.

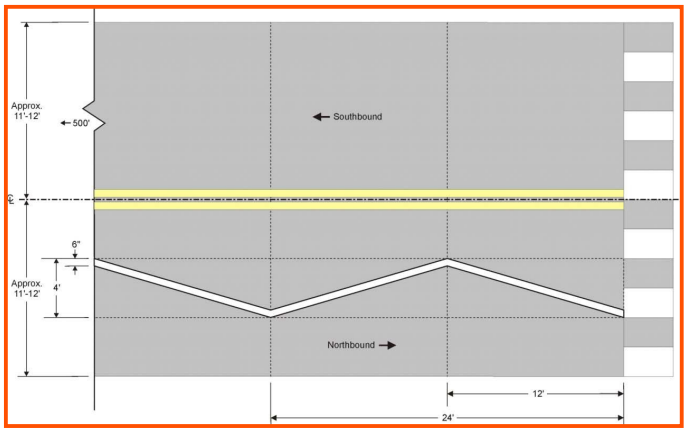
Table 4: Toolbox Summary

ENGINEERING	
1.	Zig-Zag Lane Lines at Trail Crossings
2.	Right-Turn Only Except Bicycles
3.	Bike Boxes
4.	Two-Stage Turn Queue Boxes
5.	Traffic Signal with Bike Detection Loops
6.	Bicycle Wayfinding Signs
7.	Bicycle Surface Treatment on Open Grate Bridges
8.	Shared Space
9.	Shared Lane Markings (Sharrows)
10.	Bicycle Boulevard
11.	Pedestrian Streets
12.	Advisory Bike Lanes
13.	Green Bike Lanes
14.	Buffered Bike Lanes
15.	Cycle Tracks
16.	Low Speed Zone
17.	14-Foot Lane Treatments
18.	Contraflow Bike Lanes
19.	Grade Separation
20.	Road Diet
21.	Shared Bus and Bike Lane
ENCOURAGEMENT	
22.	Integration of Bikes and Transit
23.	Inclusion of Cycling Options in Non-Cycling Events
24.	Open Streets or Ciclovia Events
25.	Promotion Campaign Based on Fun and Joy of Cycling
26.	Online Bike Route Planner
27.	Bike Barometer
EDUCATION	
28.	Traffic Garden
29.	Anti-Dooring Campaign
30.	Courtesy Counts Campaign
ENFORCEMENT	
31.	Online Bicycle Registration
32.	Speed Enforcement on Bicycle Corridors
EVALUATION	
32.	Data Collection Plan
33.	Bike Program Progress Report

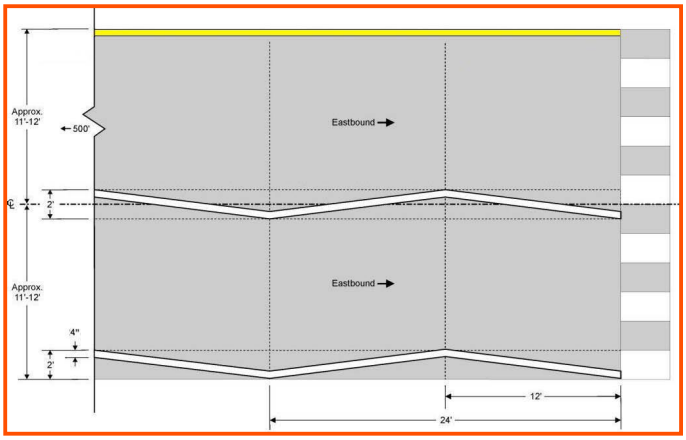
STRATEGY 1:
ZIG-ZAG LANE LINES AT TRAIL CROSSINGS

- Engineering Tool
- Unique pavement marking provides motorists an additional warning of an upcoming crossing
- Typically applied at mid-block locations
- Different design techniques used for two-lane versus multilane roadways
- Potentially incorporated into RRFB installation
- Requires FHWA Request to Experiment

Loudoun County, Virginia



Design and photo of zig-zag marking for two-lane Belmont Ridge Road in Loudoun County, VA

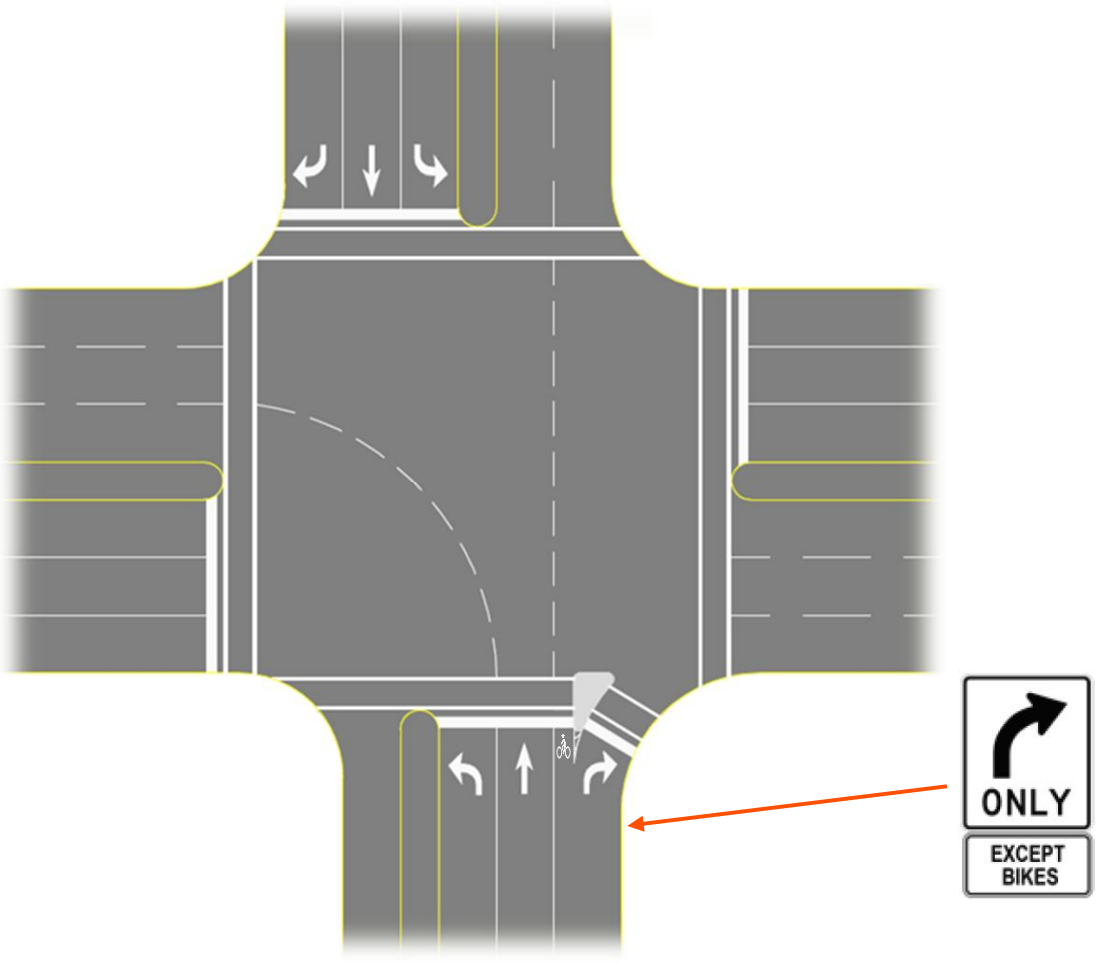


Design and photo of zig-zag marking for four-lane Sterling Boulevard in Loudoun County, VA

STRATEGY 2:
RIGHT-TURN ONLY EXCEPT BICYCLES

- Engineering Tool
- Ideal for intersections where a lane is added downstream or for intersections with a right-turn drop lane
- Could include a bike lane queue jumper
- Could include sharrows in the right-turn lane
- Assists bicyclists with proper lateral placement on the intersection approach

Austin, TX



STRATEGY 3: BIKE BOXES

- Engineering Tool
- Provides a designated area on the approach to signalized intersections for bicyclists to wait in a visible position in front of motorists during the red signal phase
- Enhances visibility of stopped cyclists waiting at a signalized intersection
- Reduces right-hook conflicts between bicyclists and turning traffic at the onset of the green phase
- Motorists are alerted to the potential placement of bicyclists by the bike box at the intersection
- For use at signalized intersections with high cyclist volumes
- Requires FHWA Request to Experiment

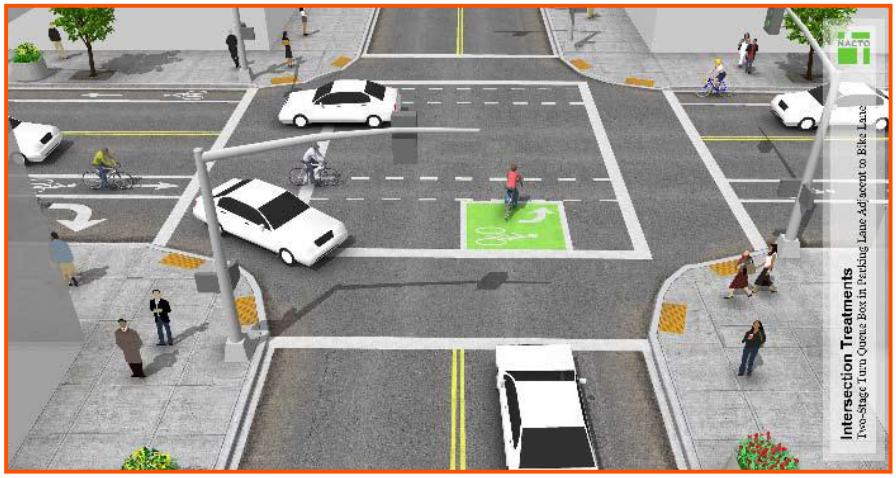
Portland, OR

Portland, OR

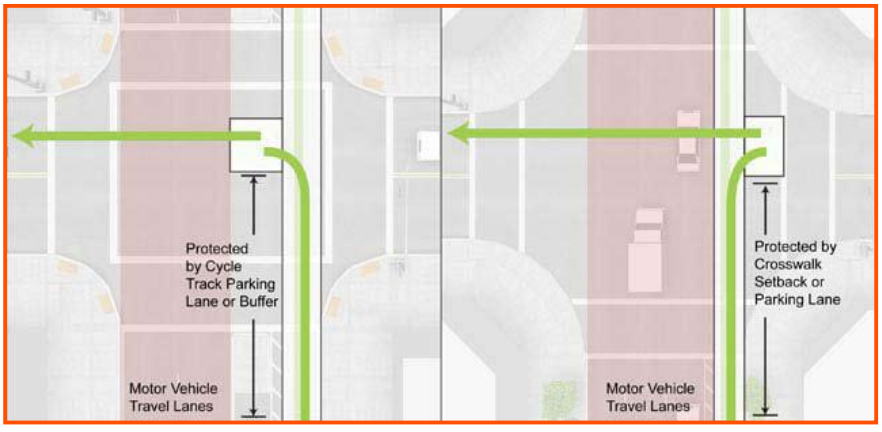
From NACTO Urban Bikeway Design Guide

STRATEGY 4:
TWO-STAGE TURN QUEUE BOXES

- Engineering Tool
- Provides a designated area at an intersection intended for bicyclists to have a place to wait for traffic to clear before proceeding in a different direction of travel
- Reduces turning conflicts between bicycles and motor vehicles
- Enhances the visibility of bicyclists in front of the motor vehicle traffic queue on the departure
- Ideal for multi-lane signalized intersections with right side bicycle facilities
- Requires FHWA Request to Experiment



From NACTO Urban Bikeway Design Guide



From NACTO Urban Bikeway Design Guide

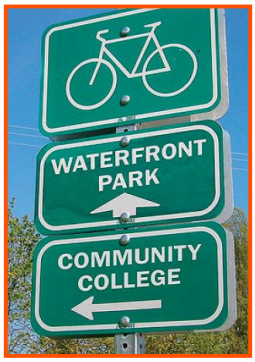
STRATEGY 5:
TRAFFIC SIGNAL WITH BIKE DETECTION LOOPS

- Engineering Tool
- Assists cyclists crossing signalized intersection by allowing a cyclist to call a green signal phase through the use of loop detectors
- Enhances crossing safety
- Can be applied at any signalized intersection, particularly useful at intersections with low to moderate side street traffic volumes
- Can also be applied at bicycle only traffic signals
- Signage can aid cyclists in understanding how the loops work and optimum bicycle placement

R10-22

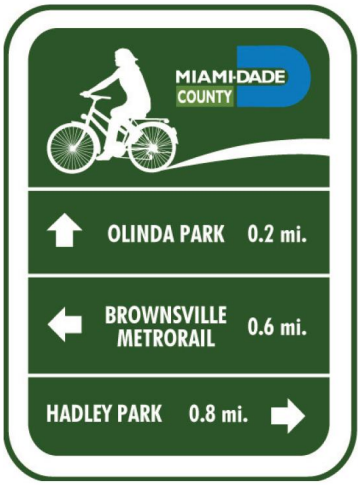
STRATEGY 6: BICYCLE WAYFINDING SIGNS

- Engineering Tool
- Provides wayfinding information to specific destinations for cyclists
- Should include distance information
- Best practice wayfinding signs also include estimated travel time



Oakland, CA

Portland, OR



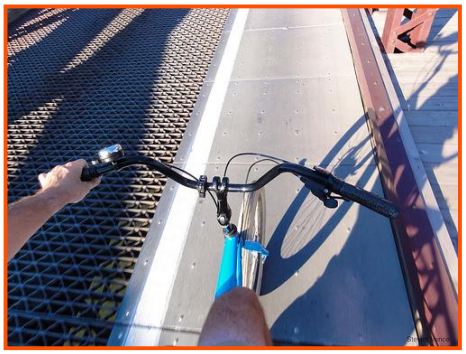
Potential design for local bicycle trip wayfinding

MDPROS E1 Facility Directional Sign

MUTCD D1-2c

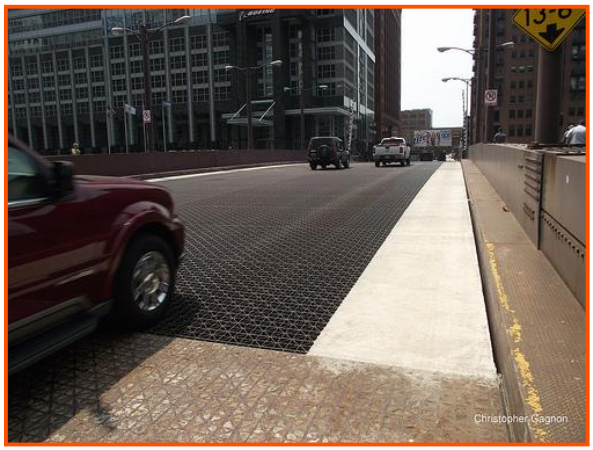
STRATEGY 7:
BICYCLE SURFACE TREATMENT ON OPEN GRATE BRIDGES

- Engineering Tool
- Surface treatments on the bike lanes or outside edges of open grate bridges
- Prevents slippery conditions that can be very hazardous for bicyclists
- Prevents narrow tires from being lodged in between grates



Chicago, IL

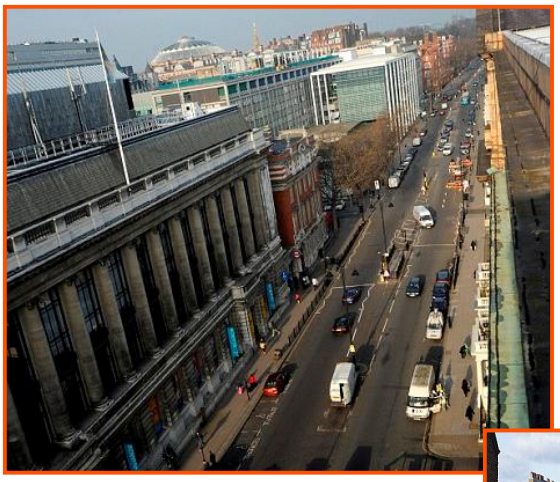
Anti-slip metal plates over shoulder on Hillsboro Inlet bridge in Broward County, FL



Concrete infill on outside edge of bridge in Chicago, IL

STRATEGY 8: SHARED SPACE

- Engineering Tool
- Minimizes separation between motor vehicles, pedestrians and cyclists
- Removes curbs, pavement markings, and traffic signs
- Calls for lower motor vehicle speeds
- Requires motorists to drive more attentively
- Prerequisite: having a balance of users – bikes, pedestrians, and cars



Before shared space implementation;
Exhibition Road, London, England

Shared space street; Fort Lauderdale, FL

After shared space implementation;
Exhibition Road, London, England

STRATEGY 9:
SHARED LANE MARKINGS (SHARROWS)

- Engineering Tool
- Used to indicated shared lane environment for bicycles and motor vehicles
- Reinforces the legitimacy of on-street bicycle traffic
- Alerts motorists to the potential presence of bicycles
- Should not be used where there is enough space for a separate bicycle lane

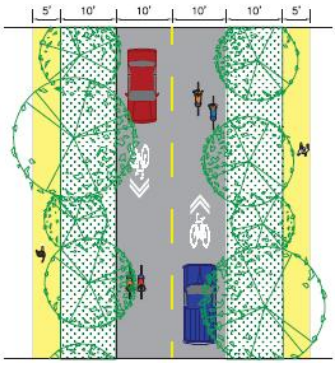
Chevron marking orientation may be adjusted for wayfinding purposes

Bus stop bench promoting sharrows
North Miami, FL

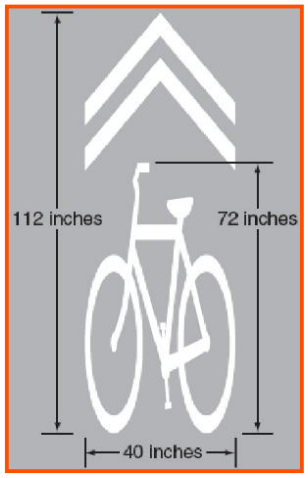
Sharrow supplemented by “Bikes May Use Full Lane” signage
Miami, FL

STRATEGY 10: BICYCLE BOULEVARD

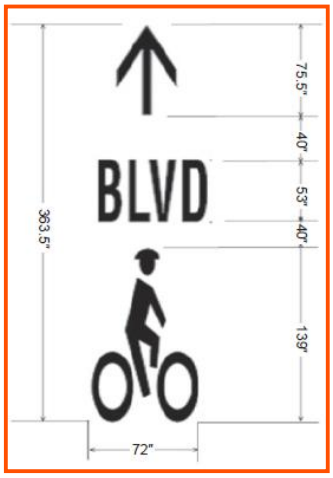
- Engineering Tool
- Improves bicycle safety, convenience, and connectivity
- Calms traffic and helps to remove non-local vehicles from the street
- Requires low motor vehicle speeds and volumes
- Includes signage and pavement markings



Plan view of a Bicycle Boulevard



Shared lane marking (Sharrow)



Example marking plan from Berkeley, CA of an alternative pavement marking

R4-11

STRATEGY 11: PEDESTRIAN STREETS

- Engineering Tool
- Prohibits motor vehicle traffic
- Ideal for commercial areas and around transit stations

Strøget, Copenhagen, Denmark

Montreal, Canada

Downtown Crossing in Boston, MA

STRATEGY 12: ADVISORY BIKE LANES

- Engineering Tool
- Ideal for low volume two-lane roadways without a striped centerline
- Gives designated space to cyclist by adding dashed advisory bike lanes to each direction
- Motor vehicles can pass oncoming traffic by merging into the advisory bike lanes after yielding to bicycles
- Can be implemented by removing an existing centerline for stress with less than 6,000 vehicles per day
- Increases the level of comfort for cyclists by reducing the “sea of asphalt” perception
- Improves driver expectations of where bicycles are likely to ride within the roadway
- Requires FHWA Request to Experiment

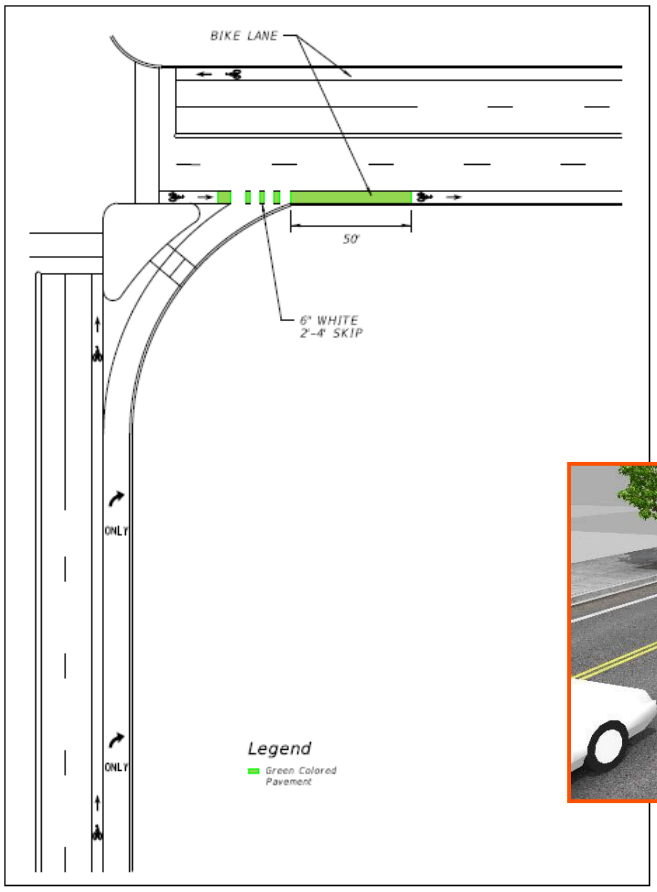
Minneapolis, MN (Before)

Minneapolis, MN (After)

MUTCD Sign W8-12

STRATEGY 13: GREEN BIKE LANES

- Engineering Tool
- Ideal for streets with bike lanes and right-turn only lanes at intersections, drop lanes, bus bays, and other traffic conflict zones
- Alerts motorists to yield to merging bicycles
- Increases visibility of the facility
- Reinforces priority to bicyclists in conflict zones
- Can also be applied along the entire length of enhanced or non-standard bicycle facilities per FHWA Interim Approval memorandum (IA-14)



FDOT Plans Preparation Manual, Figure 8.4.3

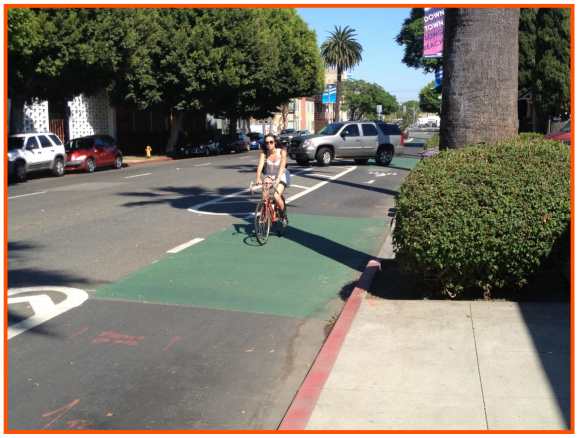
Charlotte, NC

From NACTO Urban Bikeway Design Guide

STRATEGY 14: BUFFERED BIKE LANES

- Engineering Tool
- Ideal for streets with high motor vehicle speeds
- Ideal for streets with on-street parking
- Provides separation between motor vehicles and bicyclists
- Enhances the feeling of safety for cyclists
- Increases likelihood of compliance with 3-foot separation law
- Minimum of 3-foot buffer width is preferred, which may assist in 3-foot law enforcement

Seattle, WA



Long Beach, CA

From NACTO Urban Bikeway Design Guide

Fort Lauderdale, FL

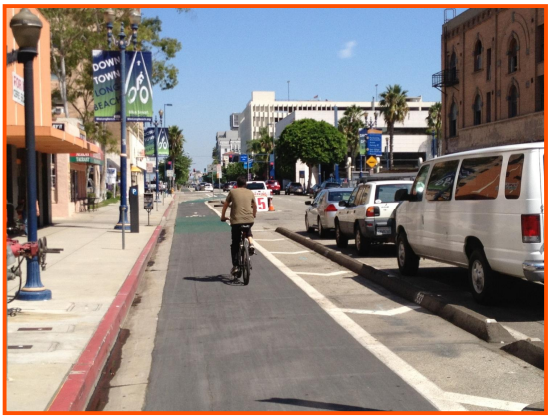
STRATEGY 15: CYCLE TRACKS

- Engineering Tool
- Physically separated from motor vehicle lanes and distinct from the sidewalk
- Provides higher level of separation and comfort than bike lanes
- Attractive to a wider range of bicyclist skill levels
- Not a traffic control device, so no MUTCD restriction on the use of cycle tracks

Raised one-way cycle track in Bend, OR

Two-way cycle track in Portland, OR

Protected one-way cycle track in New York, NY



Barriered one-way cycle track in Long Beach, CA

STRATEGY 16: LOW SPEED ZONE

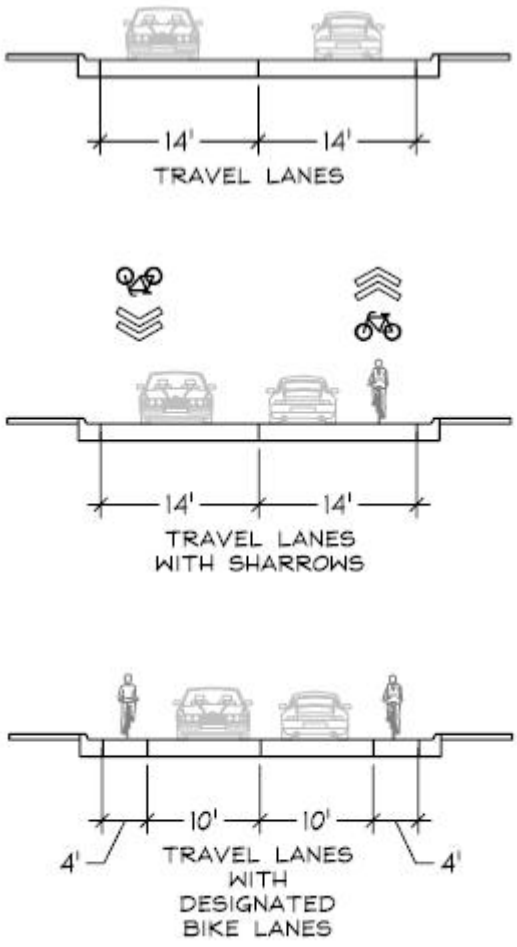
- Engineering Tool
- Reduces the speed limit
- Combined with speed bumps, pavement markings, and other traffic calming measures
- Decreases incidence and severity of crashes
- Reduces cut-through traffic

Low Speed Zone in New York, NY

Low Speed Zone in London – Low speeds required Monday through Friday from 8am to 6:30pm

STRATEGY 17:
14-FOOT LANE TREATMENTS

- Engineering Tool
- Provide bicycle facilities on streets with wide lanes
  - Sharrows
  - Reduced lane widths and bike lanes



Sketches of potential options for providing bicycle facilities on roadways with wide lanes

STRATEGY 18: CONTRAFLOW BIKE LANES

- Engineering Tool
- Provides an area of the roadway designated to allow for the lawful use by bicyclists to travel in the opposite direction from traffic on an otherwise one-way street
- Should be separated from the opposing direction of travel by a double yellow stripe
- Ideal for prioritizing bicycle mobility and reducing bicyclist trip lengths
- Enhances connectivity by allowing bicycles to travel in both directions
- Reduces travel time for cyclists
- Reduces the number of cyclists riding on sidewalks

Washington, DC

Brookline, MA

STRATEGY 19: GRADE SEPARATION

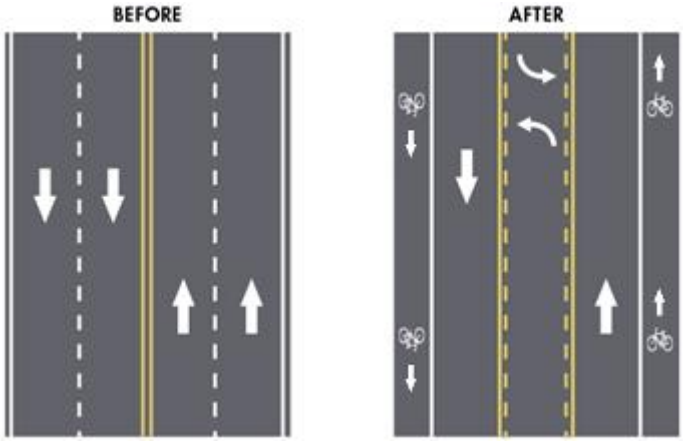
- Engineering Tool
- Along facilities and at crossings
- Increases safety
- Underpass can be a bicyclist energy conservation tool

Shared-use path underpass

Raised bike lane

STRATEGY 20:
ROAD DIET (LANE REDUCTION)

- Engineering Tool
- Reduce the number or width of motor vehicle travel lanes
- Can improve the safety of a roadway for pedestrians, bicyclists and motorists through
- Most often convert four-lane undivided roadways into three lanes with bicycle lanes, sidewalks, and/or on-street parking
- Strongly consider for four-lane roadways with AADT of 15,000 or less
- Roadways with AADT of 15,000 to 20,000, can also be good candidates



Before

After

STRATEGY 21: SHARED BUS AND BIKE LANE

- Engineering Tool
- Dedicated lane for shared use between buses and bikes only
- Ideal for bus rapid transit (BRT) and other major bus corridors where there is not enough space to provide both a bus lane and a bike lane
- Ideally 13 to 15 feet wide to allow passing by both bikes and buses
- Right-turning vehicles may be allowed to use the bus/bike lane

Shared bus and bike lane in Portland, Oregon

Signage for shared bus and bike lane, which may also allow right-turns

Shared bus and bike lane in Paris, France

STRATEGY 22:
INTEGRATION OF BIKES AND TRANSIT

- Encouragement Tool
- Improve the access to transit options for bicycles
- Bike parking
- Incentives for folding bikes
- Wheel rails
- Bicycle mobility enhancements in transit stations

Bicycle parking at a transit station in the Netherlands

Rails along stairs in multi-level transit station in the Netherlands allows for easier mobility for passengers with bicycles

Leaflet from Great Britain's National Rail

STRATEGY 23: INCLUSION OF CYCLING OPTIONS IN NON-CYCLING EVENTS

- Encouragement Tool
- Bike valet
- Bicycle parking information
- Bicycle access information
- Organized “bike trains”

Bike valet at a concert in Pittsburgh, PA

Bike valet at a music festival in San Francisco, CA

Bike parking map for a music festival in Cincinnati, OH

STRATEGY 24:
OPEN STREETS OR CICLOVIA EVENTS

- Encouragement Tool
- Closes streets to motor vehicles for a set period of time for the enjoyment of cyclists and pedestrians
- Promotes livable communities, cycling, and walking
- Typically include local businesses, food, and music
- Requires participation and support from local government
- Involves marketing to promote the events to the public
- Entails the work of employees and volunteers to run the event

Open Streets event on State Street in Chicago, IL

Ciclovia signage in Bogotá, Colombia

Ciclovia poster with event map from Dallas, Texas

STRATEGY 25: CYCLING PROMOTION CAMPAIGNS

- Encouragement Tool
- Highlight the fun and joy of bicycling
- Include videos, public service announcements, informational materials, posters, and merchandise
- Can include rewards for cyclists

I Bike Copenhagen T-Shirt

Clips from "Amsterdam Loves Bikes" music video

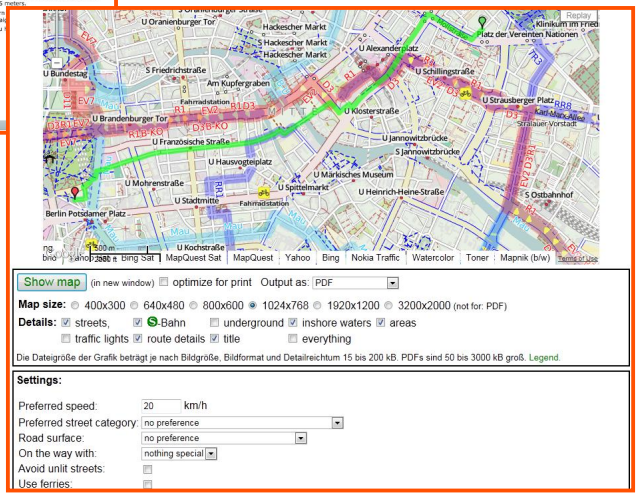
Clips from I Bike Fresno public service announcement – "Biking = Joy"

Reward campaign giving apples and chocolate to cyclists in Odense, Denmark

STRATEGY 26:
ONLINE BIKE ROUTE PLANNER

- Encouragement Tool
- Gives cyclists the optimum route for bicycles between two points
- Can include additional information such as time by bike versus car, CO2 reduction, log of bicycle trips, streets or trails options, connections to transit, attractions along a route, etc.

Online bike route planner from Amsterdam includes step-by-step directions, estimated time by bike versus car, CO2 reduction, warnings for dangerous intersections, and different routes for nighttime and daytime.



Berlin's online bike route planner includes step-by-step directions, estimated time with different riding speeds, and location of nearest transit stops. It asks for desired type of bike facility, road surface, traffic lights, and street lighting.

STRATEGY 27: BIKE BAROMETER

- Encouragement Tool
- Counts the number of bicycles that pass the device each day
- Can display varied information such as the daily count, the total so far this year, and last year's total count
- Raises awareness of cycling in an area

Bike barometer with an air pump in Copenhagen

Frederiksberg, Denmark

Bolzano, Italy

STRATEGY 28: TRAFFIC GARDEN

- Education Tool
- Allows students learn and apply traffic rules
- Consists of a small scale street network with either bicycles, pedal-powered, electric, or motorized vehicles
- Also called traffic parks or safety villages

Traffic park in Oulu, Finland

Traffic Garden in Utrecht, Netherlands

Peel Children's Safety Village, Ontario, Canada

STRATEGY 29: ANTI-DOORING CAMPAIGN

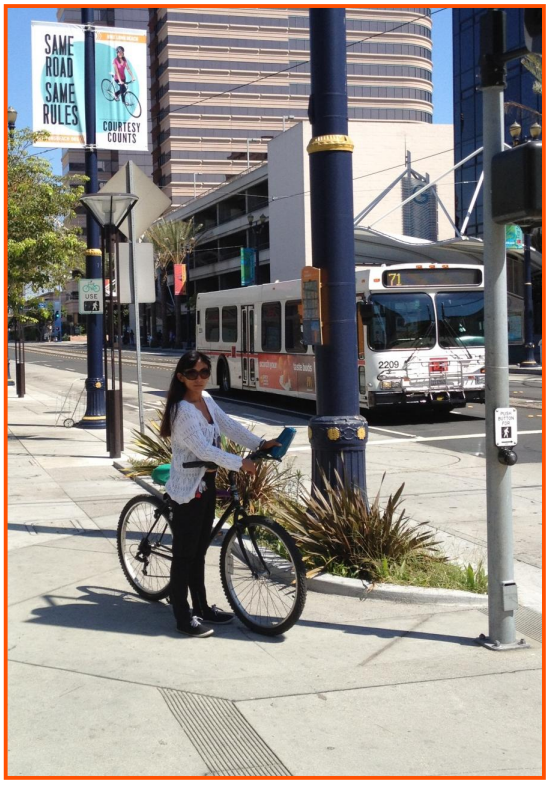
- Education Tool
- Awareness campaign to look for cyclists before opening car doors
- Include public service announcements, advertising panels on buses, and car window decals

Window decal on a taxi in New York City

Sign made from a car door in Denmark, translates to “Catch the cyclist with the eyes – not with the door”

STRATEGY 30: COURTESY COUNTS CAMPAIGN

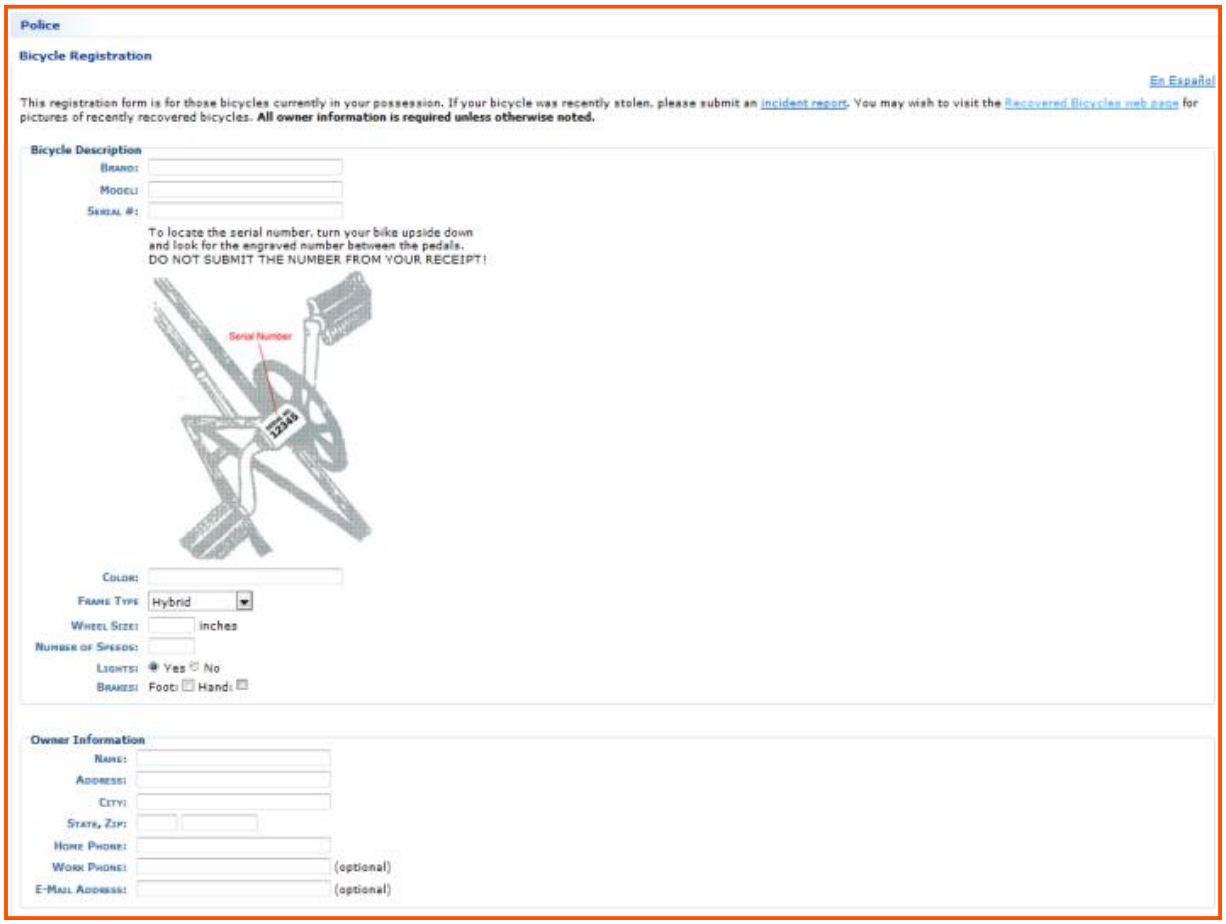
- Education Tool
- Awareness campaign targeted at both bicyclists and motorists
- "Share Our Streets"
- "Same Road Same Rules"



STRATEGY 31: ONLINE BICYCLE REGISTRATION

- Enforcement Tool
- Aids in theft recovery
- Includes fields for owner information and bicycle brand, model, color and serial number
- Registration can include engraving of a registration number on the bike or decals for owners to affix to their bikes

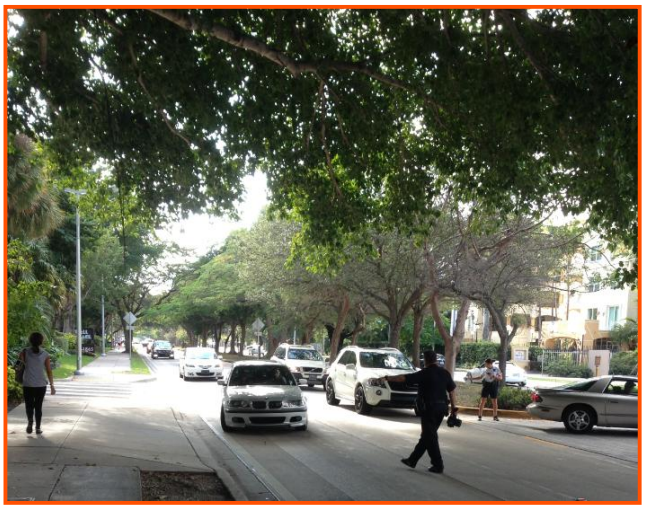
Registration decal, James City County, VA



Online bicycle registration form, Arlington, VA

STRATEGY 32: SPEED ENFORCEMENT ON BICYCLE CORRIDORS

- Enforcement Tool
- Targeted motor vehicle speed enforcement on major bicycle corridors
- Motor vehicle speed is a significant factor in injury severity of bicycle crashes
- Improve compliance with speed limits on these corridors



Targeted speed enforcement on Brickell Avenue in Miami

Targeted speed enforcement on a bike lane roadway with a mobile speed camera in France

STRATEGY 33: DATA COLLECTION PLAN

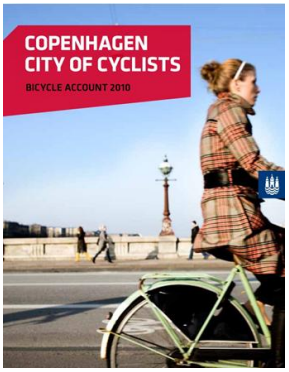
- Evaluation Tool
- Bicycle count data at key intersections, corridors, and attractors
- Designates consistent method of how and when bicycle data is collected
- When repeated, provides historical trends of bicycle use
- Can aid in projecting future bicycle demand

Excerpts from several editions of the data collection report - Capitol Region Council of Governments

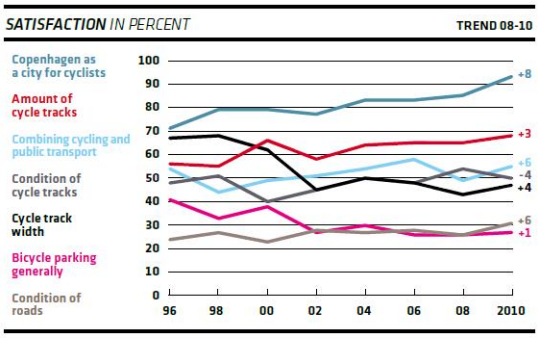
Methodology excerpts from a Washington State data collection report

STRATEGY 34: BIKE PROGRAM PROGRESS REPORT

- Evaluation Tool
- Survey cyclists on the performance of the bicycle program/network of an area
- Allows cyclists to provide suggestions for improvement
- Provides information on cycling levels, types and amounts of facilities, trip purpose, safety, and cyclist characteristics
- When repeated, it tracks progress of the program over time



Bicycle Account 2010,
Copenhagen, Denmark
(All images from this document)



Bi-annual tracking of satisfaction relating to different aspects of the bicycle program

	96	98	00	02	04	06	08	10	15
ECO-METROPOLIS – TARGET GOALS									
Percentage that cycle to work or education (%)	30	30	34	32	36	36	37	35	50
Seriously injured cyclists (number per year)	252	173	146	152	125	97	121	92	56
Percentage of cyclists that feel safe (%)	60	58	57	56	58	53	51	67	80
OTHER KEY FIGURES									
Cycled kilometers (mil. km per weekday)	0.93	0.92	1.05	1.11	1.13	1.15	1.17	1.21	
Cycled km between serious casualties (mil. km)	1.2	1.8	2.4	2.4	3.0	4.0	3.2	4.4	
Cycling speed (km/h)					15.3	16.0	16.2	15.8	
Cycle tracks (km)	294	302	307	323	329	332	338	346	
Cycle lanes (km)		6	10	12	14	17	18	23	
Green cycle routes (km)	29	30	31	32	37	39	41	42	
Cycle parking spaces on roads and pavements (1000 pcs)*						42	47	48	

* New method of calculation, which is why the figures have been adjusted in relation to the Bicycle Accounts of 2006 and 2008.

Bi-annual tracking key cycling statistics compared to future benchmark goals

PROBLEM IDENTIFICATION

Major transportation corridors and significant bicycle trip attractors in Miami-Dade County were examined for the potential application of the innovative strategies described in the previous section of this study. These sites were then screened based on need, feasibility, convenience, safety, and type of prospective improvement. The seven types of prospective improvements are included below.

- Bicycle mobility need at an intersection
- Bicycle safety need in an area with high bike demand
- Connections between existing facilities
- Corridor treatment between existing facilities
- Innovative enhancement of an existing facility
- Enhancement of a planned facility
- Enhancement of bike access to transit

The final list of sites, by improvement category, is included in Table 5.

Table 5: Improvement Sites

Bicycle Mobility Need at an Intersection	
1.	Oak Avenue and Virginia Street – Coconut Grove
2.	SW 58th Avenue/SW 70th Street and US 1 – South Miami
Bicycle Safety Need in an Area with High Bike Demand	
3.	N Miami Avenue from N 17th Street to N 20th Street
Connection between Existing Facilities	
4.	Roberta Hunter Park and South Dade Trail
5.	Overtown Greenway to Museum Park
6.	MacArthur Causeway East Bridge
7.	NW 26th Street/Comstock Elementary
Corridor Treatment to Serve Key Trip Pattern	
8.	N Miami Avenue from N 5th Street to N 11th Street
9.	NW 17th Street from NW 3rd Avenue to NW 7th Avenue
10.	NW 17th Street from NW 7th Avenue to NW 9th Avenue
11.	NW 4th Street from NW 8th Avenue to NW 14th Avenue – Marlins Stadium
12.	SW 16th Street from SW 107th Avenue to SW 94th Avenue - FIU
13.	Brickell Key Drive Bridge
14.	Brickell to Health District
15.	Downtown Miami Buffered/Barriered Bike Lane Network
16.	Pine Tree Drive – Miami Beach
17.	S 1st Street from SW 17th Avenue to Biscayne Boulevard
Innovative Enhancement of an Existing Facility	
18.	MacArthur Causeway, East of Watson Island to Bridge Road
19.	SR A1A and 96th Street
20.	Snake Creek Trail at I-95/SFRC Crossing
Enhancement of a Planned Facility	
21.	S Miami Avenue and SW 26th Road
22.	Snapper Creek Phase 2 – SW 67th Avenue and SW 85th Street
Enhancement of Bike Access to Transit	
23.	Allapattah Metrorail Station
24.	Coconut Grove Metrorail Station
25.	Hialeah Metrorail Station
26.	Douglas Road Metrorail Station

DATA COLLECTION AND ANALYSIS

Field reviews of the 26 sites listed in the previous section of this study were conducted to understand the existing conditions, operations, and opportunities for improvement. Morning and evening peak hour turning movement counts were collected at key intersections for several of the identified sites to supplement the field observations. These counts included automobile, bicycle and pedestrian usage. Additionally, daily volume and 85th percentile speed were measured for the key corridors identified. A summary of the field observations, counts, and operations analyses for each site is included in Table 6 below. Photos, detailed counts, and analyses are included in Appendix B.

Table 6: Data Collection and Analysis Summary

	Site	Widths	Operations	Needs/Other Notes
1.	Oak Avenue and Virginia Street – Coconut Grove	- Travel lanes – 24.5' - Edge of pavement to sidewalk – 7'-10" (including 2' valley gutter)	- A.M. Peak Hour – Intersection LOS A - P.M. Peak Hour – Intersection LOS A	- Intersection treatment for WBL turning cyclists needed - Sign on northeast corner south of sidewalk may need to be moved to north side of sidewalk - Bike-friendly businesses just south on Virginia St
2.	SW 58th Avenue/SW 70th Street and US 1 – South Miami	- EBR lane – 17' - EBL lane – 11.5' - NB lanes – 11.5', 11.5', 11' - Landscaping to west of NBL lane – 6' - Sidewalk – 5'-9"	- A.M. Peak Hour – Intersection LOS C - P.M. Peak Hour – Intersection LOS E	- Mobility enhancement for EB bicycles destined for Sunset Drive needed
3.	N Miami Avenue from N 17th Street to N 20th Street	N Miami Avenue - West sidewalk – 4'-9" - West landscape buffer - 8'-6" - Pavement – 43' - East landscape buffer - 8' - East sidewalk – 5'-6" N 19th Street - Pavement – 34.5'	- AADT – 8,130 vpd - 85th Percentile Speed – 40mph - N 19th Street is one-way WB just west of N Miami Ave - Segment LOS C	- The railroad crosses N Miami Ave at an acute angle which causes a safety issue for NB and SB bicyclists
4.	Roberta Hunter Park and South Dade Trail	N/A	N/A	Bicycle connection needed between the two facilities
5.	Overtown Greenway to Museum Park	N/A	NE 8th St (Miami Ave to 1st Ave) - AADT – 3,159 vpd - 85th Percentile Speed – 29mph - Segment LOS C	Bicycle connection needed between the two facilities
6.	MacArthur Causeway East Bridge	N/A	N/A	- No bike lanes are present on this section of the bridge - Bike lanes are currently present on MacArthur to the west
7.	NW 26th Street/Comstock Elementary	N/A	N/A	- NW 26th does not go through - Bicycle connection needed
8.	N Miami Avenue from N 5th Street to N 11th Street	- Ranges from 32' to 48' wide - 3 lanes southbound with parking on one or both sides for most segments	- AADT – 4,831 vpd - 85th Percentile Speed – 29mph - Segment LOS C	- No bicycle facilities - Appears to be overbuilt for motor vehicle traffic

Site		Widths	Operations	Needs/Other Notes
9.	NW 17th Street from NW 3rd Avenue to NW 7th Avenue	- 38' pavement cross-section	- AADT – 2,720 vpd - 85th Percentile Speed – 38mph - Segment LOS C	- Striping is faded - Parking on both sides with minimal activity observed
10.	NW 17th Street from NW 7th Avenue to NW 9th Avenue	- 38' pavement cross-section	- AADT – 4,039 vpd - 85th Percentile Speed – 27mph - Segment LOS C	- Striping is faded - Parking on both sides
11.	NW 4th Street from NW 8th Avenue to NW 14th Avenue – Marlins Stadium	NW 8th Ave to NW 10th Ave - Pavement – 37' NW 10th Ave to NW 12th Ave - Pavement – 25' NW 12th Ave to NW 14th Ave - Pavement – 25.5'	N/A	NW 8th Ave to NW 10th Ave - 2 lanes plus parking on both sides NW 10th Ave to NW 12th Ave - No striping, parking observed on both sides, but not permitted on south side NW 12th Ave to NW 14th Ave - No striping
12.	SW 16th Street from SW 107th Avenue to SW 94th Avenue - FIU	- Pavement – 24' - EOP to mailboxes – ~4' - EOP to sidewalk – 18'	- AADT – 9,300 vpd (W of 94th Ave) - Segment LOS D (W of 94th Ave)	- No bicycle facilities - Connects FIU to residential area
13.	Brickell Key Drive Bridge	At west end: - WB sidewalk – 6' - WB pavement – 21.5' - Median – 8' - EB pavement – 21.5' - EB sidewalk – 4'-9"	N/A	- Sharrows existing - Unprotected sidewalks existing
14.	Brickell to Health District	SW 2nd Ave Bridge - SB sidewalk – 6.5' - SB pavement – 24' - Median – 6'-10" - NB pavement – 24' - NB sidewalk – 6.5'	NW 2nd Ave (S of 8th Street) - AADT – 4,600 vpd - Segment LOS C NW 3rd Ave (14th St to 17th St) - AADT – 6,311 vpd - 85th Percentile Speed – 31mph - Segment LOS D	- Major bicycle trip route - Bike lanes on some roadway segments - No bike facilities on others
15.	Downtown Miami Buffered/Barriered Bike Lane Network	N Miami Ave - Pavement ranges from 32' to 48' wide NE 1st Ave - Pavement ranges from 29' to 45' wide N 6th St - Pavement ranges from 31.5' to 41.5' wide N 5th St - Pavement ranges from 30' to 55' wide	N Miami Ave (4th St to 5th St) - AADT – 4,942 vpd - 85th Percentile Speed – 33mph - Segment LOS C NE 1st Ave (4th St to 5th St) - AADT – 6,943 vpd - 85th Percentile Speed – 30mph - Segment LOS C NW 6th St (1st Ave to Miami Ave) - AADT – 3,723 vpd - 85th Percentile Speed – 32mph - Segment LOS C NW 5th St (1st Ave to Miami Ave) - AADT – 5,159 vpd - 85th Percentile Speed – 13mph - Segment LOS C	N Miami Ave - 3 lanes southbound with parking on one or both sides for most segments - Barrier walls could be removed to create more space NE 1st Ave - 3 lanes northbound with parking on one or both sides for most segments - Barrier walls could be removed to create more N 6th St - 2 lanes westbound with parking on one side for most segments - Striping is faded/unclear N 5th St - 3 lanes eastbound with parking on both sides for most segments

Site		Widths	Operations	Needs/Other Notes
16.	Pine Tree Drive – Miami Beach	N/A	Pine Tree Dr, S of 37th St - AADT – 16,200 vpd - Segment LOS D Pine Tree Dr, S of 51st St - AADT – 11,000 vpd - Segment LOS C Pine Tree Dr, S of 55th St - AADT – 5,100 vpd - Segment LOS C La Gorce Dr, N of 57th St - AADT – 4,800 vpd - Segment LOS C	Dade Boulevard to W 26th St - 4 lane divided with parking on both sides W 26th St to W 30th St - 4 lane undivided W 30th St to W 40th St - 4 lane divided with parking on east side W 40th St to W 46th St - 4 lane divided W 46h St to Bridge/W 51st St - 4 lane divided with parking on both sides W 51st St to W 63rd St - One-way pair with La Gorce Drive - Both roadways are 2 lanes one-way with paved shoulders
17.	S 1st Street from SW 17th Avenue to Biscayne Boulevard	N/A	W of SW 8th Ave - AADT – 12,500 vpd - Segment LOS D E of Miami River Bridge - AADT – 8,500 vpd - Segment LOS C E of S Miami Ave - AADT – 6,200 vpd - Segment LOS C	One-Way Eastbound SW 17th Ave to SW 5th Ave - 3 lanes with parking on both sides SW 5th Ave to SW 2nd Ave - 4 lanes SW 2nd Ave to SE 2nd Ave - 3 lanes with parking on one side SE 2nd Ave to Biscayne Blvd - 3 lanes with parking on both sides
18.	MacArthur Causeway, East of Watson Island to Bridge Road	N/A	N/A	- Existing bicycle lanes - No separation from high speed vehicles on causeway
19.	SR A1A and 96th Street	N/A	- SR A1A/Harding Avenue is one-way southbound with a shared thru/left lane, two thru lanes, and an exclusive right lane	- Southbound bike lane begins just south of this intersection - No bicycle facilities north of the intersection - The exclusive right-turn lane aligns with the bike lane to the south
20.	Snake Creek Trail at I-95/SFRC Crossing	N/A	N/A	The existing trail underpass is narrow and has a low vertical clearance
21.	S Miami Avenue and SW 26th Road	- EB approach – 49.5' (4 lanes plus striped out area) - SB approach – 36.5' (3 lanes plus striped out area)	- A.M. Peak Hour – Intersection LOS B - P.M. Peak Hour – Intersection LOS C	Large intersection, hard to make turns from SB Miami Ave to EB 26th Road by bike
22.	Snapper Creek Phase 2 – SW 67th Avenue and SW 85th Street	N/A	- SW 85th Street does not connect to SW 67th Avenue	This intersection could serve as a trail connection for the future Snapper Creek Phase 2
23.	Allapattah Metrorail Station	N/A	N/A	Bicycle access improvements needed
24.	Coconut Grove Metrorail Station	N/A	N/A	Bicycle parking improvements needed
25.	Hialeah Metrorail Station	N/A	N/A	Bicycle access improvements needed
26.	Douglas Rd Metrorail Station	N/A	N/A	Bicycle access improvements needed

RECOMMENDED IMPROVEMENTS

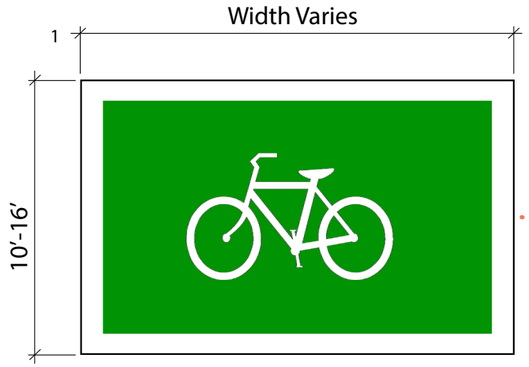
After reviewing the operations and needs at each of the 26 sites and comparing them to the toolbox of improvements, a recommended improvement plan for each site was identified. This section describes the recommended strategies to be implemented at each of the sites, including schematic renderings, example pictures, and whether any special considerations (i.e. FHWA Request to Experiment) may be needed. In addition to the predominantly engineering improvement strategies at the 26 identified sites, this section includes detailed recommendations for key toolbox strategies from the four other "E's" – encouragement, education, enforcement, and evaluation. While the recommendations in this section do not entail the entirety of the toolbox strategies, all are recommended for use where appropriate.

1. **Oak Avenue and Virginia Street – Coconut Grove –** *Bicycle mobility need at an intersection*

Installation of a bike box on the westbound approach would serve westbound left-turning bicyclists accessing the bike-friendly businesses just south of Oak Avenue on Virginia Street. In addition to the bike box, the recommended improvement strategy for this intersection includes a green colored bike lane on the westbound approach, appropriate signage to accommodate the bike box, and sharrows on all other approaches and departures. A rendering of the recommended improvements at this intersection is shown in Figure 1. Note that the existing sign on northeast corner south of sidewalk (shown in photo A below) would need to be moved to north side of sidewalk to allow for the westbound bike lane. FHWA Request to Experiment is required for the bike box and the green bike lane.

Figure 1. Bike Box

Oak Avenue & Virginia Street
Miami, Florida | USA



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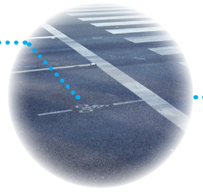

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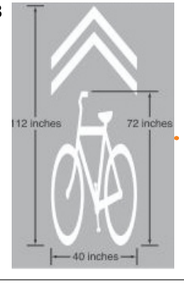

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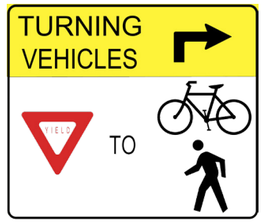

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a SHARROW pavement marking at for shared lanes, TYP.

b "WAIT HERE" pavement marking at stop bar

c "SLOW LOOK FOR RIGHT TURNS" pavement marking

1. Bike Box

A Bike Box should be installed to provide a designated area on the approach to the signalized intersection where bicyclists wait in a visible position in front of motorists during the red signal phase.

A bike box can increase the visibility of stopped bicyclists during the red signal, provide a head start for stopped bicyclists upon the onset of the green signal indication, and reduce conflicts between bicyclists and turning traffic at the onset of the green signal indication.

2. Bicycle Detection + Signalization

A Bicycle Detector should be installed to accurately detect bicyclists and provide clear guidance to bicyclists on how to actuate detection.

3. Sharrow Pavement Markings

See MUTCD Section 9C.07 for sharrow design and spacing.

4. R10-11 Street Sign

A "No Turn On Red" sign shall be installed to alert motorists of the potential for conflicts with bicycles and prohibit right turns during the red signal indication.

5. R10-15 Street Sign

A "Turning Vehicles Yield" sign should be installed to alert motorists of the potential for conflicts with bicycles and pedestrians.

6. R10-6A Street Sign

A "Stop Here On Red" sign should be post mounted to reinforce motorists' observance of the stop bar.

Kimley-Horn and Associates, Inc.

2. **SW 58th Avenue/SW 70th Street and US 1**– *Bicycle mobility need at an intersection*

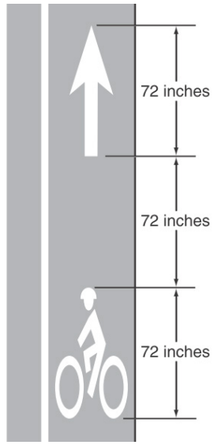
Installation of a southbound contraflow bike lane on SW 58th Avenue south of US 1/Dixie Highway would enhance access to Sunset Drive for eastbound bicyclists on SW 70th Street. To augment the contraflow bike lane on the southern departure of the intersection, the recommended improvement strategy includes a short keyhole bike lane on the north leg of the intersection, sharrows further south on SW 58th Street, and several new signs. To accommodate the contraflow bike lane, the landscaping island shown in photo A would need to be removed and the trees would need to be relocated. Photo B shows an example of a contraflow bike lane adjacent to opposing direction travel lanes with sharrows. A rendering of the recommended improvements at this intersection is shown in Figure 2.

Figure 2. Contraflow Bike Lane

SW 58th Avenue & S Dixie Highway
Miami, Florida | USA

1

2



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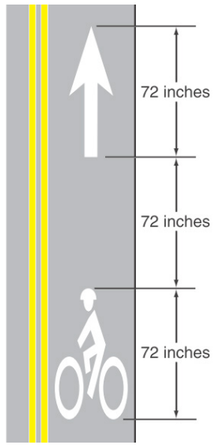

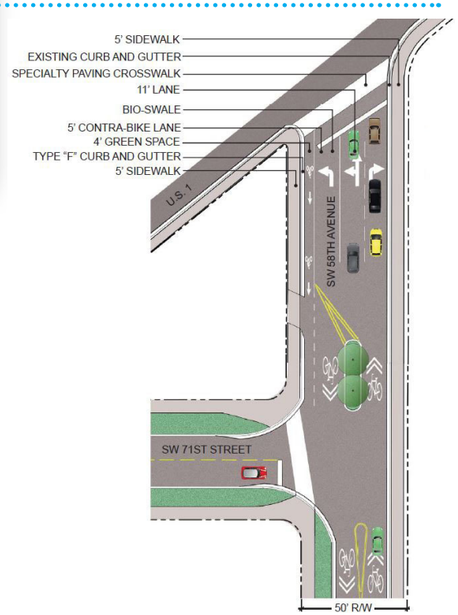

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5

1. Left Turn Only Except Bikes

A "Left Turn Only" sign with an "Except Bikes" supplemental plaque should be installed to allow cyclists to make a through movement at the intersection.

2. Bike Lane Marking

Bike lane pavement markings designate the portion of the roadway for preferential use by bicyclists. Markings inform all road users of the restricted nature of the bicycle lane.

3. Do Not Enter Except Bicycles

A "Do Not Enter" sign with an "Except Bikes" supplemental plaque should be added when implementing a contraflow bike lane to clearly communicate usage to bicyclists.

4. Contra-flow Bike Lane Marking

A contraflow bike lane is an area of the roadway designated to allow for the lawful use by bicyclists to travel in the opposite direction from traffic on an otherwise one-way street. The contraflow bike lane can be separated from the opposing direction with double yellow striping or curbing.

SW 58th AVENUE & S DIXIE HIGHWAY

5. Sharrow Pavement Markings

See MUTCD Section 9C.07 for sharrow design and spacing.

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3. **N Miami Avenue from N 17th Street to N 20th Street –** *Bicycle safety need in an area with high bike demand*

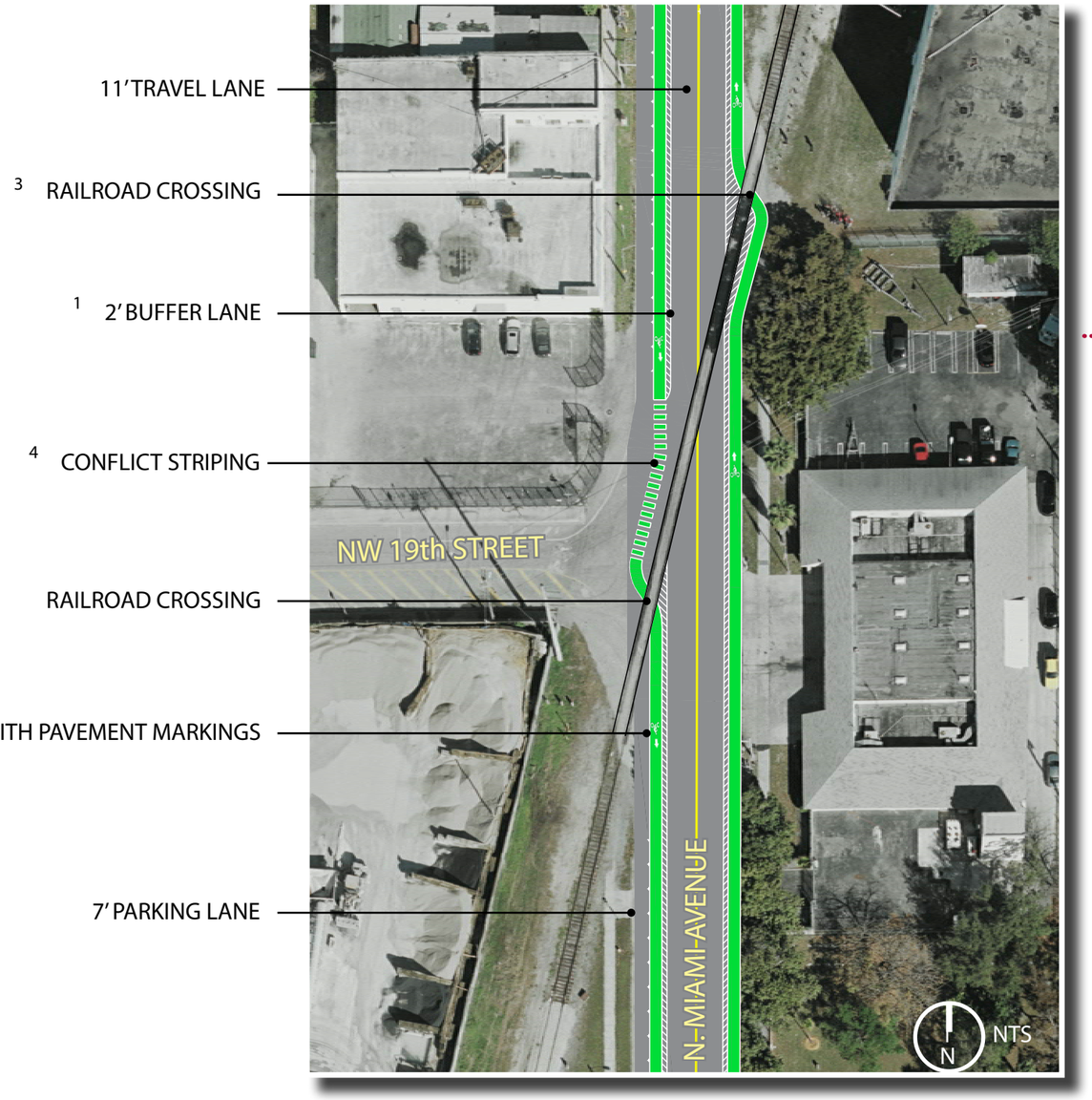
A road diet along N Miami Avenue would allow for the installation of buffered bike lanes and a "jug handle" treatment at the acute angle railroad crossing. The 43-foot cross section on N Miami Avenue would be altered from two lanes in each direction to one lane in each direction with buffered bike lanes in both directions and parking on one side. This section of N Miami Avenue is an ideal candidate for this type of road diet, as its AADT is less than 15,000 vehicles per day. The segment currently operates at LOS C and preliminary analysis shows that it is expected to operate at LOS D, well under capacity, with the road diet. Because the railroad crosses N Miami Avenue at an acute angle at N 19th Street (one-way eastbound), there is a generous amount of pavement available to accommodate a "jug handle" bike lane, as seen in photo A below. Photo B shows an example of the alignment of a "jug handle" bike lane at a railroad crossing (this color scheme is not permitted). A rendering of the recommended improvements along this corridor is shown in Figure 3. FHWA Request to Experiment is required for green bike lanes.

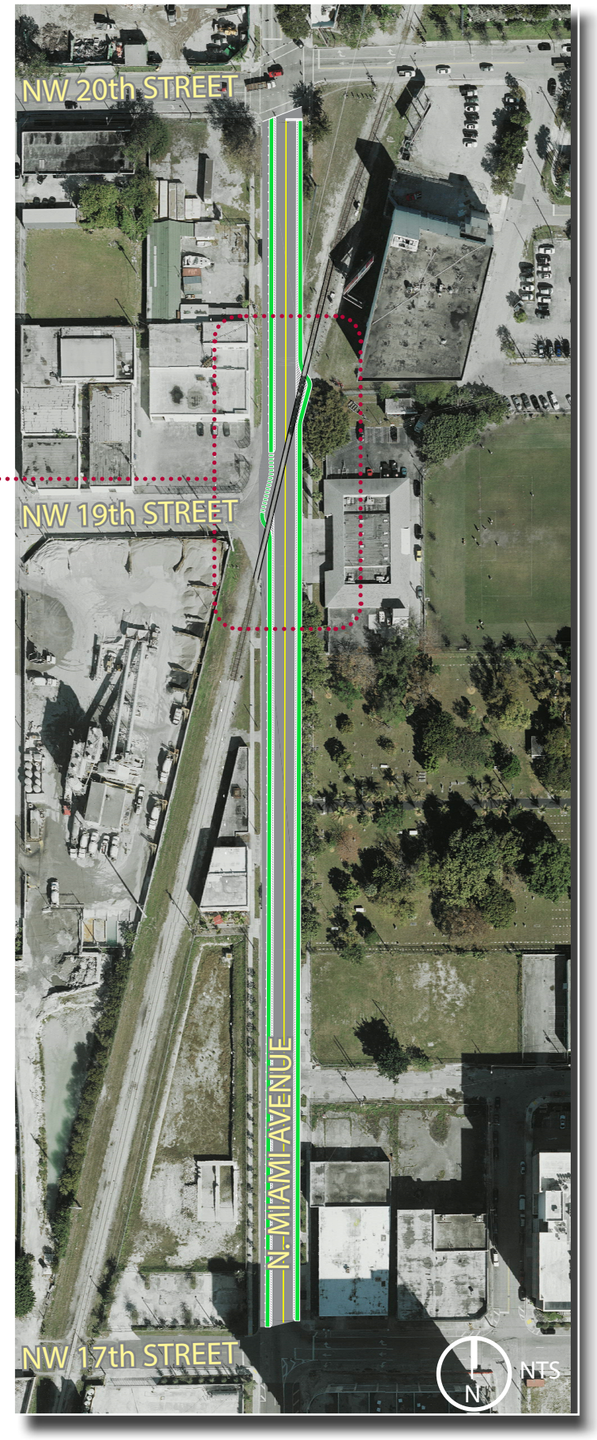
A

B

Figure 3. Road Diet and Railroad Crossing

N Miami Avenue from N 20th Street to N 17th Street
Miami, Florida | USA





1. 2’ Buffer Lane

Buffers should be at least 2 feet wide because it is impractical to mark a buffer zone narrower than that.

2. 5’ Bike Lane

Bicycle lane word and or symbol and arrow markings (MUTCD Figure 8C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.

3. Railroad Crossing

The railroad crossing “jug handle” allows for cyclists to approach the railroad tracks at a perpendicular angle for safer crossing.

4. Conflict Striping

Colored pavement may be used for increased visibility within conflict areas or across entire intersections.

N MIAMI AVENUE from NW 20th STREET to NW 17th STREET

Kimley-Horn and Associates, Inc.

4. **Roberta Hunter Park and South Dade Trail –** *Connection between existing facilities*

A trail along the southwest side of SW 117th Avenue would connect Roberta Hunter Park and the South Dade Trail. The recommended improvement strategy for this connection includes public plazas at both ends of the connection, wayfinding signage, and a bike signal. The bike signal would provide a safer crossing for bicycles at southern end of Roberta Hunter Park where the two sections of SW 117th Avenue meet, shown in photo A (looking north). A rendering of the recommended improvements along this corridor is shown in Figure 4. FHWA Request to Experiment is required for green bike lanes. FHWA Request to Experiment is required if bike symbol lenses are used for the bike signal.

Figure 4. Trail Connection

Roberta Hunter Park / South Dade Trail
SW 117th Avenue
Miami, Florida | USA

1

2

3 a

4 b

1. Trail Connection

Proposed enhancements would link the existing Roberta Hunter Park and South Dade Trail at S. Dixie Highway and allow for a safe connection for bicyclists.

2. Wide Curb Ramps

Curb ramps along the trail should be the same width as the trail.

3. Wayfinding Signage

Wayfinding signage shall be used to orient users within the context of their environment.

4. Public Plaza

A public plaza serves as a social space that is open to the people.

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5. **Overtown Greenway to Museum Park** – *Connecting existing facilities*

Construction of a 2-way cycle track on NW 8th Street from NW 1st Avenue to east of US 1/Biscayne Boulevard would connect Overtown Greenway Phase 2 to Museum Park. A proposed typical section for NW 8th Street consists of one lane in each direction, parking on one side, and a protected two-way cycle track on the other side. Figure 5 shows a rendering of a proposed typical section and the connection from Overtown Greenway Phase 2 to Museum Park (in red).

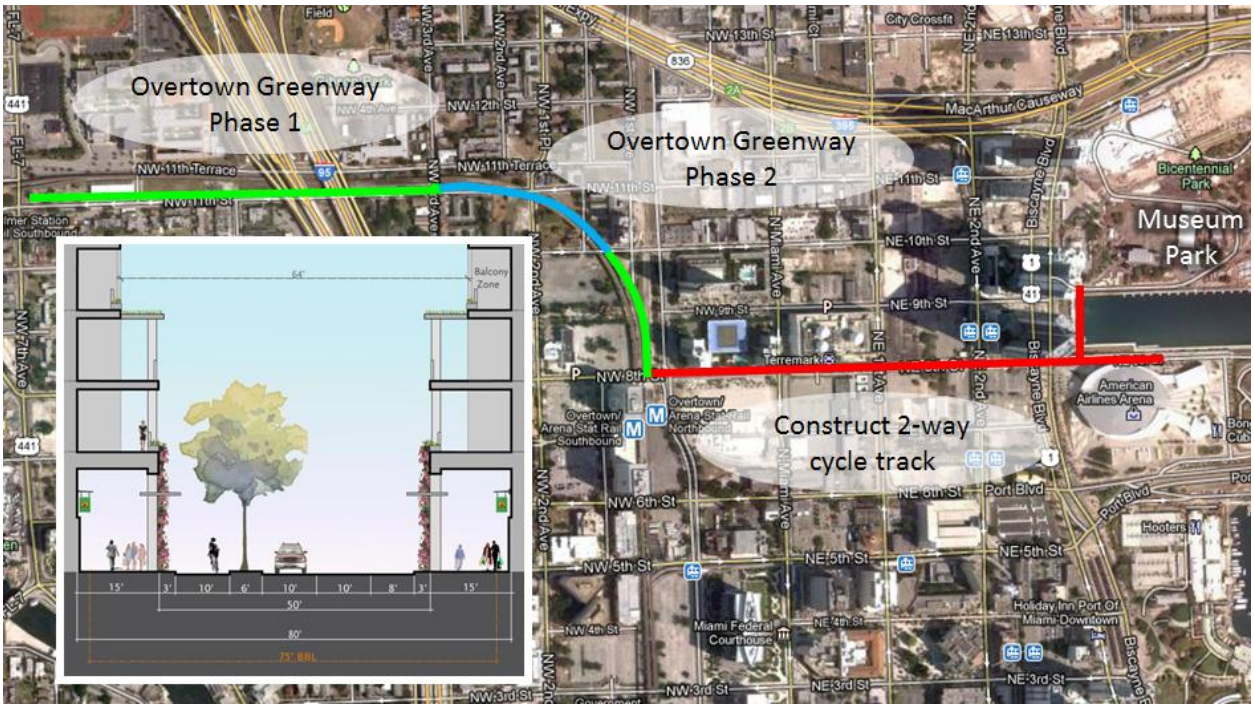


Figure 5. 2-Way Cycle Track - **Overtown Greenway to Museum Park**

6. **MacArthur Causeway East Bridge –** *Connection between existing facilities*

The east bridge on the MacArthur Causeway, beginning at Terminal Isle, is the missing link for bicycle facilities from the causeway to the beach. The existing cross-section of the bridge and high vehicular volumes do not allow for restriping of the lanes to create bike lanes. To accommodate bicycle lanes on this bridge, reconstruction is needed. This should be considered as a priority when the bridge is up for reconstruction. The red lines in Figure 6 illustrate this section of the causeway where bicycle facilities are needed.

Figure 6. MacArthur Causeway East Bridge

7. **NW 26th Street/Comstock Elementary** – *Connection between existing facilities*

NW 26th Street does not connect between NW 18th Court and NW 17th Avenue. The combination of this missing link and the proximity of Juan Pablo Duarte Park to Comstock Elementary School provides an opportunity to connect the park, the school, and the neighborhoods on both sides with a bicycle path. The red line in Figure 7 depicts the approximate alignment of the recommended bicycle path.

Figure 7. **NW 26th Street/Comstock Elementary**

8. **N Miami Avenue from N 5th Street to N 11th Street** – *Corridor treatment to serve key trip purpose*

A road diet along N Miami Avenue would allow for the installation of a one-way buffered/barriered cycle track. The typical section N Miami Avenue would be altered from three southbound lanes with parking on one or both sides to two southbound lanes, parking on one or both sides, and a buffered/barriered southbound cycle track on the east side. An example of a buffered/barriered cycle track separated by a parking lane on a one-way street is shown in photo A. The segment currently operates at LOS C and preliminary analysis shows that it is expected to continue to operate at LOS C with the road diet. A rendering of the recommended improvements along this corridor is shown in Figure 8. The recommendations are consistent with the City of Miami plans depicted in photo B. FHWA Request to Experiment is required for green bike lanes.

A

B

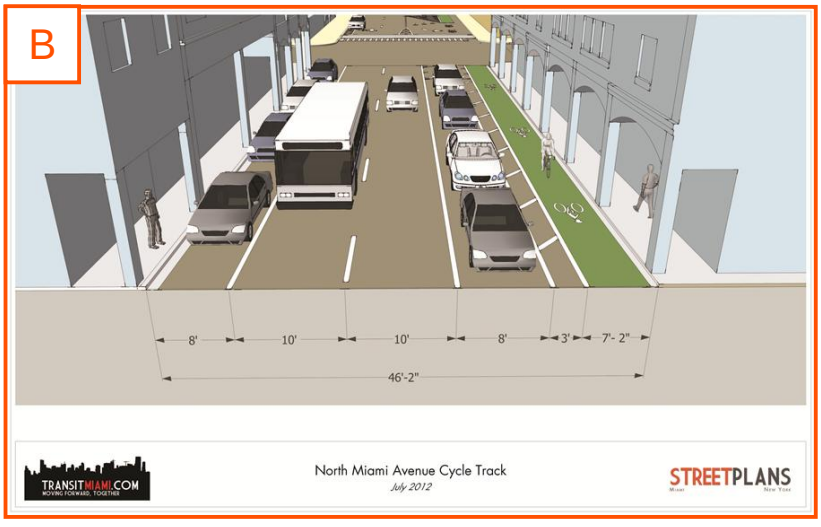
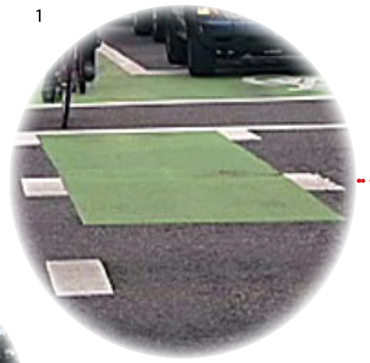


Figure 8. Road Diet / Buffered Cycle Track / Colored Pavement

N Miami Avenue & NE 1st Avenue from N 11th Street to N 5th Street
Miami, Florida | USA



1 CONFLICT STRIPING

8' PARKING LANE

CONVERT (1) SOUTHBOUND MOTOR VEHICLE LANE TO PROVIDE SOUTHBOUND CYCLE TRACK AND BUFFER.

4' BUFFER LANE

6' GREEN CYCLE TRACK

1. Green Colored Pavement / Conflict Striping

Colored pavement may be used for increased visibility within conflict areas or across entire intersections.

2. Bicycle Signalization

Bicycle signalization should be installed to provide clear guidance to bicyclists traveling in the cycle track at signalized intersections. Bicycle signal faces integrate with the conventional traffic signal indications to address conflicting movements.

Steady and flashing RED BICYCLE, YELLOW BICYCLE, and GREEN BICYCLE signal indications shall have the same meanings as steady and flashing CIRCULAR RED, CIRCULAR YELLOW, and CIRCULAR GREEN signal indications for motor vehicles, respectively, except that the signal indications shall only be applicable to bicyclists.

Road Diet

A road diet reduces the number of motor vehicle travel lanes in order to provide space for other roadway users.

N MIAMI AVENUE from NW 11th STREET to NW 5th STREET

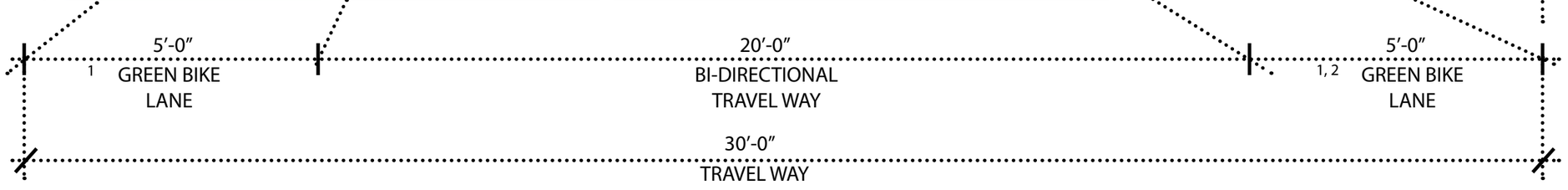
Kimley-Horn and Associates, Inc.

9. **NW 17th Street from NW 3rd Avenue to NW 7th Avenue –** *Corridor treatment to serve key trip purpose*

The removal of parking along one side of NW 17th Street from NW 3rd Avenue to NW 7th Avenue would allow for the installation of bicycle lanes in both directions. This section of NW 17th operates as a two-lane undivided roadway with parking on both sides, although the pavement markings on the 38-foot cross-section are currently quite faded, as shown in photo A, below. Nominal parking activity was observed along either side of this stretch of NW 17th Avenue. The recommended improvement strategy designates one side of the roadway for parking and creates space for bike lanes in each direction. A rendering of the recommended improvements along this corridor is shown in Figure 8. FHWA Request to Experiment is required for green bike lanes.

Figure 9. Colored Bike Lane Pavement

NW 17th Street from NW 3rd Avenue to NW 7th Avenue
Miami, Florida | USA



1. 5′ Bike Lane

Bicycle lane word and or symbol and arrow markings (MUTCD Figure 8C-3) shall be used to define the bike lane and designate that portion of the street for preferential use by bicyclists.

2. Green Colored Pavement

Green colored pavement may be used within a bicycle lane or within an extension of a bicycle lane to enhance the conspicuity of the bicycle lane or extension. Green colored pavement is a supplement to other pavement markings that are required for the designation of a bicycle lane. The use of green colored pavement for the entire length of the bicycle lane is consistent with the FHWA Interim Approval for the use of green colored pavement.

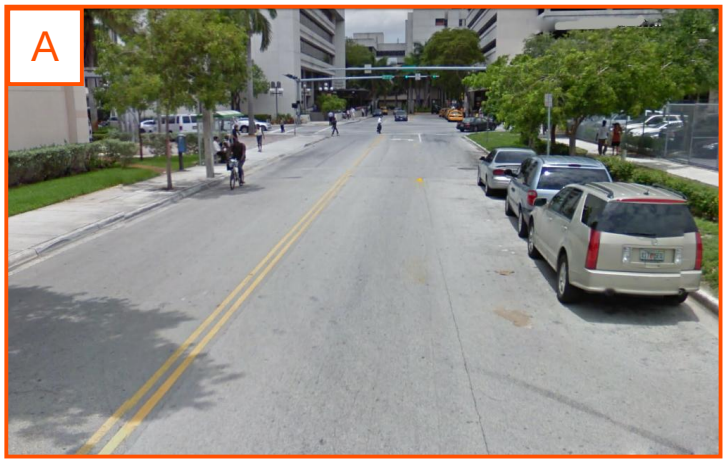
NW 17th STREET

Kimley-Horn and Associates, Inc.

10. **NW 17th Street from NW 7th Avenue to NW 9th Avenue –** *Corridor treatment to serve key trip purpose*

The removal of the centerline marking on NW 17th Street from NW 7th Avenue to NW 9th Avenue would allow for the installation of advisory bike lanes in both directions. This section of NW 17th operates as a two-lane undivided roadway with parking on either on or both sides, as shown in photos A and B, below. The recommended improvement strategy removes the centerline marking, implements advisory bike lanes, and designates parking on both sides. A rendering of the recommended improvements along this corridor is shown in Figure 8. FHWA Request to Experiment is required for advisory bike lanes.

A



B

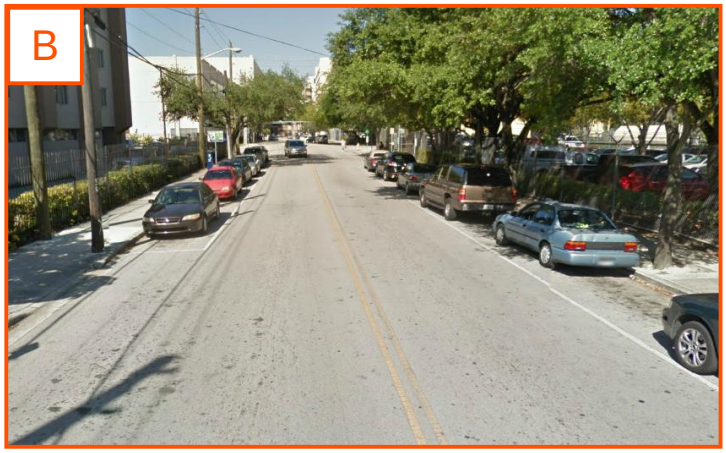


Figure 10. Advisory Bike Lane

NW 17th Street from NW 7th Avenue to Health District
Miami, Florida | USA

7′-0″
1 PARKING LANE

5′-0″
1 ADVISORY BIKE LANE

14′-0″
BI-DIRECTIONAL TRAVEL WAY

5′-0″
1 ADVISORY BIKE LANE

7′-0″
PARKING LANE

24′-0″
TRAVEL WAY

APPROXIMATE DIMENSIONS

1. Advisory Bike Lane

Advisory Bike Lanes give designated space to cyclists. Motor vehicles can pass oncoming traffic by merging into the advisory bike lanes after yielding to bicycles.

NW 17th STREET

Kimley-Horn and Associates, Inc.

11. **NW 4th Street from NW 8th Avenue to NW 14th Avenue - Marlins Stadium** – *Corridor treatment to serve key trip purpose*

NW 4th Street has the potential to serve as direct bike route from Downtown Miami to the Marlins Stadium via the NW 5th Street bridge. The recommended improvement strategy includes designated parking on both sides and advisory bike lanes on the 37-foot cross section from NW 8th Avenue to NW 10th Avenue, shown in photo A and highlighted in blue in Figure 11, and sharrows on the narrow sections from NW 10th Avenue to NW 14th Avenue, shown in photo B and highlighted in yellow in Figure 11.

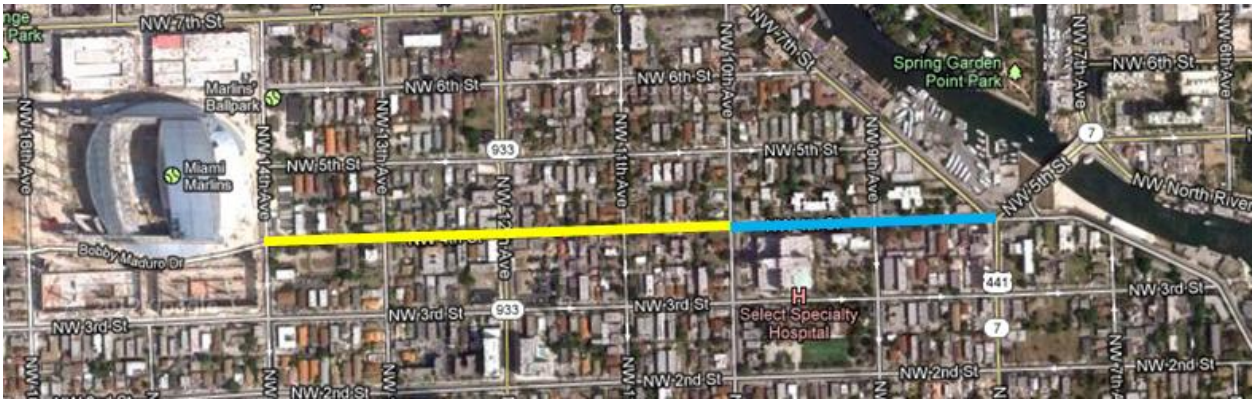


Figure 11. **NW 4th Street from NW 8th Avenue to NW 14th Avenue - Marlins Stadium**

12. **SW 16th Street from SW 107th Avenue to SW 94th Avenue - FIU** – *Corridor treatment to serve key trip purpose*

SW 16th Street runs straight into the heart of Florida International University's campus at SW 107th Avenue. The addition of bicycle lanes to this roadway would connect the campus to the residential area to the east. The typical section of SW 16th Street consists of two 12-foot lanes, with approximately 4 feet from the edge of pavement to the nearest object (typically a mailbox), and 18 feet from the edge of pavement to the front of sidewalk, as shown in photo A. Although, the 24-foot existing pavement does not allow for the addition of bike lanes, reconstruction of this roadway with an additional few feet on each side seems to be plausible. Figure 12 shows the alignment of this roadway in relation to FIU and the surrounding residential area.

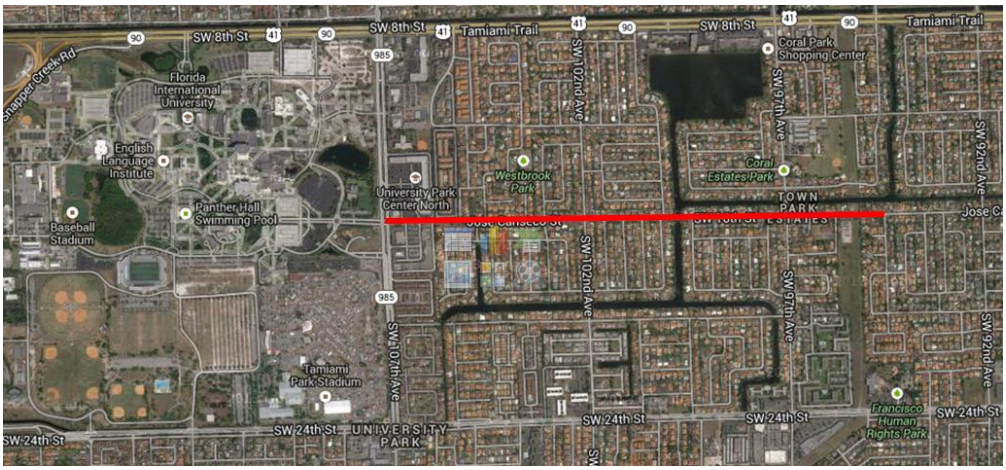


Figure 12. **SW 16th Street from SW 107th Avenue to SW 94th Avenue - FIU**

13. Brickell Key Drive Bridge – *Corridor treatment to serve key trip purpose*

The Brickell Key Drive bridge serves as the only link from Downtown Miami/Brickell to the predominantly residential Brickell Key. Currently the bridge has two lanes in each direction, shared lane markings (sharrows) on the outside lanes, and unprotected sidewalks on both sides, as seen in photo A. During a recent resurfacing project, the maintenance of traffic plan included converting one side of the bridge into a two-lane two-way section while the other side was closed, as seen in photo B. With this in mind, the recommended improvement plan consists of a road diet for the bridge, converting the two lanes in each direction to one lane in each direction with the addition of barriers or delineators and wider the sidewalks, as is roughly depicted in Figure 13.

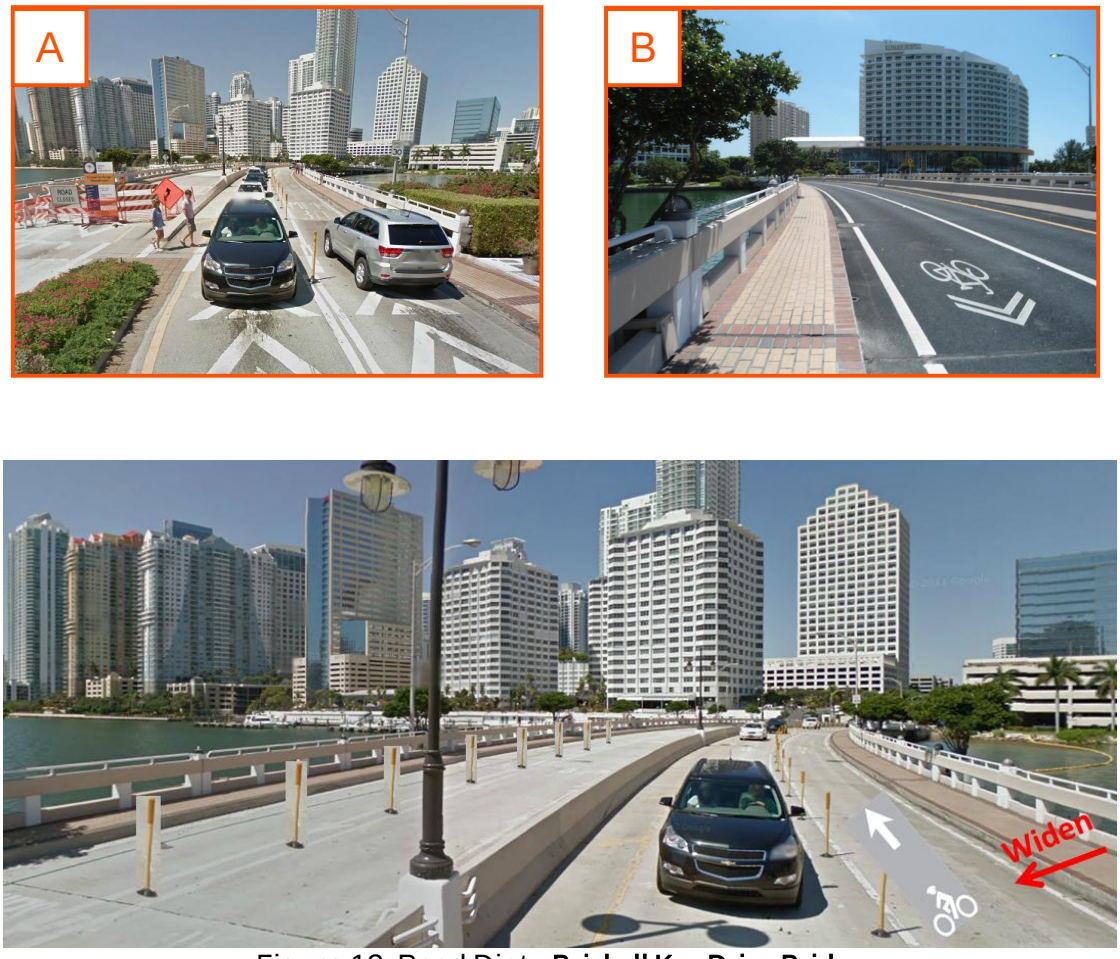
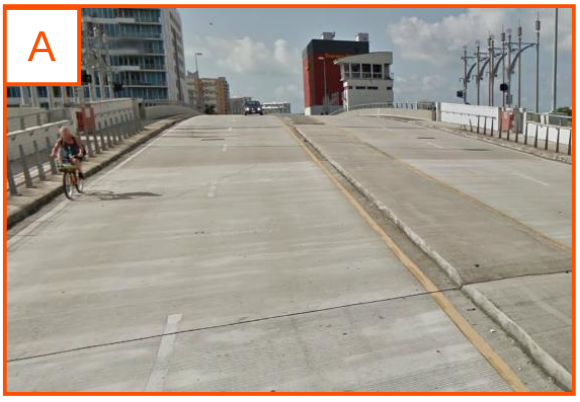


Figure 13. Road Diet - **Brickell Key Drive Bridge**

14. Brickell to Health District – *Corridor treatment to serve key trip purpose*

One of the most common bicycle trip purposes in Miami-Dade County is from the residential buildings in Brickell to the workplaces, schools, and medical offices in the Health District. Currently there are bike lanes on SW 15th Road in the Brickell area, on SW 2nd Avenue up to SW 8th Street, and on NW 1st Place from NW 11th Terrace to NW 14th Street. The recommended improvements on NW 17th Street previously mentioned in this study will provide bicycle facilities on the northern end of this route. Figure 14, on the next page, depicts the premium route for this trip purpose and the existing and recommended facilities along the route. It is recommended that the segments highlighted in red be considered for installation of bike lanes. If bike lanes on these segments are found to not be feasible, then the application of sharrows should be considered. An important part of this route is the NW 2nd Avenue bridge over the Miami River. The cross-section of the bridge consists of 6.5 feet of sidewalk and 24 feet of pavement in each direction with a just under 7-foot raised/open-grate median in the middle, as seen in photo A. With the existing cross-section and the open-grate median on the span of the drawbridge (photo B), bicycle lanes are not feasible without reconstruction.



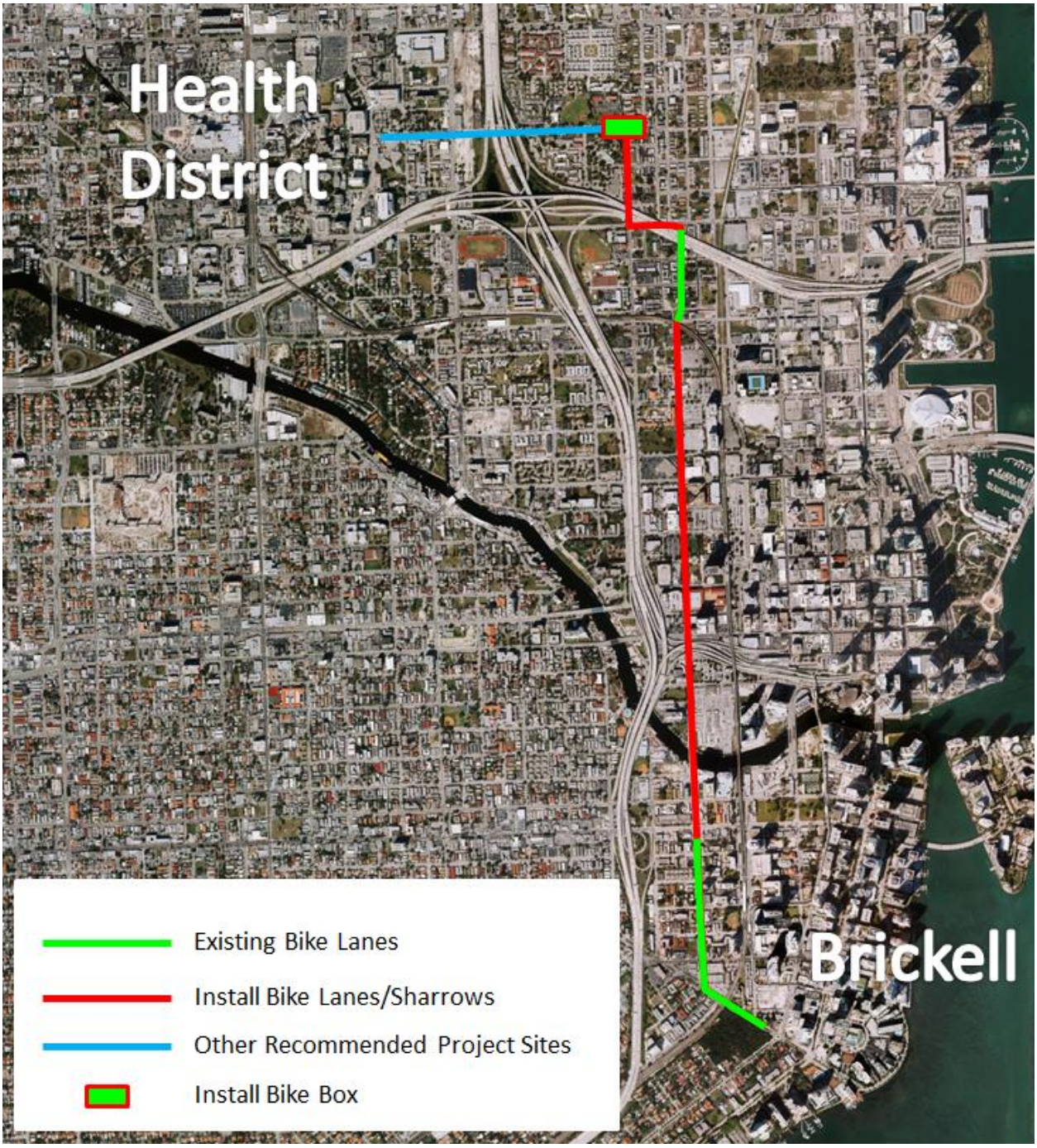
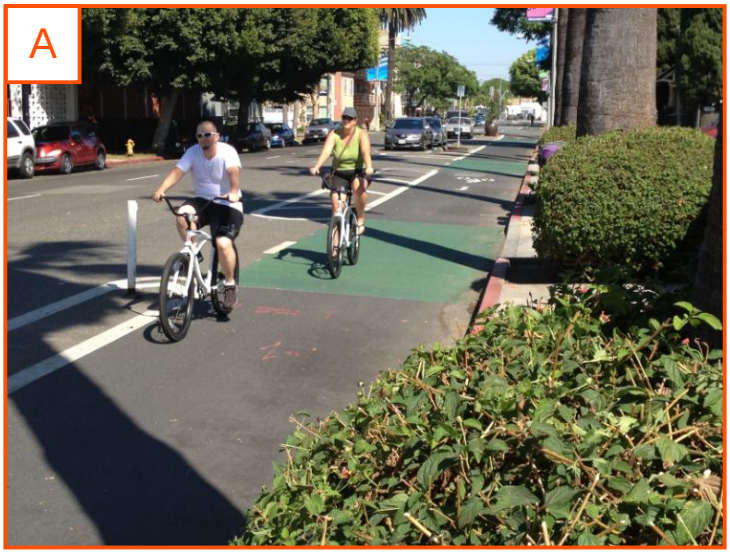


Figure 14. Corridor Bicycle Treatments - **Brickell to Health District**

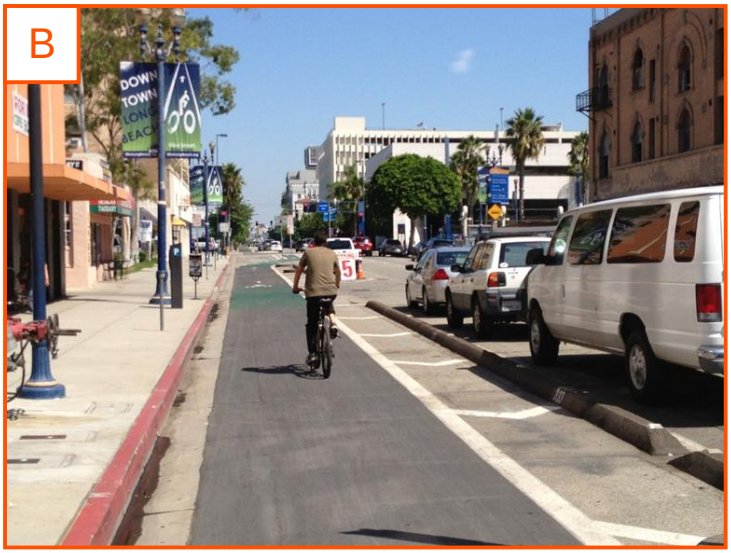
15. **Downtown Miami Buffered/Barriered Bike Lane Network –** *Corridor treatment to serve key trip purpose*

The one-way pairs of Downtown Miami provide the opportunity for a network of one-way buffered or barriered bike lanes, depending on the segment's cross-section. Photo A shows and example of a buffered one-way cycle track in Long Beach, CA. Similarly, photo shows a barriered one-way cycle track in Long Beach, Ca. The four proposed roadways – N 5th Street, N 6th Street, N Miami Avenue, and NE 1st Avenue – are highlighted in Figure 15. All four roadways currently have AADT's less than 7,000 vehicles per day and operate at LOS C. FHWA Request to Experiment is required for green bike lanes.

A



B



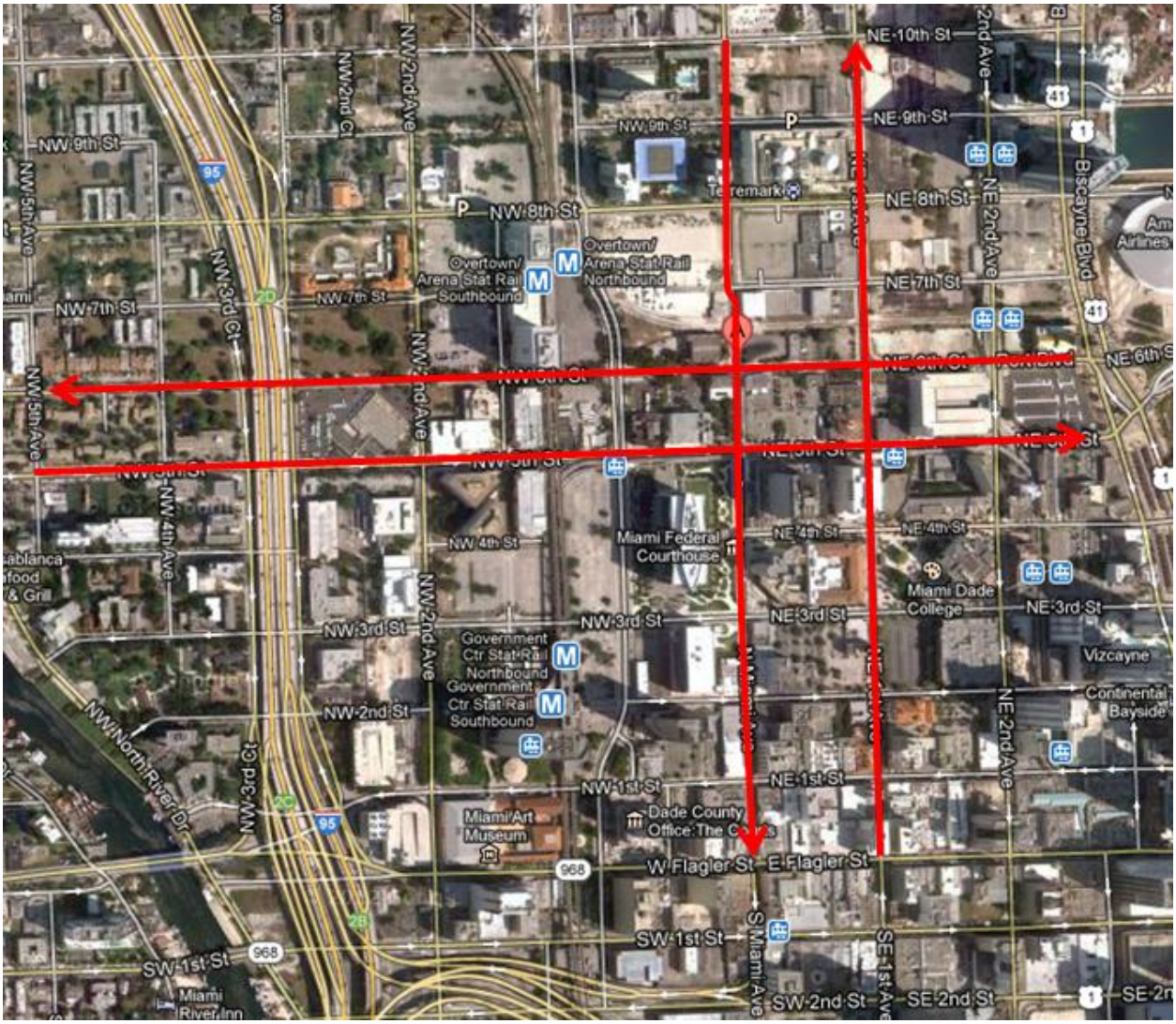


Figure 15. **Downtown Miami Buffered/Barriered Bike Lane Network**

16. Pine Tree Drive – Miami Beach – *Corridor treatment to serve key trip purpose*

Pine Tree Drive serves as a major north/south corridor through the residential area of Miami Beach from Dade Boulevard to W 63rd Street. The majority of the four-lane stretch from Dade Boulevard to W 51st Street has on-street parking on either one or both sides of the street. At W 51st Street, the corridor splits into two-lane one-way pairs – northbound Pine Tree Drive and southbound La Gorce Drive. Based on the existing geometry and speeds along the corridor, the recommended improvements for this corridor include green bike lanes on the southern portion of the corridor, which will require widening, either green bikes lanes or advisory bike lanes on the central portion, and bicycle boulevards through the one-way pair portion of the corridor, as shown in Figure 16. FHWA Request to Experiment is required for green bike lanes.

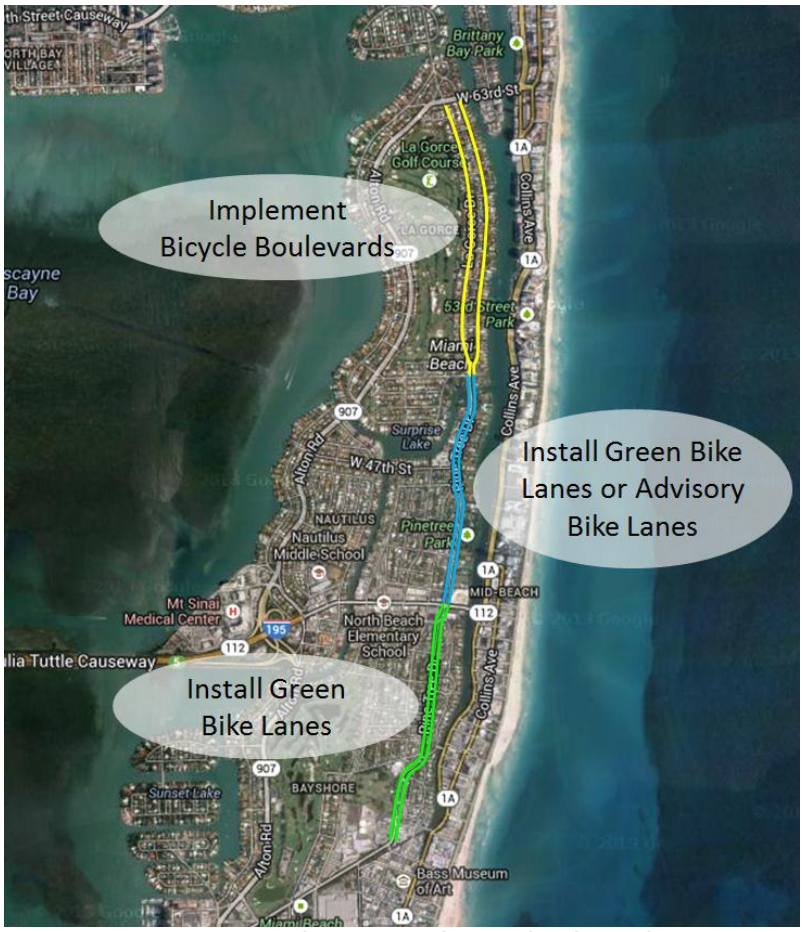


Figure 16. **Pine Tree Drive – Miami Beach**

17. **S 1st Street from SW 17th Avenue to Biscayne Boulevard –** *Corridor treatment to serve key trip purpose*

The plans for a current FDOT reconstruction project include installing bike lanes on SW 1st Avenue west of SW 17th Avenue. As stated in the previous section of this study, S 1st Street is a one-way eastbound road with on-street parking on one or both sides of the roadway from SW 17th Street to Biscayne Boulevard with the exception of the segment over the Miami River which is four lanes without parking. The corridor serves from three to sixteen bus routes at any point between the limits identified. The recommended improvement strategy for this corridor is to convert one of the travel lanes into a shared bus and bike lane. The corridor currently operates at either LOS C or LOS D and preliminary analysis shows that it is expected to continue to operate at LOS C or LOS D with one fewer general travel lanes. A similar type facility with adjacent on-street parking is shown in photo A. Figure 17 shows a sketch of the layout of the shared bus and bike lane for the most common cross-section of the corridor which includes parking on both sides. Note, this is not the recommended design for all sections of the corridor.

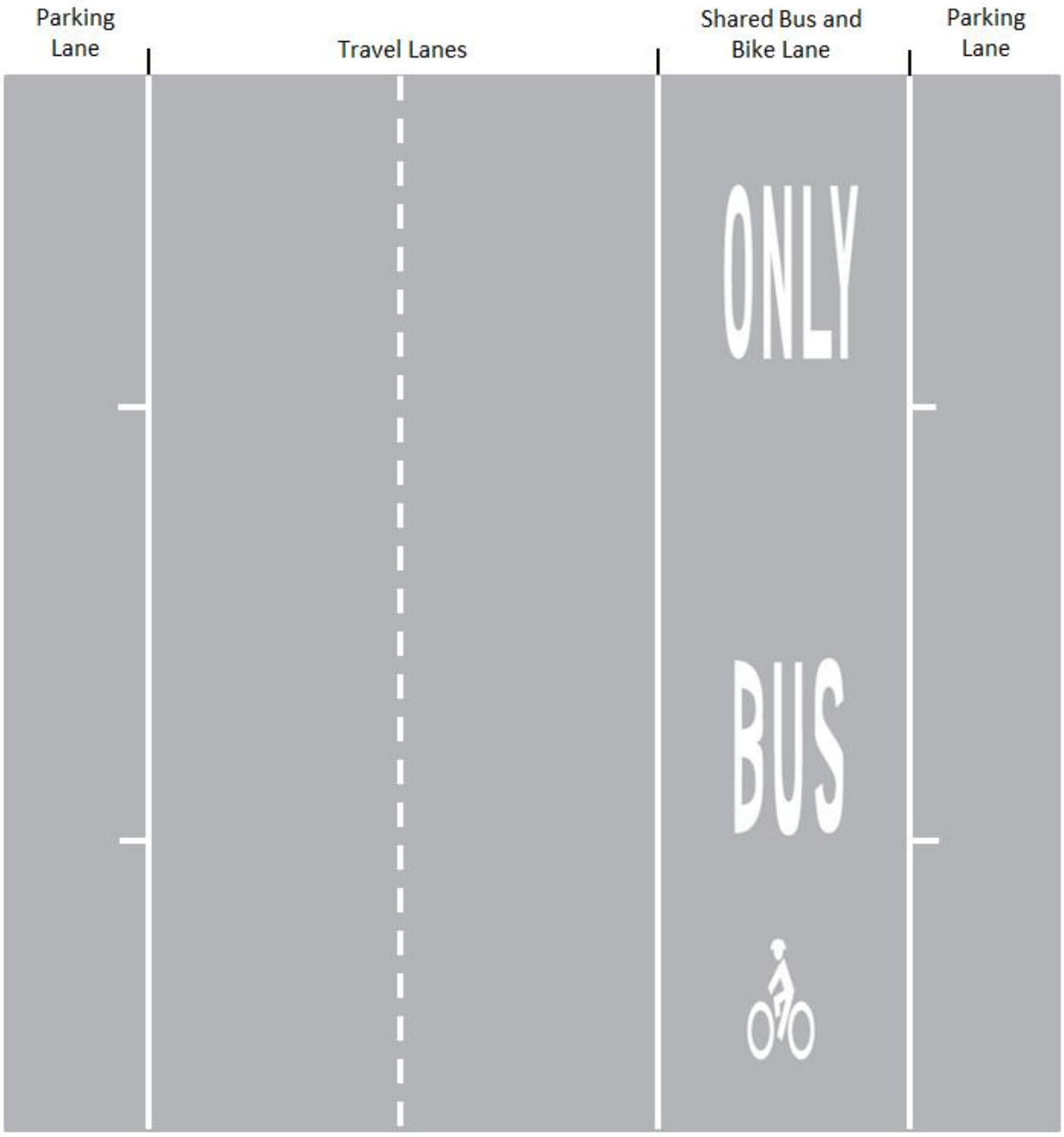


Figure 17. **Shared Bus and Bike Lane – S 1st Street**

18. **MacArthur Causeway, East of Watson Island to Bridge Road –** *Innovative enhancement of an existing facility*

Installing a buffer between the motor vehicle travel lanes and the bike lanes on the MacArthur Causeway from Watson Island to Bridge Road would enhance the safety of bicyclists using existing bike lanes, shown in photo A. This can be accomplished during the causeway's next resurfacing project by narrowing each of the travel lanes in both directions by a foot to create a three foot buffer, as depicted in Figure 18 on the next page. FHWA Request to Experiment is required for green bike lanes.

A

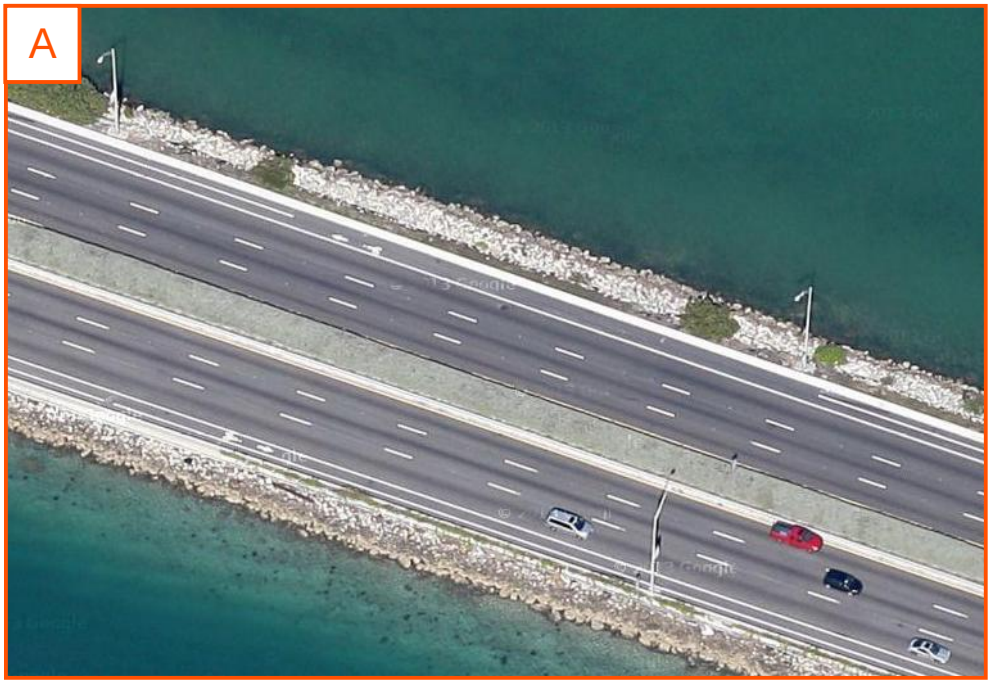
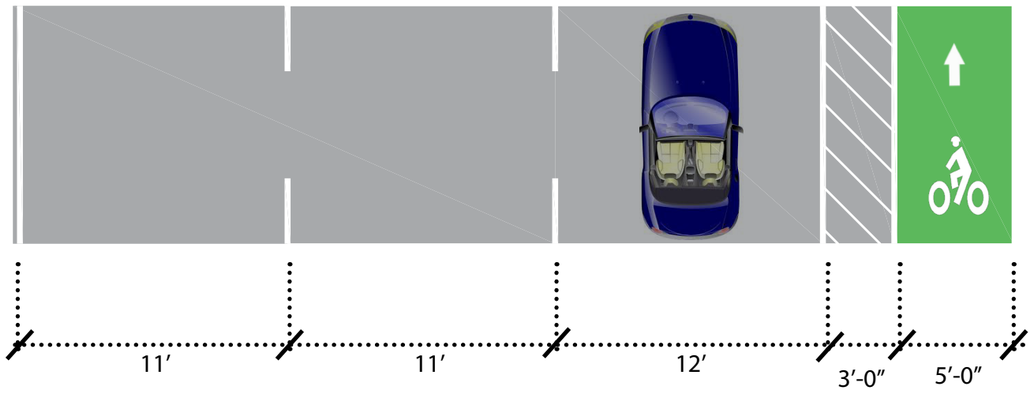


Figure 18. Buffered Bike Lane/Colored Pavement

MacArthur Causway
East of Watson Island to Bridge Road
Miami Beach, Florida | USA



1. Narrow Travel Lanes

Narrow center and outside travel lanes to allow for a 3′ buffer between the motor vehicle travel lanes and the bicycle lane in each direction.

2. Buffered Bike Lane

A buffered bike lane provides a more protected and comfortable space for cyclists. May have to transition out of buffer at intersections.

3. Green Colored Pavement

Green colored pavement may be used within a bicycle lane or within an extension of a bicycle lane to enhance the conspicuity of the bicycle lane or extension. Green colored pavement is a supplement to other pavement markings that are required for the designation of a bicycle lane. The use of green colored pavement for the entire length of the bicycle lane is consistent with the FHWA Interim Approval for the use of green colored pavement.

19. SR A1A and 96th Street – *Innovative enhancement of an existing facility*

A newly implemented southbound bike lane begins at the departure of the intersection of SR A1A/Harding Avenue and 96th Street, aligned with the southbound right-turn lane, as shown in photo A. The recommended improvement for this intersection is to install an "Except Bicycles" supplemental plaque to the "Right Lane Must Turn Right" sign assembly adjacent to the southbound right-turn lane, as depicted in Figure 19, to allow bicyclists to travel straight through the intersection from the right-most lane.

Figure 19. SR A1A and 96th Street

20. Snake Creek Trail at I-95/SFRC Crossing – *Innovative enhancement of an existing facility*

Improve the existing Snake Creek Trail underpass at I-95 by lowering the trail surface to improve the vertical clearance. Currently, the underpass consists of a series of descending steps as the trail approaches the interstate from each side, as shown in photo A. These steps should be removed to create a more gradual vertical slope. A retaining wall design can be used to meet elevation challenges. The underpass design (examples shown in Figure 20) allows for bicyclist energy conservation when compared to the alternative of an overpass design.

Figure 20. Trail Underpass

Snake Creek
I-95 and SFRC Crossing
Miami, Florida | USA

EXISTING CONDITIONS

1. Vertical Clearance Improvements

Improve vertical clearance through lowering the trail surface.

2. Retaining Wall

Use retaining wall design to meet elevation challenges.

"Dutch Principle"

Underpass design allows for bicyclist energy conservation when compared to overpass design.

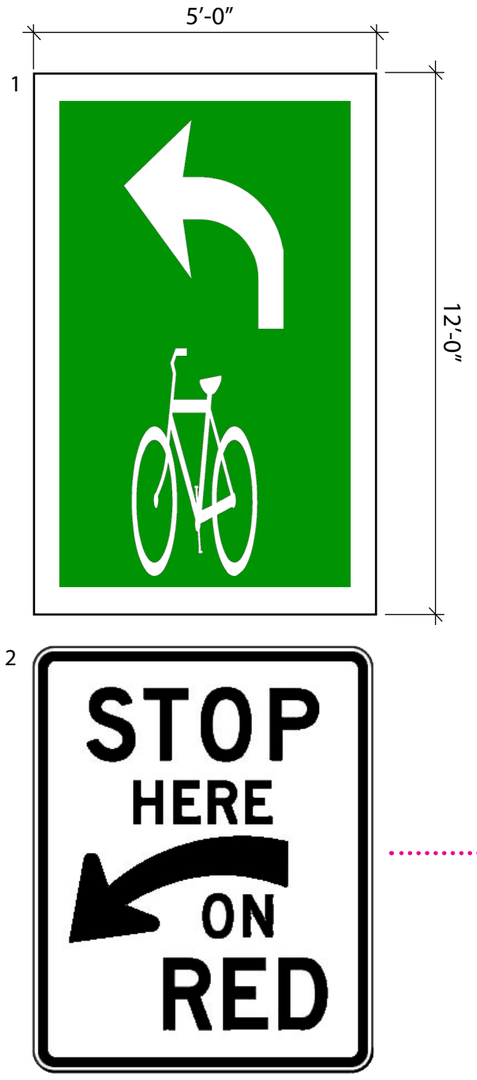
Kimley-Horn and Associates, Inc.

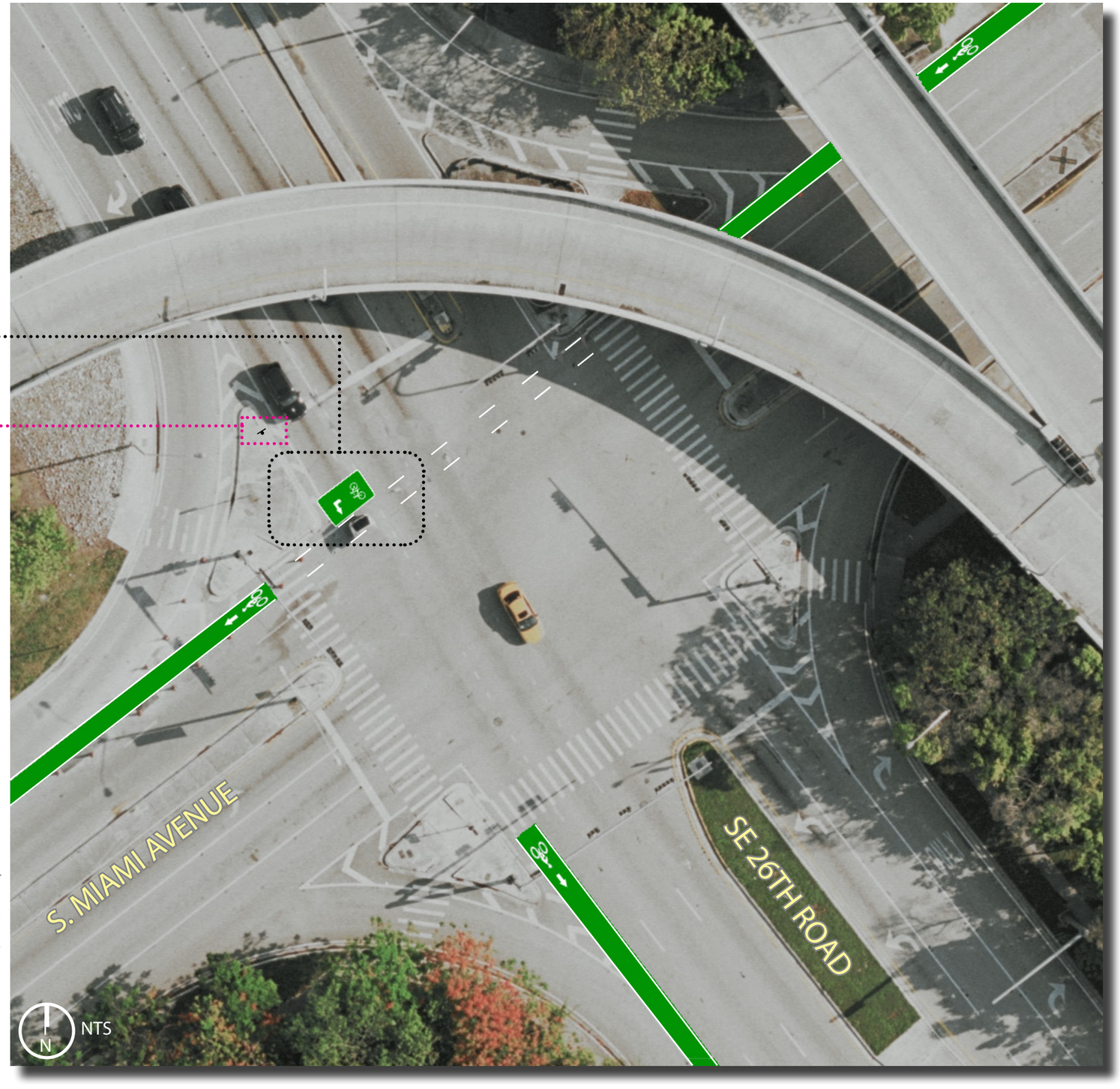
21. S Miami Avenue and S 26th Road – *Enhancement of a planned facility*

There are currently bike lanes on S Miami Ave from S 15th Road to S 25th Road and Miami-Dade County has plans to continue the bike lanes down the S 26th Road. Additionally, an FDOT project for S 26th Road includes the installation of bike lanes east of Miami Avenue. These two bicycle lane projects eliminate some of the missing bicycle facility links between the Brickell area and the Rickenbacker Causeway. It would be beneficial to provide a safer way for cyclists traveling southbound on Miami Avenue to make a left-turn at this multi-lane signalized intersection, as it is the junction of these two bicycle lane projects. The recommended improvement strategy for this intersection consists of installing a two-stage turn queue box and supporting signage, as depicted in Figure 21 on the next page. The queue box would be located at approximately the same location as the cyclists seen in photo A, below.

Figure 21. Two-Stage Turn Queue Box

SE 26th Road & S Miami Avenue
Miami, Florida | USA





1. Two-Stage Turn Queue Box

A two-stage turn queue box is a designated area at an intersection intended to provide bicyclists a place to wait for traffic to clear before proceeding in a different direction of travel. A two-stage turn queue box is most commonly used for left turns on multi-lane roadways.

A bicycle symbol shall be placed in the two-stage turn queue box oriented in the direction in which bicyclists enter the box, along with an arrow showing the direction of turn. Green color pavement may be used within the two-stage turn queue box.

2. R10-6A Street Sign

A "Stop Here On Red" sign should be post mounted to reinforce observance of the stop bar.

3. Green Color Pavement

Green colored pavement may be used within a bicycle lane or within an extension of a bicycle lane to enhance the conspicuity of the bicycle lane or extension. Green colored pavement is a supplement to other pavement markings that are required for the designation of a bicycle lane. The use of green colored pavement for the entire length of the bicycle lane is consistent with the FHWA Interim Approval for the use of green colored pavement.

22. SW 67th Avenue and SW 85th Street – Snapper Creek Phase 2 – *Enhancement of a planned facility*

To connect the proposed Snapper Creek Phase 2 to Snapper Creek Drive/SW 85th Street and the residential areas to the east, a trail connection is needed. SW 85th Street does not connect to SW 67th Avenue for motor vehicle traffic, as seen in photos A and B. The recommended improvement strategy at this intersection includes providing a trail connection that will provide a link to SW 85th Street while still restricting motor vehicle traffic, installing Rectangular Rapid Flashing Beacons (RRFBs) at the trail crossing, and using zig-zag pavement markings on SW 67th Avenue as advanced warning of the trail crossing. A rendering of the recommended improvements is included in Figure 22.

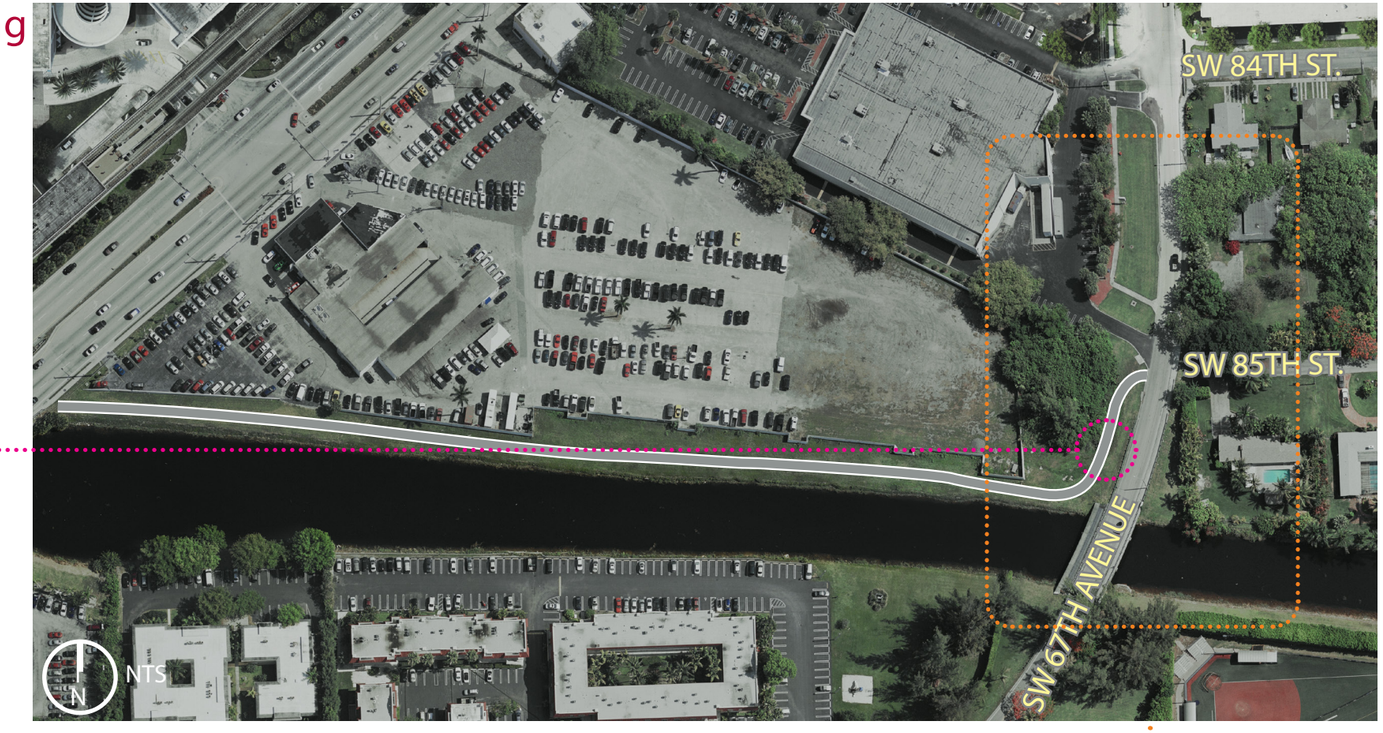
A

B

Figure 22. Trail Crossing/Zig-Zag Pavement Marking

Snapper Creek Trail - Segment B
SW 67th Avenue & SW 85th Street
Miami, Florida | USA

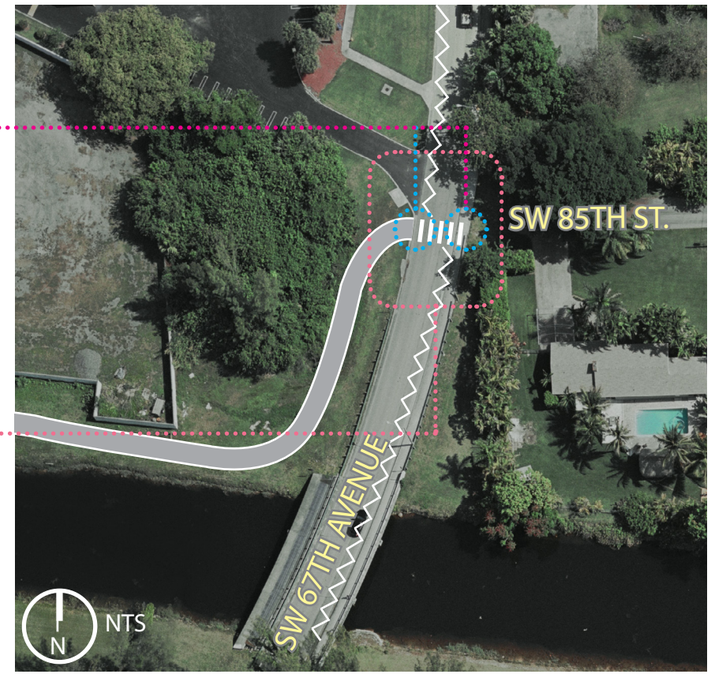
1



2

3

4



1. Shared-Use Path

Proposed enhancements would link Dixie Highway / M Path to Dante Fascell Park and Red Road Linear Park.

2. Rectangular Rapid Flashing Beacon

Rectangular Rapid Flashing Beacons (RRFBs) are crossing signals that notify motorists with an alternating wig-wag flashing pattern when activated.

3. Bollards

A trail connection with bollards will provide a link to SW 85th Street that restricts motor vehicle traffic.

4. Zig-Zag Pavement Marking

This unique pavement marking provides motorists with an additional warning of an upcoming crossing.

Kimley-Horn and Associates, Inc.

23. Allapattah Metrorail Station – *Enhancement of Bike Access to Transit*

It is important to provide bicycle access to major transit centers, including Metrorail stations. Plans are underway to install sharrows on NW 36th Street and NW 12th Avenue, the two major roadways adjacent to the Allapattah Metrorail Station. To enhance the access to this station it is recommended to install bicycle parking directional signage at the station entrance, sharrows on the southbound bus driveway at the station, and sharrows along NW 33rd Street just south of the station, as shown in Figure 23.

Figure 23. Bicycle Access - **Allapattah Metrorail Station**

24. Coconut Grove Metrorail Station – *Enhancement of Bike Access to Transit*

A major component of integrating these two modes of transportation is providing ample and secure bicycle parking at transit facilities. The recommended improvement strategy at the Coconut Grove Metrorail station includes creating a bicycle parking depot at the east end of the main level of the station. Figure 24 depicts the location of the proposed depot and an example of bicycle parking at a transit station.

Figure 24. Bicycle Parking Depot - Coconut Grove Metrorail Station

25. Hialeah Metrorail Station – *Enhancement of Bike Access to Transit*

The entrances to the Hialeah Metrorail Station are located at its east and west ends, adjacent to signalized intersections. Currently pedestrians and bicyclists entering the station from these intersections must travel along the sidewalks along 20th Street before entering the station. The recommended improvement strategy consists of creating public plazas at the entrances at each end to allow for more open and immediate access to the station from the intersections, as shown in Figure 25.

Figure 25. Public Plaza Entrances - **Hialeah Metrorail Station**

26. Douglas Road Metrorail Station – *Enhancement of Bike Access to Transit*

The pedestrian overpass over S Dixie Highway/US 1 adjacent to the Douglas Road Metrorail Station provides more direct access between the station and the southern side of US 1; however, the stairs at each end of the overpass present an obstacle for bicycles. It is recommended to install rails or channels on the edges of the stairways of the overpass and the station to make it easier to walk bikes up and down the stairs. Figure 26 depicts the location of the overpass and examples of rails and channels on stairs for bicycles.

Figure 26. Bicycle Stair Rails/Channels - **Douglas Road Metrorail Station**

Bike Barometer

The installation of bike barometers along key bicycle corridors throughout Miami-Dade County is on the recommended encouragement tools. A bike barometer counts the number of bicycles that pass the device each day and can display varied information such as the daily count, the total so far this year, and last year's total count. Because it displays real-time count information that is highly visible by both cyclists and motorists, it raises the awareness of cycling in an area.

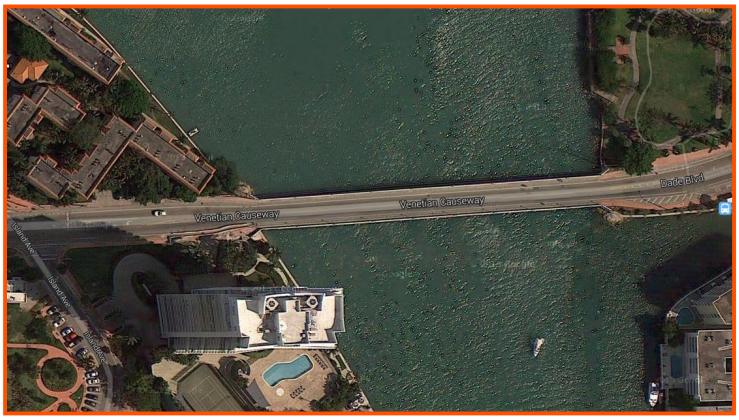
There are several types of bike barometer counting technologies available including infrared sensors, inductive loops, and pneumatic hoses. Infrared sensors detect body temperature and count each time a warm, moving object passes – including bicyclists, pedestrians, runners, and skateboarders. The use of infrared sensors for bike barometers without the aid of other technologies is only recommended for bicycle-exclusive facilities where other types of users are not expected to travel. For inductive loops, the presence of a metal bicycle breaks the magnetic field and sends a signal to the counter, similar to inductive loop detectors at signalized intersections. The combination of infrared sensors and inductive loops can count multiple types of users while still identifying bicycle-use. The pneumatic hoses send a radio signal to the counter that is created from the change of pressure when bicycle rolls over the hoses. Pneumatic hoses are not recommended for application in Miami-Dade County as many locations within the county that experience high bicycle-use also have high pedestrian-use and these hoses may be seen as tripping hazard for pedestrians.

It is recommended that bike barometers only be placed in locations with established bicycle use. A low count that would be displayed on a facility with insignificant use would not have the desired outcome of awareness and encouraging more cycling in the area. A list of recommended installation locations in Miami-Dade County is provided below.

- Entrance to the Rickenbacker Causeway – near the toll plaza with inductive loop or combination of infrared sensor and inductive loop

- M-Path near the University of Miami

- Venetian Causeway – west of Miami Beach, preferably east of the first intersection on Belle Isle



Online Bicycle Registration

The development of an online bicycle registration program for the residents of Miami-Dade County is one of the recommended enforcement tools. A bicycle registration program can significantly reduce bicycle theft and aid police in theft recovery. The Miami-Dade Police Department (MDPD) currently has a Bicycle Registration program in place; however, the program requires bicycle owners to fill out a form and mail it in or drop it off at a MDPD district station. Creating an online system would make registration more seamless and user-friendly.

The MPDP Bike Registration program relies on the manufacturer's serial number. Successful online bike registration programs in other municipalities include either engraving of a registration number on the bike or decals for owners to affix to their bikes. It is recommended that the Miami-Dade program include a decal or engraving to identify registered bicycles. Additionally, the registration program should include collaboration with local bike shops to encourage participation in the program and to ensure that they do not to repair, buy, or resell bikes that may be stolen.

Bicycle Program Progress Report

To supplement bicycle count information, a bi-annual bicycle program progress report is one of the recommended evaluation tools. Copenhagen's *Bicycle Account* includes information on the current status, initiatives, and benefits of the city's bicycle program. The current status of the program is based on survey responses from cyclists on the performance of the city's bicycle program, data relating to cycling levels, types and amounts of facilities, trip purposes, safety, and cyclist characteristics. Although the survey interviewees were randomly selected, only the responses from cyclists – defined as "a person for whom the bicycle is either the preferred mode of transport or a person who uses a bicycle a minimum of once a week" – were used for certain tracking purposes, while responses from cyclists versus non-cyclists were used for other data comparisons. The *Bicycle Account* should be studied and used as a model for developing the bicycle program progress report for Miami-Dade County. Key information that should be included are:

- Survey of cyclists' satisfaction with different aspects of the bicycle program, safety concerns, and residents' attitudes towards cycling
- Key figures on bicycle use, safety, and facilities with targeted goals for the future
- Information on future bicycle facilities and innovations within the county
- Benefits of cycling, including health, economic, and pollution statistics

The goals of this type of bi-annual report for Miami-Dade County are to track progress related to all things cycling, hold the stakeholders accountable for the future goals set forth in the report, and inspire the county's residents to become more involved in the program and bike more frequently.

APPENDIX A:
Bicycle Facilities and the MUTCD

Description of Bicycle Facilities	Status in the FHWA's Manual on Uniform Traffic Control Devices (MUTCD)	Are FHWA Experiments in Progress?
Signs and Markings		
Bike Lanes		
Conventional bike lanes	Can be implemented at present time	
Continuation of bike lanes up to intersections	Can be implemented at present time	
Dashed bike lanes through intersections	Can be implemented at present time	
Use of green pavement markings for bike lanes and cycle tracks within intersections	Interim approval has been granted. Requests to use green colored pavement need to comply with the provisions of Paragraphs 14 through 22 of Section 1A.10	Yes
Green bike lanes at conflict points such as heavy turning and merging locations	Interim approval has been granted. Requests to use green colored pavement need to comply with the provisions of Paragraphs 14 through 22 of Section 1A.10	Yes
Green bike lanes or green behind bike lane symbols and arrows	Interim approval has been granted. Requests to use green colored pavement need to comply with the provisions of Paragraphs 14 through 22 of Section 1A.10	Yes
Contraflow bike lanes	Can be implemented at present time if signs and pavement markings that are compliant with the MUTCD are used	
Combined bike lane/turn lane	Experimental if bike lane markings are used, but can be implemented at the present time if Shared Lane Markings are used instead of bike lane markings	Yes
Dashed bike lanes on narrow roadways (advisory bike lanes)	This treatment is currently experimental	Yes
Buffered bike lanes	Can be implemented at present time if pavement markings that are compliant with the MUTCD are used	Yes
Bike lanes between traffic lanes on approaches to lane drop conditions	Can be implemented at present time	
Bike lanes on left-hand side of one-way streets	Can be implemented at present time	
Cycle Tracks		
Protected cycle tracks, both one-way and two-way bicycle facilities	Not a traffic control device, so no MUTCD restriction on its use	
Raised cycle tracks, both one-way and two-way bicycle facilities	Not a traffic control device, so no MUTCD restriction on its use	
Cycle track two-stage signalized left turn with bike queuing space	Can be implemented at present time if signs and pavement markings that are compliant with the MUTCD are used	
Merging cycle track users with turn lanes in advance of high volume turn locations, allowing bicyclists to make a through movement at the intersection in order to reduce conflicts with the turning traffic	Can be implemented at present time if signs and pavement markings that are compliant with the MUTCD are used	
Truncated cycle track (ramp down to bike lane or shared right-turn lane)	Not a traffic control device, so no MUTCD restriction on its use	
Other Signs and Markings		
Shared lane markings	Can be implemented at present time	
Bike boxes with advanced stop lines for motor vehicles and no-turn-on-red restrictions on the approach	Currently is experimental; more research data is needed before a final decision can be made regarding this application	Yes
Accommodating two-stage "delayed" left turns at signalized intersections via pavement markings and signal detection	Can be implemented at present time if signs and pavement markings that are compliant with the MUTCD are used	
Bike route wayfinding and marking system	Can be implemented at present time if signs and pavement markings that are compliant with the MUTCD are used, but currently is experimental if a non-compliant sign or marking is used	Yes
Rotated bicycle symbols in bike lanes at intersections and driveways oriented towards turning or entering motorists	Can be implemented at present time	
Defining orange pavement markings for temporary traffic control usage to draw attention to the changed conditions, including for bike lanes, pedestrian crosswalks, yield markings, etc.	Not allowed by the MUTCD; no experiments are being conducted regarding this treatment	

Defining unique, high-visibility pavement markings for bicycles and pedestrians (similar to Swiss usage of yellow for bike lanes and pedestrian crosswalks)	Not allowed by the MUTCD; no experiments are being conducted regarding this treatment	
Active warning beacon for a bike boulevard	Can be implemented at present time	
Signals		
Bicycle traffic signal indications	Bike symbols on traffic signal displays are currently experimental	Yes
Bicycle traffic signal phasing at signalized intersections (such as protected lagging right turns for motorists made after through movement bicycle traffic)	Can be implemented at present time if circular indications are used for the bicycle signal with a "BIKE SIGNAL" sign adjacent to the signal face	
Hybrid beacon for bike boulevard or other bike route crossing	Bikes can be assisted in crossing a roadway by a pedestrian hybrid beacon type of device at the present time, but bike symbols on traffic signal displays are currently experimental	Yes
Signal detection for bicycles	Can be implemented at present time	
Right-turn-on-red motor vehicle restrictions	Can be implemented at present time	
Other Treatments		
Separation of travel modes on shared-use paths	Can be implemented at present time	
Railing separating bicyclists and pedestrians at cycle tracks approaching signalized intersections	Not a traffic control device, so no MUTCD restriction on its use	
Convex mirrors at signalized intersections to reduce "right hook" type crashes	Not a traffic control device, so no MUTCD restriction on its use	
Bike routes on lower volume parallel roadways	Not a traffic control device, so no MUTCD restriction on its use	
Median or refuge islands for bikeway crossings	Not a traffic control device, so no MUTCD restriction on its use	

APPENDIX B:
Data Collection and Analysis

Segment Counts

R.J. Behar & Company

ENGINEERS - PLANNERS

6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 1
NW 17 St between
NW 3 Ave and NW 7 Ave

Date Start: 23-May-13

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	0	0	2	8	5	3	2	0	1	0	0	0	0	0	21
01:00	0	0	0	3	9	2	1	0	0	0	0	0	0	0	15
02:00	0	0	1	2	1	0	0	1	0	0	0	0	0	0	5
03:00	0	0	0	5	2	1	0	0	0	0	0	0	0	0	8
04:00	0	0	2	0	2	3	0	0	0	0	0	0	0	0	7
05:00	0	0	0	3	5	3	0	0	0	0	0	0	0	0	11
06:00	1	0	2	16	6	10	2	0	0	0	0	0	0	0	37
07:00	4	5	14	27	23	23	4	2	0	0	0	0	0	0	102
08:00	3	0	11	12	25	8	7	1	0	0	0	0	0	0	67
09:00	2	4	8	13	24	11	1	0	0	0	0	0	0	0	63
10:00	2	0	3	15	21	11	1	1	0	0	0	0	0	0	54
11:00	3	0	7	10	27	13	5	3	0	0	0	0	0	0	68
12 PM	4	2	10	23	28	19	7	1	1	0	0	0	0	0	95
13:00	2	1	6	19	39	15	2	2	0	0	0	0	0	0	86
14:00	2	1	10	31	35	16	3	0	0	0	0	0	0	0	98
15:00	5	0	7	29	39	14	7	0	1	0	0	0	0	0	102
16:00	0	0	3	25	34	15	6	1	1	0	0	0	0	0	85
17:00	4	0	2	29	31	21	9	0	0	1	0	0	0	0	97
18:00	1	2	5	20	24	15	6	1	0	0	0	0	0	0	74
19:00	0	2	8	22	20	12	1	2	0	0	0	0	0	0	67
20:00	1	0	4	11	21	9	1	1	0	0	0	0	0	0	48
21:00	0	0	4	10	17	10	3	1	0	0	0	0	0	0	45
22:00	0	0	3	15	12	8	3	0	1	0	0	0	0	0	42
23:00	0	0	7	9	9	7	2	0	0	0	0	0	0	0	34
Total	34	17	119	357	459	249	73	17	5	1	0	0	0	0	1331
Grand Total	34	17	119	357	459	249	73	17	5	1	0	0	0	0	1331

	15th Percentile :	26 MPH
	50th Percentile :	32 MPH
	85th Percentile :	38 MPH
	95th Percentile :	42 MPH
Stats	Mean Speed(Average) :	32 MPH
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	816
	Percent in Pace :	61.3%
	Number of Vehicles > 55 MPH :	1
	Percent of Vehicles > 55 MPH :	0.1%

R.J. Behar & Company
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Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	1	1	3	5	9	6	4	0	0	0	0	0	0	0	29
01:00	1	0	1	5	3	1	1	0	0	0	0	0	0	0	12
02:00	0	1	1	1	1	0	1	0	0	0	0	0	0	0	5
03:00	0	0	2	1	1	0	0	0	0	0	0	0	0	0	4
04:00	0	1	0	3	2	0	1	0	0	0	0	0	0	0	7
05:00	1	1	4	4	6	5	0	0	0	0	0	0	0	0	21
06:00	1	1	5	16	19	10	2	0	0	0	0	0	0	0	54
07:00	2	1	22	47	23	11	1	0	0	0	0	0	0	0	107
08:00	4	3	22	23	26	7	1	0	0	0	0	0	0	0	86
09:00	0	2	7	18	23	6	1	3	0	0	0	0	0	0	60
10:00	4	2	4	19	15	8	1	1	0	0	0	0	0	0	54
11:00	3	5	9	12	30	12	4	0	0	0	0	0	0	0	75
12 PM	1	2	4	24	19	7	2	1	0	0	0	0	0	0	60
13:00	3	0	12	18	17	14	1	1	1	0	0	0	0	0	67
14:00	2	1	11	31	34	14	3	1	0	0	0	0	0	0	97
15:00	3	2	13	33	34	23	6	0	0	0	0	0	0	0	114
16:00	1	3	8	29	25	16	5	1	0	0	0	0	0	0	88
17:00	2	2	14	23	36	24	5	0	0	0	0	0	0	0	106
18:00	5	2	9	21	18	9	1	2	0	0	0	0	0	0	67
19:00	1	0	8	13	21	8	3	3	0	0	0	0	0	0	57
20:00	3	4	7	20	19	9	0	1	0	0	0	0	0	0	63
21:00	0	2	10	18	8	2	0	0	0	0	0	0	0	0	40
22:00	0	3	5	9	8	7	1	2	0	0	0	0	0	0	35
23:00	0	0	3	9	11	4	1	0	0	0	0	0	0	0	28
Total	38	39	184	402	408	203	45	16	1	0	0	0	0	0	1336
Grand Total	38	39	184	402	408	203	45	16	1	0	0	0	0	0	1336

	15th Percentile :	24 MPH
	50th Percentile :	31 MPH
	85th Percentile :	37 MPH
	95th Percentile :	40 MPH
Stats	Mean Speed(Average) :	30 MPH
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	810
	Percent in Pace :	60.6%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

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Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	1	1	5	13	14	9	6	0	1	0	0	0	0	0	50
01:00	1	0	1	8	12	3	2	0	0	0	0	0	0	0	27
02:00	0	1	2	3	2	0	1	1	0	0	0	0	0	0	10
03:00	0	0	2	6	3	1	0	0	0	0	0	0	0	0	12
04:00	0	1	2	3	4	3	1	0	0	0	0	0	0	0	14
05:00	1	1	4	7	11	8	0	0	0	0	0	0	0	0	32
06:00	2	1	7	32	25	20	4	0	0	0	0	0	0	0	91
07:00	6	6	36	74	46	34	5	2	0	0	0	0	0	0	209
08:00	7	3	33	35	51	15	8	1	0	0	0	0	0	0	153
09:00	2	6	15	31	47	17	2	3	0	0	0	0	0	0	123
10:00	6	2	7	34	36	19	2	2	0	0	0	0	0	0	108
11:00	6	5	16	22	57	25	9	3	0	0	0	0	0	0	143
12 PM	5	4	14	47	47	26	9	2	1	0	0	0	0	0	155
13:00	5	1	18	37	56	29	3	3	1	0	0	0	0	0	153
14:00	4	2	21	62	69	30	6	1	0	0	0	0	0	0	195
15:00	8	2	20	62	73	37	13	0	1	0	0	0	0	0	216
16:00	1	3	11	54	59	31	11	2	1	0	0	0	0	0	173
17:00	6	2	16	52	67	45	14	0	0	1	0	0	0	0	203
18:00	6	4	14	41	42	24	7	3	0	0	0	0	0	0	141
19:00	1	2	16	35	41	20	4	5	0	0	0	0	0	0	124
20:00	4	4	11	31	40	18	1	2	0	0	0	0	0	0	111
21:00	0	2	14	28	25	12	3	1	0	0	0	0	0	0	85
22:00	0	3	8	24	20	15	4	2	1	0	0	0	0	0	77
23:00	0	0	10	18	20	11	3	0	0	0	0	0	0	0	62
Total	72	56	303	759	867	452	118	33	6	1	0	0	0	0	2667
Grand Total	72	56	303	759	867	452	118	33	6	1	0	0	0	0	2667

	15th Percentile :	25 MPH
	50th Percentile :	31 MPH
	85th Percentile :	38 MPH
	95th Percentile :	42 MPH
Stats	Mean Speed(Average) :	31 MPH
	10 MPH Pace Speed :	26-35 MPH
	Number in Pace :	1626
	Percent in Pace :	61.0%
	Number of Vehicles > 55 MPH :	1
	Percent of Vehicles > 55 MPH :	0.0%

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Site Code: Seg 1
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Date Start: 23-May-13

Start Time	23-May-13 Thu	Eastboun	Westboun	Total
12:00 AM		21	29	50
01:00		15	12	27
02:00		5	5	10
03:00		8	4	12
04:00		7	7	14
05:00		11	21	32
06:00		37	54	91
07:00		**102**	**107**	**209**
08:00		67	86	153
09:00		63	60	123
10:00		54	54	108
11:00		68	75	143
12:00 PM		95	60	155
01:00		86	67	153
02:00		98	97	195
03:00		**102**	**114**	**216**
04:00		85	88	173
05:00		97	106	203
06:00		74	67	141
07:00		67	57	124
08:00		48	63	111
09:00		45	40	85
10:00		42	35	77
11:00		34	28	62
Total		1331	1336	2667
Percent		49.9%	50.1%	
AM Peak		07:00	07:00	07:00
Vol.		102	107	209
PM Peak		15:00	15:00	15:00
Vol.		102	114	216
Grand Total		1331	1336	2667
Percent		49.9%	50.1%	

ADT ADT 2,667 AADT 2,667

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 2
NW 17 St between
NW 7 Ave and NW 10 Ave

Date Start: 23-May-13

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	5	6	8	7	3	0	0	0	0	0	0	0	0	0	29
01:00	3	4	0	11	2	0	0	0	0	0	0	0	0	0	20
02:00	0	0	3	2	2	0	0	0	0	0	0	0	0	0	7
03:00	4	0	2	0	0	0	0	0	0	0	0	0	0	0	6
04:00	4	7	1	2	2	0	0	0	0	0	0	0	0	0	16
05:00	7	13	11	6	1	0	0	0	0	0	0	0	0	0	38
06:00	17	38	30	15	1	0	0	0	0	0	0	0	0	0	101
07:00	44	52	50	25	8	2	0	0	0	0	0	0	0	0	181
08:00	44	48	49	27	9	0	0	0	0	0	0	0	0	0	177
09:00	39	44	40	27	4	0	0	0	0	0	0	0	0	0	154
10:00	31	42	35	18	4	1	0	0	0	0	0	0	0	0	131
11:00	35	39	35	20	8	1	0	0	0	0	0	0	0	0	138
12 PM	39	39	35	19	3	0	0	0	0	0	0	0	0	0	135
13:00	40	45	41	25	3	0	0	0	0	0	0	0	0	0	154
14:00	31	56	36	12	7	0	0	0	0	0	0	0	0	0	142
15:00	41	40	45	14	4	0	0	0	0	0	0	0	0	0	144
16:00	31	26	45	24	3	0	0	0	0	0	0	0	0	0	129
17:00	13	16	35	24	7	0	0	1	0	0	0	0	0	0	96
18:00	17	15	26	27	10	1	0	0	0	0	0	0	0	0	96
19:00	9	14	22	17	7	1	0	0	0	0	0	0	0	0	70
20:00	11	12	11	13	6	0	0	0	0	0	0	0	0	0	53
21:00	11	9	11	8	4	0	0	0	0	0	0	0	0	0	43
22:00	11	12	14	10	3	0	0	0	0	0	0	0	0	0	50
23:00	8	8	14	13	3	0	0	0	0	0	0	0	0	0	46
Total	495	585	599	366	104	6	0	1	0	0	0	0	0	0	2156
Grand Total	495	585	599	366	104	6	0	1	0	0	0	0	0	0	2156

	15th Percentile :	10 MPH
	50th Percentile :	20 MPH
	85th Percentile :	28 MPH
	95th Percentile :	31 MPH
Stats	Mean Speed(Average) :	20 MPH
	10 MPH Pace Speed :	16-25 MPH
	Number in Pace :	1184
	Percent in Pace :	54.9%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 2
NW 17 St between
NW 7 Ave and NW 10 Ave

Date Start: 23-May-13

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	7	5	7	3	2	0	0	0	0	0	0	0	0	0	24
01:00	4	5	0	2	0	0	0	0	0	0	0	0	0	0	11
02:00	0	2	2	1	0	0	0	0	0	0	0	0	0	0	5
03:00	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	4	2	2	1	2	0	0	0	0	0	0	0	0	0	11
05:00	4	7	7	4	0	0	0	0	0	0	0	0	0	0	22
06:00	12	21	18	8	4	0	0	0	0	0	0	0	0	0	63
07:00	30	27	34	12	3	0	0	0	0	0	0	0	0	0	106
08:00	35	34	36	8	2	0	0	0	0	0	0	0	0	0	115
09:00	51	29	23	14	4	0	0	0	0	0	0	0	0	0	121
10:00	25	42	27	12	2	0	0	0	0	0	0	0	0	0	108
11:00	38	46	26	22	3	2	0	0	0	0	0	0	0	0	137
12 PM	46	40	21	12	5	1	1	0	0	0	0	0	0	0	126
13:00	46	40	35	14	7	0	0	0	0	0	0	0	0	0	142
14:00	34	51	32	16	6	0	0	0	0	0	0	0	0	0	139
15:00	30	55	27	17	4	0	0	0	0	0	0	0	0	0	133
16:00	31	49	33	12	7	1	0	0	0	0	0	0	0	0	133
17:00	30	33	29	18	7	5	0	0	0	0	0	0	0	0	122
18:00	23	28	20	6	2	2	1	0	0	0	0	0	0	0	82
19:00	16	15	14	7	2	0	0	0	0	0	0	0	0	0	54
20:00	19	12	6	8	3	0	0	0	0	0	0	0	0	0	48
21:00	12	8	6	4	1	1	0	0	0	0	0	0	0	0	32
22:00	14	12	6	4	1	2	0	0	0	0	0	0	0	0	39
23:00	3	5	8	10	1	0	0	0	0	0	0	0	0	0	27
Total	516	570	419	215	68	14	2	0	0	0	0	0	0	0	1804
Grand Total	516	570	419	215	68	14	2	0	0	0	0	0	0	0	1804

15th Percentile :	8 MPH
50th Percentile :	19 MPH
85th Percentile :	26 MPH
95th Percentile :	30 MPH

Stats

Mean Speed(Average) :	18 MPH
10 MPH Pace Speed :	16-25 MPH
Number in Pace :	989
Percent in Pace :	54.8%
Number of Vehicles > 55 MPH :	0
Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 2
NW 17 St between
NW 7 Ave and NW 10 Ave

Date Start: 23-May-13

Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	12	11	15	10	5	0	0	0	0	0	0	0	0	0	53
01:00	7	9	0	13	2	0	0	0	0	0	0	0	0	0	31
02:00	0	2	5	3	2	0	0	0	0	0	0	0	0	0	12
03:00	6	2	2	0	0	0	0	0	0	0	0	0	0	0	10
04:00	8	9	3	3	4	0	0	0	0	0	0	0	0	0	27
05:00	11	20	18	10	1	0	0	0	0	0	0	0	0	0	60
06:00	29	59	48	23	5	0	0	0	0	0	0	0	0	0	164
07:00	74	79	84	37	11	2	0	0	0	0	0	0	0	0	287
08:00	79	82	85	35	11	0	0	0	0	0	0	0	0	0	292
09:00	90	73	63	41	8	0	0	0	0	0	0	0	0	0	275
10:00	56	84	62	30	6	1	0	0	0	0	0	0	0	0	239
11:00	73	85	61	42	11	3	0	0	0	0	0	0	0	0	275
12 PM	85	79	56	31	8	1	1	0	0	0	0	0	0	0	261
13:00	86	85	76	39	10	0	0	0	0	0	0	0	0	0	296
14:00	65	107	68	28	13	0	0	0	0	0	0	0	0	0	281
15:00	71	95	72	31	8	0	0	0	0	0	0	0	0	0	277
16:00	62	75	78	36	10	1	0	0	0	0	0	0	0	0	262
17:00	43	49	64	42	14	5	0	1	0	0	0	0	0	0	218
18:00	40	43	46	33	12	3	1	0	0	0	0	0	0	0	178
19:00	25	29	36	24	9	1	0	0	0	0	0	0	0	0	124
20:00	30	24	17	21	9	0	0	0	0	0	0	0	0	0	101
21:00	23	17	17	12	5	1	0	0	0	0	0	0	0	0	75
22:00	25	24	20	14	4	2	0	0	0	0	0	0	0	0	89
23:00	11	13	22	23	4	0	0	0	0	0	0	0	0	0	73
Total	1011	1155	1018	581	172	20	2	1	0	0	0	0	0	0	3960
Grand Total	1011	1155	1018	581	172	20	2	1	0	0	0	0	0	0	3960

	15th Percentile :	9 MPH
	50th Percentile :	20 MPH
	85th Percentile :	27 MPH
	95th Percentile :	30 MPH
Stats	Mean Speed(Average) :	19 MPH
	10 MPH Pace Speed :	16-25 MPH
	Number in Pace :	2173
	Percent in Pace :	54.9%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 2
NW 17 St between
NW 7 Ave and NW 10 Ave

Date Start: 23-May-13

Start Time	23-May-13 Thu	Eastboun	Westboun	Total
12:00 AM		29	24	53
01:00		20	11	31
02:00		7	5	12
03:00		6	4	10
04:00		16	11	27
05:00		38	22	60
06:00		101	63	164
07:00		**181**	106	287
08:00		177	115	**292**
09:00		154	121	275
10:00		131	108	239
11:00		138	**137**	275
12:00 PM		135	126	261
01:00		**154**	**142**	**296**
02:00		142	139	281
03:00		144	133	277
04:00		129	133	262
05:00		96	122	218
06:00		96	82	178
07:00		70	54	124
08:00		53	48	101
09:00		43	32	75
10:00		50	39	89
11:00		46	27	73
Total		2156	1804	3960
Percent		54.4%	45.6%	
AM Peak		07:00	11:00	08:00
Vol.		181	137	292
PM Peak		13:00	13:00	13:00
Vol.		154	142	296
Grand Total		2156	1804	3960
Percent		54.4%	45.6%	

ADT ADT 3,960 AADT 3,960

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 3
NW 3 Ave between
NW 14 St and NW 17 St

Date Start: 23-May-13

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	2	3	11	12	5	3	1	0	0	0	0	0	0	0	37
01:00	3	2	6	3	3	1	0	0	0	0	0	0	0	0	18
02:00	0	1	2	2	2	0	0	0	0	0	0	0	0	0	7
03:00	0	3	3	8	0	0	0	0	0	0	0	0	0	0	14
04:00	0	0	3	4	2	3	0	0	0	0	0	0	0	0	12
05:00	0	1	6	10	13	1	0	0	0	0	0	0	0	0	31
06:00	1	7	16	24	20	7	2	0	0	0	0	0	0	0	77
07:00	6	17	50	65	50	10	2	1	0	0	0	0	0	0	201
08:00	6	24	60	61	37	5	0	0	0	0	0	0	0	0	193
09:00	13	29	61	56	20	8	0	0	0	0	0	0	0	0	187
10:00	12	20	42	36	22	3	1	0	0	0	0	0	0	0	136
11:00	8	31	62	49	14	2	1	0	0	0	0	0	0	0	167
12 PM	18	28	60	49	9	2	0	1	0	0	0	0	0	0	167
13:00	14	24	58	37	14	5	1	0	0	0	0	0	0	0	153
14:00	15	44	71	42	11	5	2	0	0	0	0	0	0	0	190
15:00	24	38	67	37	5	2	0	0	0	0	0	0	0	0	173
16:00	16	38	57	52	15	2	0	1	0	0	0	0	0	0	181
17:00	14	18	65	57	19	4	1	0	0	0	0	0	0	0	178
18:00	6	24	46	47	20	5	0	1	1	0	0	0	0	0	150
19:00	5	8	44	38	21	3	2	0	0	0	0	0	0	0	121
20:00	2	19	33	32	11	2	2	1	0	0	0	0	0	0	102
21:00	1	6	28	34	21	2	0	0	0	0	0	0	0	0	92
22:00	1	4	17	30	9	1	0	0	0	0	0	0	0	0	62
23:00	1	7	15	18	6	2	1	0	0	0	0	0	0	0	50
Total	168	396	883	803	349	78	16	5	1	0	0	0	0	0	2699
Grand Total	168	396	883	803	349	78	16	5	1	0	0	0	0	0	2699

	15th Percentile :	18 MPH
	50th Percentile :	25 MPH
	85th Percentile :	31 MPH
	95th Percentile :	35 MPH
Stats	Mean Speed(Average) :	25 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	1686
	Percent in Pace :	62.5%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 3
NW 3 Ave between
NW 14 St and NW 17 St

Date Start: 23-May-13

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	2	6	15	29	26	7	0	0	0	0	0	0	0	0	85
01:00	1	3	8	10	7	2	0	0	0	0	0	0	0	0	31
02:00	1	1	2	7	5	1	0	0	0	0	0	0	0	0	17
03:00	1	0	6	9	1	0	1	0	0	0	0	0	0	0	18
04:00	0	3	1	2	5	2	0	1	0	0	0	0	0	0	14
05:00	0	3	6	5	4	2	0	0	0	0	0	0	0	0	20
06:00	3	2	13	26	12	4	0	1	0	0	0	0	0	0	61
07:00	10	16	68	56	21	4	0	0	0	0	0	0	0	0	175
08:00	6	19	52	71	34	4	0	0	0	0	0	0	0	0	186
09:00	9	16	53	63	24	1	0	0	0	0	0	0	0	0	166
10:00	9	27	58	60	21	5	1	0	0	0	0	0	0	0	181
11:00	14	33	89	55	12	3	1	1	0	0	0	0	0	0	208
12 PM	12	25	75	71	22	4	1	0	0	0	0	0	0	0	210
13:00	10	17	73	56	24	3	0	0	0	0	0	0	0	0	183
14:00	18	26	77	70	20	3	1	0	0	0	0	0	0	0	215
15:00	31	57	97	55	13	3	1	0	0	0	0	0	0	0	257
16:00	20	46	98	93	25	3	0	0	0	0	0	0	0	0	285
17:00	20	37	119	150	52	8	0	0	0	1	0	0	0	0	387
18:00	9	18	83	72	24	8	1	0	0	0	0	0	0	0	215
19:00	4	10	48	62	30	9	0	0	0	0	0	0	0	0	163
20:00	9	9	40	59	28	9	2	0	0	0	0	0	0	0	156
21:00	3	11	28	30	26	4	1	0	0	0	0	0	0	0	103
22:00	0	4	23	32	16	8	0	0	0	0	0	0	0	0	83
23:00	3	6	11	28	13	5	2	1	0	0	0	0	0	0	69
Total	195	395	1143	1171	465	102	12	4	0	1	0	0	0	0	3488
Grand Total	195	395	1143	1171	465	102	12	4	0	1	0	0	0	0	3488

	15th Percentile :	20 MPH
	50th Percentile :	26 MPH
	85th Percentile :	31 MPH
	95th Percentile :	35 MPH
Stats	Mean Speed(Average) :	25 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	2314
	Percent in Pace :	66.3%
	Number of Vehicles > 55 MPH :	1
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 3
NW 3 Ave between
NW 14 St and NW 17 St

Date Start: 23-May-13

Southbound, Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	4	9	26	41	31	10	1	0	0	0	0	0	0	0	122
01:00	4	5	14	13	10	3	0	0	0	0	0	0	0	0	49
02:00	1	2	4	9	7	1	0	0	0	0	0	0	0	0	24
03:00	1	3	9	17	1	0	1	0	0	0	0	0	0	0	32
04:00	0	3	4	6	7	5	0	1	0	0	0	0	0	0	26
05:00	0	4	12	15	17	3	0	0	0	0	0	0	0	0	51
06:00	4	9	29	50	32	11	2	1	0	0	0	0	0	0	138
07:00	16	33	118	121	71	14	2	1	0	0	0	0	0	0	376
08:00	12	43	112	132	71	9	0	0	0	0	0	0	0	0	379
09:00	22	45	114	119	44	9	0	0	0	0	0	0	0	0	353
10:00	21	47	100	96	43	8	2	0	0	0	0	0	0	0	317
11:00	22	64	151	104	26	5	2	1	0	0	0	0	0	0	375
12 PM	30	53	135	120	31	6	1	1	0	0	0	0	0	0	377
13:00	24	41	131	93	38	8	1	0	0	0	0	0	0	0	336
14:00	33	70	148	112	31	8	3	0	0	0	0	0	0	0	405
15:00	55	95	164	92	18	5	1	0	0	0	0	0	0	0	430
16:00	36	84	155	145	40	5	0	1	0	0	0	0	0	0	466
17:00	34	55	184	207	71	12	1	0	0	1	0	0	0	0	565
18:00	15	42	129	119	44	13	1	1	1	0	0	0	0	0	365
19:00	9	18	92	100	51	12	2	0	0	0	0	0	0	0	284
20:00	11	28	73	91	39	11	4	1	0	0	0	0	0	0	258
21:00	4	17	56	64	47	6	1	0	0	0	0	0	0	0	195
22:00	1	8	40	62	25	9	0	0	0	0	0	0	0	0	145
23:00	4	13	26	46	19	7	3	1	0	0	0	0	0	0	119
Total	363	791	2026	1974	814	180	28	9	1	1	0	0	0	0	6187
Grand Total	363	791	2026	1974	814	180	28	9	1	1	0	0	0	0	6187

	15th Percentile :	19 MPH
	50th Percentile :	25 MPH
	85th Percentile :	31 MPH
	95th Percentile :	35 MPH
Stats	Mean Speed(Average) :	25 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	4000
	Percent in Pace :	64.7%
	Number of Vehicles > 55 MPH :	1
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 3
NW 3 Ave between
NW 14 St and NW 17 St

Date Start: 23-May-13

Start Time	23-May-13 Thu	Southbou	Northboun	Total
12:00 AM		37	85	122
01:00		18	31	49
02:00		7	17	24
03:00		14	18	32
04:00		12	14	26
05:00		31	20	51
06:00		77	61	138
07:00		**201**	175	376
08:00		193	186	**379**
09:00		187	166	353
10:00		136	181	317
11:00		167	**208**	375
12:00 PM		167	210	377
01:00		153	183	336
02:00		**190**	215	405
03:00		173	257	430
04:00		181	285	466
05:00		178	**387**	**565**
06:00		150	215	365
07:00		121	163	284
08:00		102	156	258
09:00		92	103	195
10:00		62	83	145
11:00		50	69	119
Total		2699	3488	6187
Percent		43.6%	56.4%	
AM Peak		07:00	11:00	08:00
Vol.		201	208	379
PM Peak		14:00	17:00	17:00
Vol.		190	387	565
Grand Total		2699	3488	6187
Percent		43.6%	56.4%	

ADT ADT 6,187 AADT 6,187

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 4
Miami Ave between
N 18 St and N 19 St

Date Start: 23-May-13

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	1	0	2	10	19	14	4	6	1	0	0	0	0	0	57
01:00	0	0	0	3	2	2	0	1	0	0	0	0	0	0	8
02:00	0	1	0	1	2	2	0	0	0	0	0	0	0	0	6
03:00	0	0	0	0	3	2	0	0	0	0	0	0	0	0	5
04:00	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
05:00	0	1	1	4	1	3	0	0	0	0	0	0	0	0	10
06:00	2	0	2	6	7	2	1	0	0	0	0	0	0	0	20
07:00	4	0	4	8	23	16	8	2	0	0	0	0	0	0	65
08:00	12	0	3	16	41	16	11	0	0	0	0	0	0	0	99
09:00	6	7	7	18	35	17	4	1	0	0	0	0	0	0	95
10:00	9	1	5	23	22	14	12	0	0	0	0	0	0	0	86
11:00	6	1	8	33	37	23	14	1	3	0	0	0	0	0	126
12 PM	10	3	18	40	43	28	4	5	0	0	0	0	0	0	151
13:00	23	2	13	50	53	39	7	3	1	0	0	0	0	0	191
14:00	8	3	6	39	52	26	8	2	0	0	0	0	0	0	144
15:00	11	2	6	42	78	57	15	1	1	0	0	0	0	0	213
16:00	17	4	14	57	143	100	17	1	0	0	0	0	0	0	353
17:00	8	3	11	66	118	91	22	3	1	1	0	0	0	0	324
18:00	13	2	3	30	54	66	13	3	0	0	0	0	0	0	184
19:00	3	2	4	18	47	17	6	1	0	1	0	0	0	0	99
20:00	7	0	3	24	33	14	5	1	1	0	0	0	0	0	88
21:00	1	0	5	18	26	11	3	2	0	0	0	0	0	0	66
22:00	2	0	6	7	16	7	0	0	0	0	0	0	0	0	38
23:00	3	0	6	6	11	4	1	1	0	0	0	0	0	0	32
Total	146	33	127	519	867	571	155	34	8	2	0	0	0	0	2462
Grand Total	146	33	127	519	867	571	155	34	8	2	0	0	0	0	2462

	15th Percentile :	26 MPH
	50th Percentile :	33 MPH
	85th Percentile :	39 MPH
	95th Percentile :	43 MPH
Stats	Mean Speed(Average) :	32 MPH
	10 MPH Pace Speed :	31-40 MPH
	Number in Pace :	1438
	Percent in Pace :	58.4%
	Number of Vehicles > 55 MPH :	2
	Percent of Vehicles > 55 MPH :	0.1%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 4
Miami Ave between
N 18 St and N 19 St

Date Start: 23-May-13

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	0	0	1	9	26	28	13	3	0	2	0	1	0	0	83
01:00	0	1	4	5	18	10	8	2	1	0	0	0	0	0	49
02:00	0	0	1	2	12	10	6	3	0	1	0	0	0	0	35
03:00	0	0	0	2	6	7	2	2	0	0	0	0	0	0	19
04:00	0	0	1	3	2	4	1	1	1	1	0	0	0	0	14
05:00	0	0	1	4	8	10	5	2	1	0	0	0	0	0	31
06:00	2	2	5	10	40	53	33	12	3	0	0	0	0	0	160
07:00	10	3	7	38	121	171	88	22	8	1	0	0	0	0	469
08:00	27	2	13	53	191	262	141	28	8	1	1	0	0	0	727
09:00	10	4	24	59	152	124	54	11	2	0	0	0	0	0	440
10:00	8	3	16	62	100	54	25	7	0	0	0	0	0	0	275
11:00	11	4	15	61	88	68	14	4	0	0	0	0	0	0	265
12 PM	8	7	17	63	92	71	37	6	0	0	0	0	0	1	302
13:00	11	2	9	64	125	63	19	3	0	0	0	0	0	0	296
14:00	8	5	16	43	115	76	20	2	2	0	0	0	0	0	287
15:00	10	5	12	65	120	77	29	5	0	0	0	0	0	0	323
16:00	15	1	19	75	120	59	17	5	0	0	0	0	0	0	311
17:00	11	2	11	70	106	77	20	8	1	0	0	0	0	0	306
18:00	8	1	6	44	90	93	27	8	3	0	0	0	0	0	280
19:00	5	1	5	33	74	72	24	4	1	0	0	0	0	0	219
20:00	5	1	5	28	60	52	22	3	1	0	0	0	0	0	177
21:00	2	1	2	20	62	49	21	4	2	1	0	0	0	0	164
22:00	2	1	3	20	60	46	17	5	2	0	0	0	0	0	156
23:00	5	1	3	17	52	24	10	7	0	2	0	0	0	0	121
Total	158	47	196	850	1840	1560	653	157	36	9	1	1	0	1	5509
Grand Total	158	47	196	850	1840	1560	653	157	36	9	1	1	0	1	5509

	15th Percentile :	28 MPH
	50th Percentile :	35 MPH
	85th Percentile :	41 MPH
	95th Percentile :	45 MPH
Stats	Mean Speed(Average) :	34 MPH
	10 MPH Pace Speed :	31-40 MPH
	Number in Pace :	3400
	Percent in Pace :	61.7%
	Number of Vehicles > 55 MPH :	12
	Percent of Vehicles > 55 MPH :	0.2%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 4
Miami Ave between
N 18 St and N 19 St

Date Start: 23-May-13

Northbound, Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/23/13	1	0	3	19	45	42	17	9	1	2	0	1	0	0	140
01:00	0	1	4	8	20	12	8	3	1	0	0	0	0	0	57
02:00	0	1	1	3	14	12	6	3	0	1	0	0	0	0	41
03:00	0	0	0	2	9	9	2	2	0	0	0	0	0	0	24
04:00	0	1	1	3	3	4	1	1	1	1	0	0	0	0	16
05:00	0	1	2	8	9	13	5	2	1	0	0	0	0	0	41
06:00	4	2	7	16	47	55	34	12	3	0	0	0	0	0	180
07:00	14	3	11	46	144	187	96	24	8	1	0	0	0	0	534
08:00	39	2	16	69	232	278	152	28	8	1	1	0	0	0	826
09:00	16	11	31	77	187	141	58	12	2	0	0	0	0	0	535
10:00	17	4	21	85	122	68	37	7	0	0	0	0	0	0	361
11:00	17	5	23	94	125	91	28	5	3	0	0	0	0	0	391
12 PM	18	10	35	103	135	99	41	11	0	0	0	0	0	1	453
13:00	34	4	22	114	178	102	26	6	1	0	0	0	0	0	487
14:00	16	8	22	82	167	102	28	4	2	0	0	0	0	0	431
15:00	21	7	18	107	198	134	44	6	1	0	0	0	0	0	536
16:00	32	5	33	132	263	159	34	6	0	0	0	0	0	0	664
17:00	19	5	22	136	224	168	42	11	2	1	0	0	0	0	630
18:00	21	3	9	74	144	159	40	11	3	0	0	0	0	0	464
19:00	8	3	9	51	121	89	30	5	1	1	0	0	0	0	318
20:00	12	1	8	52	93	66	27	4	2	0	0	0	0	0	265
21:00	3	1	7	38	88	60	24	6	2	1	0	0	0	0	230
22:00	4	1	9	27	76	53	17	5	2	0	0	0	0	0	194
23:00	8	1	9	23	63	28	11	8	0	2	0	0	0	0	153
Total	304	80	323	1369	2707	2131	808	191	44	11	1	1	0	1	7971
Grand Total	304	80	323	1369	2707	2131	808	191	44	11	1	1	0	1	7971

	15th Percentile :	27 MPH
	50th Percentile :	34 MPH
	85th Percentile :	40 MPH
	95th Percentile :	45 MPH
Stats	Mean Speed(Average) :	34 MPH
	10 MPH Pace Speed :	31-40 MPH
	Number in Pace :	4838
	Percent in Pace :	60.7%
	Number of Vehicles > 55 MPH :	14
	Percent of Vehicles > 55 MPH :	0.2%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 4
Miami Ave between
N 18 St and N 19 St

Date Start: 23-May-13

Start Time	23-May-13 Thu	Northboun	Southbou	Total
12:00 AM		57	83	140
01:00		8	49	57
02:00		6	35	41
03:00		5	19	24
04:00		2	14	16
05:00		10	31	41
06:00		20	160	180
07:00		65	469	534
08:00		99	**727**	**826**
09:00		95	440	535
10:00		86	275	361
11:00		**126**	265	391
12:00 PM		151	302	453
01:00		191	296	487
02:00		144	287	431
03:00		213	**323**	536
04:00		**353**	311	**664**
05:00		324	306	630
06:00		184	280	464
07:00		99	219	318
08:00		88	177	265
09:00		66	164	230
10:00		38	156	194
11:00		32	121	153
Total		2462	5509	7971
Percent		30.9%	69.1%	
AM Peak		11:00	08:00	08:00
Vol.		126	727	826
PM Peak		16:00	15:00	16:00
Vol.		353	323	664

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 5
Miami Ave between
N 13 St and N 14 St

Date Start: 06-Jun-13

Start Time	06-Jun-13 Thu	Southbo
12:00 AM		67
01:00		41
02:00		29
03:00		17
04:00		13
05:00		20
06:00		100
07:00		268
08:00		**539**
09:00		408
10:00		232
11:00		206
12:00 PM		252
01:00		246
02:00		248
03:00		220
04:00		265
05:00		384
06:00		**394**
07:00		220
08:00		251
09:00		119
10:00		62
11:00		146
Total		4747
AM Peak		08:00
Vol.		539
PM Peak		18:00
Vol.		394
Grand Total		4747

ADT ADT 4,747 AADT 4,747

R.J. Behar & Company

ENGINEERS - PLANNERS

6861 SW 196th Avenue, Suite 302

Pembroke Pines, Fl 33332

Site Code: Seg 5

Miami Ave between

N 13 St and N 14 St

Date Start: 06-Jun-13

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
6/6/13	4	13	19	19	9	3	0	0	0	0	0	0	0	0	67
01:00	5	7	10	15	2	0	2	0	0	0	0	0	0	0	41
02:00	2	2	10	12	2	1	0	0	0	0	0	0	0	0	29
03:00	0	2	2	9	2	2	0	0	0	0	0	0	0	0	17
04:00	0	2	1	6	4	0	0	0	0	0	0	0	0	0	13
05:00	2	2	8	7	1	0	0	0	0	0	0	0	0	0	20
06:00	4	9	30	43	12	2	0	0	0	0	0	0	0	0	100
07:00	16	9	62	122	55	3	1	0	0	0	0	0	0	0	268
08:00	40	17	89	238	122	30	2	1	0	0	0	0	0	0	539
09:00	28	28	103	157	74	17	1	0	0	0	0	0	0	0	408
10:00	28	28	71	78	22	5	0	0	0	0	0	0	0	0	232
11:00	27	25	75	60	18	1	0	0	0	0	0	0	0	0	206
12 PM	42	36	81	71	17	5	0	0	0	0	0	0	0	0	252
13:00	18	21	87	96	22	1	1	0	0	0	0	0	0	0	246
14:00	33	24	91	70	26	4	0	0	0	0	0	0	0	0	248
15:00	20	17	69	73	36	5	0	0	0	0	0	0	0	0	220
16:00	24	13	84	99	39	6	0	0	0	0	0	0	0	0	265
17:00	30	20	119	158	50	7	0	0	0	0	0	0	0	0	384
18:00	13	8	130	179	57	7	0	0	0	0	0	0	0	0	394
19:00	8	11	70	98	26	5	2	0	0	0	0	0	0	0	220
20:00	6	21	78	93	44	7	2	0	0	0	0	0	0	0	251
21:00	4	12	52	41	8	2	0	0	0	0	0	0	0	0	119
22:00	0	3	17	24	16	1	1	0	0	0	0	0	0	0	62
23:00	5	7	34	72	25	3	0	0	0	0	0	0	0	0	146
Total	359	337	1392	1840	689	117	12	1	0	0	0	0	0	0	4747
Grand Total	359	337	1392	1840	689	117	12	1	0	0	0	0	0	0	4747

	15th Percentile :	21 MPH
	50th Percentile :	26 MPH
	85th Percentile :	31 MPH
	95th Percentile :	35 MPH
Stats	Mean Speed(Average) :	25 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	3232
	Percent in Pace :	68.1%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 6
Miami Ave between
N 6 St and N 7 St

Date Start: 29-May-13

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/29/13	2	5	8	11	9	4	1	0	0	0	0	0	0	0	40
01:00	3	2	9	4	6	1	0	0	0	0	0	0	0	0	25
02:00	0	7	5	6	3	5	1	0	0	0	0	0	0	0	27
03:00	2	1	5	9	3	5	0	1	0	0	0	0	0	0	26
04:00	1	4	6	7	0	3	0	0	0	0	0	0	0	0	21
05:00	4	8	8	4	3	0	0	0	0	0	0	0	0	0	27
06:00	10	25	38	27	5	2	1	0	0	0	0	0	0	0	108
07:00	65	70	114	73	28	5	2	1	0	0	0	0	0	0	358
08:00	181	137	155	120	57	12	8	1	0	0	0	0	0	0	671
09:00	143	115	100	96	34	19	7	0	0	0	0	0	0	0	514
10:00	63	59	66	47	36	7	5	0	0	0	0	0	0	0	283
11:00	77	63	49	36	16	6	0	0	0	0	0	0	0	0	247
12 PM	57	57	62	41	16	1	0	0	0	0	0	0	0	0	234
13:00	45	61	65	44	15	4	1	0	0	0	0	0	0	0	235
14:00	84	52	79	41	17	3	1	0	0	0	0	0	0	0	277
15:00	54	67	62	44	17	8	0	0	0	0	0	0	0	0	252
16:00	62	70	59	54	7	3	0	0	0	0	0	0	0	0	255
17:00	74	73	88	58	25	8	4	1	0	0	0	0	0	0	331
18:00	40	51	68	43	23	10	0	0	0	0	0	0	0	0	235
19:00	18	49	52	35	6	2	1	0	0	0	0	0	0	0	163
20:00	25	32	36	29	8	1	0	0	0	0	0	0	0	0	131
21:00	17	17	27	27	14	0	2	0	0	0	0	0	0	0	104
22:00	13	28	40	16	3	2	0	0	0	0	0	0	0	0	102
23:00	11	11	18	21	7	1	1	0	0	0	0	0	0	0	70
Total	1051	1064	1219	893	358	112	35	4	0	0	0	0	0	0	4736

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 6
Miami Ave between
N 6 St and N 7 St

Date Start: 29-May-13

Start Time	29-May-13 Wed	Southbo
12:00 AM		40
01:00		25
02:00		27
03:00		26
04:00		21
05:00		27
06:00		108
07:00		358
08:00		**671**
09:00		514
10:00		283
11:00		247
12:00 PM		234
01:00		235
02:00		277
03:00		252
04:00		255
05:00		**331**
06:00		235
07:00		163
08:00		131
09:00		104
10:00		102
11:00		70
Total		4736
AM Peak		08:00
Vol.		671
PM Peak		17:00
Vol.		331

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 7
Miami Ave between
N 4 St and N 5 St

Date Start: 29-May-13

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/29/13	0	1	2	12	16	10	1	0	0	0	0	0	0	0	42
01:00	3	1	3	10	8	1	2	0	0	0	0	0	0	0	28
02:00	1	2	5	7	7	0	3	0	0	0	0	0	0	0	25
03:00	0	3	5	8	6	6	1	0	0	0	0	0	0	0	29
04:00	0	1	4	3	7	3	0	0	0	0	0	0	0	0	18
05:00	3	3	6	10	5	0	0	0	0	0	0	0	0	0	27
06:00	11	6	27	37	19	2	0	0	0	0	0	0	0	0	102
07:00	20	19	75	131	67	17	4	0	0	0	0	0	0	0	333
08:00	38	42	162	197	97	25	4	2	0	0	0	0	0	0	567
09:00	44	89	165	148	62	14	6	0	0	0	0	0	0	0	528
10:00	20	29	84	96	40	13	1	2	0	0	0	0	0	0	285
11:00	21	45	102	64	33	8	1	0	0	0	0	0	0	0	274
12 PM	21	41	99	61	20	3	0	0	0	0	0	0	0	0	245
13:00	19	49	96	76	38	5	1	0	0	0	0	0	0	0	284
14:00	17	24	75	105	57	18	1	0	0	0	0	0	0	0	297
15:00	11	30	81	105	47	8	2	1	0	0	0	0	0	0	285
16:00	24	17	65	84	63	9	1	0	0	0	0	0	0	0	263
17:00	30	25	81	114	68	15	2	1	0	0	0	0	0	0	336
18:00	16	15	65	96	47	18	10	0	0	0	0	0	0	0	267
19:00	9	10	35	73	47	9	0	0	0	0	0	0	0	0	183
20:00	10	8	40	50	29	6	0	0	0	0	0	0	0	0	143
21:00	4	10	25	45	34	6	1	1	0	0	0	0	0	0	126
22:00	3	4	24	47	18	5	1	0	0	0	0	0	0	0	102
23:00	4	0	10	21	16	4	1	0	0	0	0	0	0	0	56
Total	329	474	1336	1600	851	205	43	7	0	0	0	0	0	0	4845

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 7
Miami Ave between
N 4 St and N 5 St

Date Start: 29-May-13

Start Time	29-May-13 Wed	Southbo
12:00 AM		42
01:00		28
02:00		25
03:00		29
04:00		18
05:00		27
06:00		102
07:00		333
08:00		**567**
09:00		528
10:00		285
11:00		274
12:00 PM		245
01:00		284
02:00		297
03:00		285
04:00		263
05:00		**336**
06:00		267
07:00		183
08:00		143
09:00		126
10:00		102
11:00		56
Total		4845
AM Peak		08:00
Vol.		567
PM Peak		17:00
Vol.		336

R.J. Behar & Company

ENGINEERS - PLANNERS

6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 8
NE 1 Ave between
NE 4 St and NE 5 St

Date Start: 04-Jun-13

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
6/4/13	46	44	70	57	26	6	1	0	0	0	0	0	0	0	250
01:00	1	2	20	21	14	1	1	0	0	0	0	0	0	0	60
02:00	1	5	11	9	6	2	0	0	0	0	0	0	0	0	34
03:00	0	1	3	8	6	2	0	0	0	0	0	0	0	0	20
04:00	2	2	4	14	4	3	0	0	0	0	0	0	0	0	29
05:00	8	4	11	9	6	2	0	0	0	0	0	0	0	0	40
06:00	21	9	23	41	30	10	1	2	0	0	0	0	0	0	137
07:00	54	58	117	96	41	8	1	0	0	0	0	0	0	0	375
08:00	62	47	116	110	49	5	0	1	0	0	0	0	0	0	390
09:00	68	70	134	92	18	6	0	0	0	0	0	0	0	0	388
10:00	41	53	105	81	28	4	1	0	0	0	0	0	0	0	313
11:00	73	87	118	91	25	4	0	0	0	0	0	0	0	0	398
12 PM	45	87	125	111	29	7	0	0	0	0	0	0	0	0	404
13:00	73	72	102	103	40	7	1	1	0	0	0	0	0	0	399
14:00	59	65	104	95	38	6	1	1	0	0	0	0	0	0	369
15:00	47	52	126	113	48	10	1	0	0	0	0	0	0	0	397
16:00	52	62	178	117	39	5	1	0	0	0	0	0	0	0	454
17:00	132	124	204	129	46	11	1	0	0	0	0	0	0	0	647
18:00	75	45	138	157	98	29	5	2	0	0	0	0	0	0	549
19:00	30	22	80	117	59	20	0	0	1	0	0	0	0	0	329
20:00	19	21	49	100	35	19	1	0	0	0	0	0	0	0	244
21:00	28	35	78	100	41	13	3	0	0	0	0	0	0	0	298
22:00	10	10	43	63	38	6	1	0	0	0	0	0	0	0	171
23:00	5	13	28	43	15	6	2	0	0	0	0	0	0	0	112
Total	952	990	1987	1877	779	192	22	7	1	0	0	0	0	0	6807
Grand Total	952	990	1987	1877	779	192	22	7	1	0	0	0	0	0	6807

	15th Percentile :	16 MPH
	50th Percentile :	24 MPH
	85th Percentile :	30 MPH
	95th Percentile :	35 MPH
Stats	Mean Speed(Average) :	23 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	3864
	Percent in Pace :	56.8%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 8
NE 1 Ave between
NE 4 St and NE 5 St

Date Start: 04-Jun-13

Start Time	04-Jun-13 Tue	Northbou
12:00 AM		250
01:00		60
02:00		34
03:00		20
04:00		29
05:00		40
06:00		137
07:00		375
08:00		390
09:00		388
10:00		313
11:00		**398**
12:00 PM		404
01:00		399
02:00		369
03:00		397
04:00		454
05:00		**647**
06:00		549
07:00		329
08:00		244
09:00		298
10:00		171
11:00		112
Total		6807
AM Peak		11:00
Vol.		398
PM Peak		17:00
Vol.		647
Grand Total		6807

ADT ADT 6,807 AADT 6,807

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 9
NW 8 St between
N Miami Ave and NE 1 Ave

Date Start: 04-Jun-13

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
6/4/13	56	12	13	19	5	1	0	0	0	0	0	0	0	0	106
01:00	1	0	6	3	1	0	0	0	0	0	0	0	0	0	11
02:00	0	2	7	8	0	0	0	0	0	0	0	0	0	0	17
03:00	0	0	4	1	0	0	0	0	0	0	0	0	0	0	5
04:00	0	1	2	4	0	0	0	0	0	0	0	0	0	0	7
05:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
06:00	1	0	5	1	0	0	0	0	0	0	0	0	0	0	7
07:00	7	8	17	5	2	0	0	0	0	0	0	0	0	0	39
08:00	1	4	22	12	4	0	0	0	0	0	0	0	0	0	43
09:00	8	13	14	15	1	0	0	0	0	0	0	0	0	0	51
10:00	14	6	18	8	0	0	0	0	0	0	0	0	0	0	46
11:00	4	1	6	6	4	0	0	0	0	0	0	0	0	0	21
12 PM	1	6	20	12	4	0	0	0	0	0	0	0	0	0	43
13:00	8	8	25	20	3	1	0	0	0	0	0	0	0	0	65
14:00	3	11	17	12	2	1	0	0	0	0	0	0	0	0	46
15:00	7	6	15	12	3	1	0	0	0	0	0	0	0	0	44
16:00	11	9	22	11	3	2	0	0	0	0	0	0	0	0	58
17:00	6	9	21	17	5	1	0	0	0	0	0	0	0	0	59
18:00	4	4	12	8	1	0	0	0	0	0	0	0	0	0	29
19:00	0	1	14	9	4	1	1	0	0	0	0	0	0	0	30
20:00	0	2	9	5	2	0	0	0	0	0	0	0	0	0	18
21:00	0	1	7	9	3	0	0	0	0	0	0	0	0	0	20
22:00	1	1	3	7	1	0	0	0	0	0	0	0	0	0	13
23:00	0	1	5	4	2	0	0	0	0	0	0	0	0	0	12
Total	133	106	286	208	50	8	1	0	0	0	0	0	0	0	792
Grand Total	133	106	286	208	50	8	1	0	0	0	0	0	0	0	792

	15th Percentile :	14 MPH
	50th Percentile :	23 MPH
	85th Percentile :	29 MPH
	95th Percentile :	32 MPH
Stats	Mean Speed(Average) :	22 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	494
	Percent in Pace :	62.4%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 9
NW 8 St between
N Miami Ave and NE 1 Ave

Date Start: 04-Jun-13

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
6/4/13	7	9	19	25	4	0	0	0	0	0	0	0	0	0	64
01:00	2	1	7	9	4	2	0	0	0	0	0	0	0	0	25
02:00	0	1	7	4	1	0	0	0	0	0	0	0	0	0	13
03:00	0	1	4	2	2	1	0	0	0	0	0	0	0	0	10
04:00	0	2	5	7	1	0	0	0	0	0	0	0	0	0	15
05:00	1	1	5	5	0	0	0	0	0	0	0	0	0	0	12
06:00	5	8	23	29	6	1	1	0	0	0	0	0	0	0	73
07:00	17	13	50	58	10	1	0	0	0	0	0	0	0	0	149
08:00	8	23	68	40	14	3	0	0	0	0	0	0	0	0	156
09:00	20	47	58	39	4	0	0	0	0	0	0	0	0	0	168
10:00	21	30	65	43	6	0	0	0	0	0	0	0	0	0	165
11:00	82	22	44	24	2	0	0	0	0	0	0	0	0	0	174
12 PM	45	22	43	43	4	0	1	0	0	0	0	0	0	0	158
13:00	10	22	61	46	9	1	0	0	0	0	0	0	0	0	149
14:00	7	16	33	39	15	1	0	0	0	0	0	0	0	0	111
15:00	8	12	56	54	10	1	0	0	0	0	0	0	0	0	141
16:00	14	20	63	45	15	4	0	0	0	0	0	0	0	0	161
17:00	8	28	73	49	13	1	1	0	0	0	0	0	0	0	173
18:00	8	7	36	39	14	2	0	0	0	0	0	0	0	0	106
19:00	5	4	32	31	14	2	1	0	0	0	0	0	0	0	89
20:00	4	4	25	30	11	2	0	0	0	0	0	0	0	0	76
21:00	4	5	13	24	9	0	1	0	0	0	0	0	0	0	56
22:00	3	3	11	11	7	0	0	0	0	0	0	0	0	0	35
23:00	2	0	10	9	4	1	0	0	0	0	0	0	0	0	26
Total	281	301	811	705	179	23	5	0	0	0	0	0	0	0	2305
Grand Total	281	301	811	705	179	23	5	0	0	0	0	0	0	0	2305

	15th Percentile :	17 MPH
	50th Percentile :	24 MPH
	85th Percentile :	30 MPH
	95th Percentile :	33 MPH
Stats	Mean Speed(Average) :	23 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	1516
	Percent in Pace :	65.8%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 9
NW 8 St between
N Miami Ave and NE 1 Ave

Date Start: 04-Jun-13

Westbound, Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
6/4/13	63	21	32	44	9	1	0	0	0	0	0	0	0	0	170
01:00	3	1	13	12	5	2	0	0	0	0	0	0	0	0	36
02:00	0	3	14	12	1	0	0	0	0	0	0	0	0	0	30
03:00	0	1	8	3	2	1	0	0	0	0	0	0	0	0	15
04:00	0	3	7	11	1	0	0	0	0	0	0	0	0	0	22
05:00	1	1	7	5	0	0	0	0	0	0	0	0	0	0	14
06:00	6	8	28	30	6	1	1	0	0	0	0	0	0	0	80
07:00	24	21	67	63	12	1	0	0	0	0	0	0	0	0	188
08:00	9	27	90	52	18	3	0	0	0	0	0	0	0	0	199
09:00	28	60	72	54	5	0	0	0	0	0	0	0	0	0	219
10:00	35	36	83	51	6	0	0	0	0	0	0	0	0	0	211
11:00	86	23	50	30	6	0	0	0	0	0	0	0	0	0	195
12 PM	46	28	63	55	8	0	1	0	0	0	0	0	0	0	201
13:00	18	30	86	66	12	2	0	0	0	0	0	0	0	0	214
14:00	10	27	50	51	17	2	0	0	0	0	0	0	0	0	157
15:00	15	18	71	66	13	2	0	0	0	0	0	0	0	0	185
16:00	25	29	85	56	18	6	0	0	0	0	0	0	0	0	219
17:00	14	37	94	66	18	2	1	0	0	0	0	0	0	0	232
18:00	12	11	48	47	15	2	0	0	0	0	0	0	0	0	135
19:00	5	5	46	40	18	3	2	0	0	0	0	0	0	0	119
20:00	4	6	34	35	13	2	0	0	0	0	0	0	0	0	94
21:00	4	6	20	33	12	0	1	0	0	0	0	0	0	0	76
22:00	4	4	14	18	8	0	0	0	0	0	0	0	0	0	48
23:00	2	1	15	13	6	1	0	0	0	0	0	0	0	0	38
Total	414	407	1097	913	229	31	6	0	0	0	0	0	0	0	3097
Grand Total	414	407	1097	913	229	31	6	0	0	0	0	0	0	0	3097

	15th Percentile :	16 MPH
	50th Percentile :	24 MPH
	85th Percentile :	29 MPH
	95th Percentile :	33 MPH
Stats	Mean Speed(Average) :	23 MPH
	10 MPH Pace Speed :	21-30 MPH
	Number in Pace :	2010
	Percent in Pace :	64.9%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 9
NW 8 St between
N Miami Ave and NE 1 Ave

Date Start: 04-Jun-13

Start Time	04-Jun-13 Tue	Westboun	Eastboun	Total
12:00 AM		**106**	64	170
01:00		11	25	36
02:00		17	13	30
03:00		5	10	15
04:00		7	15	22
05:00		2	12	14
06:00		7	73	80
07:00		39	149	188
08:00		43	156	199
09:00		51	168	**219**
10:00		46	165	211
11:00		21	**174**	195
12:00 PM		43	158	201
01:00		**65**	149	214
02:00		46	111	157
03:00		44	141	185
04:00		58	161	219
05:00		59	**173**	**232**
06:00		29	106	135
07:00		30	89	119
08:00		18	76	94
09:00		20	56	76
10:00		13	35	48
11:00		12	26	38
Total		792	2305	3097
Percent		25.6%	74.4%	
AM Peak		00:00	11:00	09:00
Vol.		106	174	219
PM Peak		13:00	17:00	17:00
Vol.		65	173	232
Grand Total		792	2305	3097
Percent		25.6%	74.4%	

ADT ADT 3,097 AADT 3,097

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 10
NW 6 St between
NW 1 Ave and N Miami Ave

Date Start: 29-May-13

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/29/13	9	11	6	17	6	3	0	0	0	0	0	0	0	0	52
01:00	2	2	3	4	2	1	0	0	0	0	0	0	0	0	14
02:00	2	3	0	2	1	0	0	0	0	0	0	0	0	0	8
03:00	2	1	1	1	0	0	0	0	0	0	0	0	0	0	5
04:00	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	1	3	3	5	1	0	0	0	0	0	0	0	0	0	13
06:00	4	12	17	15	4	1	0	0	0	0	0	0	0	0	53
07:00	7	15	54	42	18	3	1	0	0	0	0	0	0	0	140
08:00	31	30	51	73	22	2	1	0	0	0	0	0	0	0	210
09:00	14	18	52	48	26	3	2	0	0	0	0	0	0	0	163
10:00	29	39	38	28	18	7	2	0	0	0	0	0	0	0	161
11:00	18	24	45	54	22	5	0	0	0	0	0	0	0	0	168
12 PM	29	38	35	79	17	4	1	0	0	0	0	0	0	0	203
13:00	22	35	45	60	30	8	1	0	0	0	0	0	0	0	201
14:00	20	33	59	71	31	12	0	0	0	0	0	0	0	0	226
15:00	23	20	67	89	44	13	0	0	0	0	0	0	0	0	256
16:00	20	37	85	113	59	17	3	1	0	0	0	0	0	0	335
17:00	33	26	75	133	91	18	1	0	0	0	0	0	0	0	377
18:00	20	19	35	76	63	15	4	1	0	0	0	0	0	0	233
19:00	9	13	28	48	32	2	3	0	0	0	0	0	0	0	135
20:00	12	16	11	36	15	4	0	0	0	0	0	0	0	0	94
21:00	10	15	23	23	8	0	0	0	0	0	0	0	0	0	79
22:00	5	1	10	16	13	0	1	0	0	0	0	0	0	0	46
23:00	6	3	7	6	5	0	1	0	0	0	0	0	0	0	28
Total	330	417	750	1039	528	118	21	2	0	0	0	0	0	0	3205

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 10
NW 6 St between
NW 1 Ave and N Miami Ave

Date Start: 29-May-13

Start Time	29-May-13 Wed	Westbou
12:00 AM		52
01:00		14
02:00		8
03:00		5
04:00		5
05:00		13
06:00		53
07:00		140
08:00		**210**
09:00		163
10:00		161
11:00		168
12:00 PM		203
01:00		201
02:00		226
03:00		256
04:00		335
05:00		**377**
06:00		233
07:00		135
08:00		94
09:00		79
10:00		46
11:00		28
Total		3205
AM Peak		08:00
Vol.		210
PM Peak		17:00
Vol.		377
Grand Total		3205

ADT ADT 3,650 AADT 3,650

R.J. Behar & Company

ENGINEERS - PLANNERS

6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 11
NW 5 St between
NW 1 Ave and N Miami Ave

Date Start: 29-May-13

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
5/29/13	28	0	0	1	0	0	0	0	0	0	0	0	0	0	29
01:00	16	0	0	1	0	0	0	0	0	0	0	0	0	0	17
02:00	11	1	0	0	0	0	0	0	0	0	0	0	0	0	12
03:00	12	0	0	0	0	0	0	0	0	0	0	0	0	0	12
04:00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11
05:00	88	0	0	0	0	0	0	0	0	0	0	0	0	0	88
06:00	237	3	0	0	0	0	0	0	0	0	0	0	0	0	240
07:00	371	2	1	0	1	1	0	0	0	0	0	0	0	0	376
08:00	385	1	5	2	2	0	0	0	0	0	0	0	0	0	395
09:00	376	4	1	0	0	0	0	0	0	0	0	0	0	0	381
10:00	359	3	2	0	1	0	0	0	0	0	0	0	0	0	365
11:00	294	3	2	2	1	0	0	0	0	0	0	0	0	0	302
12 PM	298	0	4	1	1	0	0	0	0	0	0	0	0	0	304
13:00	299	0	2	1	0	0	0	0	0	0	0	0	0	0	302
14:00	280	1	0	0	0	0	0	0	0	0	0	0	0	0	281
15:00	285	2	4	1	0	0	0	0	0	0	0	0	0	0	292
16:00	299	0	0	0	0	0	0	0	0	0	0	0	0	0	299
17:00	343	2	2	1	0	0	0	0	0	0	0	0	0	0	348
18:00	206	1	2	0	0	0	0	0	0	0	0	0	0	0	209
19:00	150	1	0	0	0	0	0	0	0	0	0	0	0	0	151
20:00	102	0	0	0	1	0	0	0	0	0	0	0	0	0	103
21:00	109	0	1	0	0	0	0	0	0	0	0	0	0	0	110
22:00	52	0	0	0	0	0	0	0	0	0	0	0	0	0	52
23:00	38	0	0	0	0	0	0	0	0	0	0	0	0	0	38
Total	4649	24	26	10	7	1	0	0	0	0	0	0	0	0	4717
Grand Total	4649	24	26	10	7	1	0	0	0	0	0	0	0	0	4717

	15th Percentile :	3 MPH
	50th Percentile :	8 MPH
	85th Percentile :	13 MPH
	95th Percentile :	15 MPH
Stats	Mean Speed(Average) :	8 MPH
	10 MPH Pace Speed :	1-10 MPH
	Number in Pace :	3100
	Percent in Pace :	65.7%
	Number of Vehicles > 55 MPH :	0
	Percent of Vehicles > 55 MPH :	0.0%

R.J. Behar & Company
ENGINEERS - PLANNERS
6861 SW 196th Avenue, Suite 302
Pembroke Pines, Fl 33332

Site Code: Seg 11
NW 5 St between
NW 1 Ave and N Miami Ave

Date Start: 29-May-13

Start Time	29-May-13 Wed	Eastboun
12:00 AM		29
01:00		17
02:00		12
03:00		12
04:00		11
05:00		88
06:00		240
07:00		376
08:00		**395**
09:00		381
10:00		365
11:00		302
12:00 PM		304
01:00		302
02:00		281
03:00		292
04:00		299
05:00		**348**
06:00		209
07:00		151
08:00		103
09:00		110
10:00		52
11:00		38
Total		4717
AM Peak		08:00
Vol.		395
PM Peak		17:00
Vol.		348
Grand Total		4717

ADT ADT 5,058 AADT 5,058

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
0098		SR 968/EB SW 1 ST, 200' W SW 8 AV	E 12500	0	12500 C	9.0	99.9W	7.6A

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
1033		SR 968/EB SW 1 ST, 200' E MIAMI RIVER BRIDG	E 8500	0	8500 C	9.0	99.9W	4.3A

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

Florida Department of Transportation
Transportation Statistics Office
2012 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 3030 - NE 5 ST, 150'E OF NE 2 AVE.

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2012	9900 C	E 9900	0	9.00	99.90	16.90
2011	9900 C	E 9900	0	9.00	99.90	19.80
2010	8300 C	E 8300	0	8.98	99.99	19.80
2009	8300 C	E 8300	0	8.99	99.99	14.30
2008	7300 C	E 7300	0	9.09	99.99	16.30
2007	7700 C	E 7700	0	8.01	99.99	18.40
2006	7900 C	E 7900	0	7.97	99.99	14.70
2005	6500 C	E 6500		8.80	99.90	0.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

Florida Department of Transportation
Transportation Statistics Office
2012 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 3040 - NE 6 ST, 200'W OF NE 2 AVE.

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2012	13500 C	W 13500	0	9.00	99.90	8.30
2011	13500 C	W 13500	0	9.00	99.90	20.20
2010	12500 C	W 12500	0	8.98	99.99	20.20
2009	11000 C	W 11000	0	8.99	99.99	13.40
2008	9600 C	W 9600	0	9.09	99.99	19.70
2007	9800 C	W 9800	0	8.01	99.99	23.20
2006	11500 C	W 11500	0	7.97	99.99	6.90
2005	3800 C	W 3800		8.80	99.90	0.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

Florida Department of Transportation
Transportation Statistics Office
2012 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 7062 - NW 2ND AVE 100 FT SOUTH OF NW 8TH ST

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2012	4600 C	N 2400	S 2200	9.00	55.70	8.10
2011	7200 F	N 3700	S 3500	9.00	55.10	7.80
2010	7200 C	N 3700	S 3500	8.98	54.08	7.10
2009	7100 C	N 3700	S 3400	8.99	53.24	5.40

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

Florida Department of Transportation
Transportation Statistics Office
2012 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 8133 - CRANDON BLVD, 200 FT NORTH OF HARBOR DRIVE

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2012	29000 C	N 15000	S 14000	9.00	59.70	16.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

Florida Department of Transportation
Transportation Statistics Office
2012 Historical AADT Report

County: 87 - MIAMI-DADE

Site: 8498 - SW 16 ST, 200 FT W OF SW 94 AVE (2011 OFF SYSTEM CYCLE)

Year	AADT	Direction 1	Direction 2	*K Factor	D Factor	T Factor
2012	9300 C	E 0	W 0	9.00	59.70	16.00

AADT Flags: C = Computed; E = Manual Estimate; F = First Year Estimate
S = Second Year Estimate; T = Third Year Estimate; X = Unknown
*K Factor: Starting with Year 2011 is StandardK, Prior years are K30 values

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
8600		PINE TREE DR, 200' SOUTH OF .37 ST (2011 OFF SYS	N 8200	S 8000	16200 C	9.0	59.7F	16.0F

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
8601		PINE TREE DR, 200' SOUTH OF .W 55 ST (2011 OFF S	N 5100	0	5100 C	9.0	99.9W	16.0F

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
8602		LAGORCE DR, 200 FT N OF W 57 ST, MIAMI BEACH	N 4800	0	4800 C	9.0	99.9W	16.0F

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
8605		SW 1 ST/O-W-P EB, 200' EAST OF.SOUTH MIAMI AVE (	E 6200	0	6200 C	9.0	99.9W	16.0F

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

FLORIDA DEPARTMENT OF TRANSPORTATION
2012 Annual Average Daily Traffic Report - Report Type: ALL

County: 87 MIAMI-DADE

Site	Site Type	Description	Direction 1	Direction 2	AADT Two-Way	"K" FCTR	"D" FCTR	"T" FCTR
8632		PINE TREE DR, 200' SOUTH OF 51 ST (2011 OFF SYST	N 5400	S 5600	11000 C	9.0	59.7F	16.0F

Site Type : Blank= Portable; T= Telemetered
"K" Factor : Department adopted standard K factor begining with count year 2011
AADT Flags : C= Computed; E= Manual Est; F= First Year Est; S= Second Year Est; T= Third Year Est; X= Unknown
"D/T" Flags : A= Actual; F= Factor Catg; D= Dist Funcl; P= Prior Year; S= Statewide Default; W= One-Way Road; X= Cross Ref

2012 Peak Season Factor Category Report - Report Type: ALL

Category: 8700 MIAMI-DADE NORTH

MOCF: 0.98

Week	Dates	SF	PSCF
1	01/01/2012 - 01/07/2012	1.03	1.05
2	01/08/2012 - 01/14/2012	1.02	1.04
3	01/15/2012 - 01/21/2012	1.01	1.03
* 4	01/22/2012 - 01/28/2012	0.99	1.01
* 5	01/29/2012 - 02/04/2012	0.98	1.00
* 6	02/05/2012 - 02/11/2012	0.97	0.99
* 7	02/12/2012 - 02/18/2012	0.95	0.97
* 8	02/19/2012 - 02/25/2012	0.96	0.98
* 9	02/26/2012 - 03/03/2012	0.96	0.98
*10	03/04/2012 - 03/10/2012	0.97	0.99
*11	03/11/2012 - 03/17/2012	0.97	0.99
*12	03/18/2012 - 03/24/2012	0.98	1.00
*13	03/25/2012 - 03/31/2012	0.99	1.01
*14	04/01/2012 - 04/07/2012	0.99	1.01
*15	04/08/2012 - 04/14/2012	1.00	1.02
*16	04/15/2012 - 04/21/2012	1.01	1.03
17	04/22/2012 - 04/28/2012	1.01	1.03
18	04/29/2012 - 05/05/2012	1.00	1.02
19	05/06/2012 - 05/12/2012	1.00	1.02
20	05/13/2012 - 05/19/2012	1.00	1.02
21	05/20/2012 - 05/26/2012	1.00	1.02
22	05/27/2012 - 06/02/2012	1.00	1.02
23	06/03/2012 - 06/09/2012	1.00	1.02
24	06/10/2012 - 06/16/2012	1.00	1.02
25	06/17/2012 - 06/23/2012	1.01	1.03
26	06/24/2012 - 06/30/2012	1.02	1.04
27	07/01/2012 - 07/07/2012	1.02	1.04
28	07/08/2012 - 07/14/2012	1.03	1.05
29	07/15/2012 - 07/21/2012	1.04	1.06
30	07/22/2012 - 07/28/2012	1.03	1.05
31	07/29/2012 - 08/04/2012	1.03	1.05
32	08/05/2012 - 08/11/2012	1.03	1.05
33	08/12/2012 - 08/18/2012	1.03	1.05
34	08/19/2012 - 08/25/2012	1.02	1.04
35	08/26/2012 - 09/01/2012	1.01	1.03
36	09/02/2012 - 09/08/2012	1.01	1.03
37	09/09/2012 - 09/15/2012	1.00	1.02
38	09/16/2012 - 09/22/2012	1.00	1.02
39	09/23/2012 - 09/29/2012	0.99	1.01
40	09/30/2012 - 10/06/2012	0.99	1.01
41	10/07/2012 - 10/13/2012	0.98	1.00
42	10/14/2012 - 10/20/2012	0.98	1.00
43	10/21/2012 - 10/27/2012	0.99	1.01
44	10/28/2012 - 11/03/2012	0.99	1.01
45	11/04/2012 - 11/10/2012	1.00	1.02
46	11/11/2012 - 11/17/2012	1.00	1.02
47	11/18/2012 - 11/24/2012	1.01	1.03
48	11/25/2012 - 12/01/2012	1.01	1.03
49	12/02/2012 - 12/08/2012	1.02	1.04
50	12/09/2012 - 12/15/2012	1.03	1.05
51	12/16/2012 - 12/22/2012	1.02	1.04
52	12/23/2012 - 12/29/2012	1.01	1.03
53	12/30/2012 - 12/31/2012	1.01	1.03

* Peak Season

Segment Analyses

TABLE 1

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	16,800	17,700	**
4	Divided	*	37,900	39,800	**
6	Divided	*	58,400	59,900	**
8	Divided	*	78,800	80,100	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	7,300	14,800	15,600
4	Divided	*	14,500	32,400	33,800
6	Divided	*	23,300	50,000	50,900
8	Divided	*	32,000	67,300	68,100

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,900	7,600	19,700
50-84%	2,100	6,700	19,700	>19,700
85-100%	9,300	19,700	>19,700	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,500
50-84%	*	1,600	8,700	15,800
85-100%	3,800	10,700	17,400	>19,700

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	47,400	64,000	77,900	84,600
6	69,900	95,200	116,600	130,600
8	92,500	126,400	154,300	176,600
10	115,100	159,700	194,500	222,700
12	162,400	216,700	256,600	268,900

Urbanized

Lanes	B	C	D	E
4	45,800	61,500	74,400	79,900
6	68,100	93,000	111,800	123,300
8	91,500	123,500	148,700	166,800
10	114,800	156,000	187,100	210,300

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	8,600	17,000	24,200	33,300
4	Divided	36,700	51,800	65,600	72,600
6	Divided	55,000	77,700	98,300	108,800

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 1
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities				Interrupted Flow Facilities					
					State Arterials				Class I	
	Freeways	Core Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS										
Area type (u,lu)	lu	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (n, nr, r)			n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	4	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4	4								
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)			1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.91	0.97	0.98						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (a, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, t, u)									t	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 2

Generalized **Annual Average Daily** Volumes for Florida's **Transitioning Areas** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	14,400	16,200	**
4	Divided	*	34,000	35,500	**
6	Divided	*	52,100	53,500	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	6,500	13,300	14,200
4	Divided	*	9,900	28,800	31,600
6	Divided	*	16,000	44,900	47,600

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,600	6,100	19,500
50-84%	1,900	5,500	18,400	>19,500
85-100%	7,500	19,500	>19,500	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,400
50-84%	*	1,600	8,600	15,600
85-100%	3,800	10,500	17,100	>19,500

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	44,100	57,600	68,900	71,700
6	65,100	85,600	102,200	111,000
8	85,100	113,700	135,200	150,000
10	106,200	141,700	168,800	189,000

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	9,200	17,300	24,400	33,300
4	Divided	35,300	49,600	62,900	69,600
6	Divided	52,800	74,500	94,300	104,500

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 2
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 3

Generalized **Annual Average Daily** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
2	Undivided	*	12,900	14,200	**
4	Divided	*	29,300	30,400	**
6	Divided	*	45,200	45,800	**

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	1,300	2,000	3,200
50-84%	1,000	2,100	3,200	10,600
85-100%	2,600	3,900	18,500	>18,500

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,300	4,900	15,600
50-84%	1,700	4,500	13,300	18,500
85-100%	5,900	18,500	>18,500	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,700	9,200
50-84%	*	1,500	8,400	14,900
85-100%	3,600	10,200	16,700	>19,200

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	28,800	43,000	52,300	60,000
6	43,000	64,000	78,300	92,500
8	57,500	85,400	104,400	123,500

Freeway Adjustments

Auxiliary Lanes Present in Both Directions

+ 20,000

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
2	Undivided	4,700	8,400	14,300	28,600
4	Divided	25,700	40,300	51,000	57,900
6	Divided	38,800	60,400	76,700	86,800

Developed Areas

Lanes	Median	B	C	D	E
2	Undivided	8,700	16,400	23,100	31,500
4	Divided	25,900	40,700	52,400	59,600
6	Divided	38,800	61,000	78,400	89,500

Passing Lane Adjustments

Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 3
(continued)

Generalized **Annual Average Daily** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≥ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≥ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≥ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≥ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,770	>1,770	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,120	5,540	6,700	7,190
6	6,130	8,370	10,060	11,100
8	8,230	11,100	13,390	15,010
10	10,330	14,040	16,840	18,930
12	14,450	18,880	22,030	22,860

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	770	1,530	2,170	2,990
4	Divided	3,300	4,660	5,900	6,530
6	Divided	4,950	6,990	8,840	9,790

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 4
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 5

Generalized **Peak Hour Two-Way** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,300	1,460	**
4	Divided	*	3,060	3,200	**
6	Divided	*	4,690	4,820	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	580	1,200	1,280
4	Divided	*	890	2,590	2,850
6	Divided	*	1,440	4,040	4,280

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	550	1,760
50-84%	170	500	1,650	>1,760
85-100%	670	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,410
85-100%	340	950	1,540	>1,760

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,970	5,190	6,200	6,460
6	5,860	7,710	9,190	9,990
8	7,660	10,230	12,170	13,500
10	9,550	12,750	15,190	17,010

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	820	1,550	2,190	2,990
4	Divided	3,170	4,460	5,660	6,260
6	Divided	4,750	6,700	8,480	9,400

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 5
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Transitioning Areas** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 6

Generalized **Peak Hour Two-Way** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
2	Undivided	*	1,220	1,350	**
4	Divided	*	2,790	2,890	**
6	Divided	*	4,300	4,350	**

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	190	300
50-84%	100	200	310	>1,010
85-100%	250	370	1,760	>1,760

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	220	460	1,480
50-84%	170	430	1,270	>1,760
85-100%	560	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	220	840
50-84%	*	120	780	1,390
85-100%	320	940	1,560	>1,820

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,020	4,510	5,490	6,300
6	4,510	6,720	8,220	9,720
8	6,040	8,970	10,960	12,970

Freeway Adjustments

Auxiliary Lanes Present in Both Directions + 1,800

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
2	Undivided	440	790	1,350	2,710
4	Divided	2,440	3,820	4,840	5,500
6	Divided	3,680	5,730	7,280	8,240

Developed Areas

Lanes	Median	B	C	D	E
2	Undivided	820	1,550	2,190	2,990
4	Divided	2,460	3,860	4,970	5,660
6	Divided	3,680	5,790	7,440	8,500

Passing Lane Adjustments

Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 6
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, w)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≤ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≤ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≤ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≤ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

TABLE 7

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,260	3,020	3,660	3,940
3	3,360	4,580	5,500	6,080
4	4,500	6,080	7,320	8,220
5	5,660	7,680	9,220	10,360
6	7,900	10,320	12,060	12,500

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	420	840	1,190	1,640
2	Divided	1,810	2,560	3,240	3,590
3	Divided	2,720	3,840	4,860	5,380

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 7
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (lu, u)	lu	u	u	u	u	u	u	u	u
Number of through lanes (both dir.)	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (n, nr, r)		n	r	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		80							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	4	5	5	2	2	1.9	1.8	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.547	0.550	0.550	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Local adjustment factor	0.91	0.97	0.98						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				4	4	10	10	4	6
Arrival type (1-6)				3	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	120	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, w)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 8

Generalized **Peak Hour Directional** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	710	800	**
2	Divided	*	1,740	1,820	**
3	Divided	*	2,670	2,740	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	330	680	720
2	Divided	*	500	1,460	1,600
3	Divided	*	810	2,280	2,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	320	1,000
50-84%	100	280	940	>1,000
85-100%	380	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,200	2,880	3,440	3,580
3	3,260	4,280	5,100	5,540
4	4,260	5,680	6,760	7,500
5	5,300	7,080	8,440	9,440

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	450	850	1,200	1,640
2	Divided	1,740	2,450	3,110	3,440
3	Divided	2,610	3,680	4,660	5,170

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 8
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (t,uo)	t	t	t	t	t	t	t	t	t
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n	n	n						
Median (n, nr, r)		n	r	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	8	5	5	1.8	2	2	2	2	2
Number of basic segments	4								
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,100	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Local adjustment factor	0.85	0.97	0.95						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
CONTROL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane	Multilane	Class I	Class II	Score	Score	Buses/hr.
		%ffs	Density	ats	ats			
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 9

Generalized **Peak Hour Directional** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
1	Undivided	*	670	740	**
2	Divided	*	1,530	1,580	**
3	Divided	*	2,360	2,400	**

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	70	110	170
50-84%	60	120	180	580
85-100%	140	210	1,000	>1,000

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	260	840
50-84%	100	240	720	1,000
85-100%	320	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	120	460
50-84%	*	80	430	770
85-100%	180	520	860	>1,000

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	1,680	2,500	3,040	3,500
3	2,500	3,720	4,560	5,400
4	3,360	4,980	6,080	7,200

Freeway Adjustments

Auxiliary Lanes Present in Both Directions + 1,000

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
1	Undivided	240	430	740	1,490
2	Divided	1,340	2,100	2,660	3,020
3	Divided	2,020	3,150	4,000	4,530

Developed Areas

Lanes	Median	B	C	D	E
1	Undivided	450	850	1,200	1,640
2	Divided	1,350	2,120	2,730	3,110
3	Divided	2,020	3,180	4,090	4,670

Passing Lane Adjustments

Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:

Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 9
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's **Rural Undeveloped Areas** and **Developed Areas Less Than 5,000 Population**

12/18/12

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
ROADWAY CHARACTERISTICS										
Area type (ru, rd)	rural	ru	ru	rd	rd	rd	rd	ru	rd	rd
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	65	50	55	45	45	55	45	45
Free flow speed (mph)	75	60	70	55	60	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (n, nr, r)		n	r	n	r	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	14	10	10	5	5	1.9	2.2	4	2	2
Number of basic segments	4									
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.555	0.550	0.550	0.550	0.550	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)		1,700	2,300	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	4.0	4.0	3.0	3.0	6.0	3.5	3.0
Local adjustment factor	0.84	0.88	0.73	0.97	0.82					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≥ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≥ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≥ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≥ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

Segment LOS Results

Road Segment	From	To	ADT	PSCF	AADT	Existing Laneage			Proposed Laneage		
						LOS C Treshold	LOS D Treshold	Segment LOS	LOS C Treshold	LOS D Treshold	Segment LOS
NW 17th St	NW 3rd Ave	NW 7th Ave	2,667	1.02	2,720	6,242	12,654	C	6,242	12,654	C
	NW 7th Ave	NW 10th Ave	3,960	1.02	4,039	6,242	12,654	C	6,242	12,654	C
NW 3rd Ave	NW 14th St	NW 17th St	6,187	1.02	6,311	6,242	12,654	D	6,242	12,654	D
Miami Ave	N 18th St	N 19th St	7,971	1.02	8,130	10,875	24,300	C	5,475	11,100	D
	N 13th St	N 14th St	4,747	1.02	4,842	10,485	22,500	C	10,485	22,500	C
	N 6th St	N 7th St	4,736	1.02	4,831	10,485	22,500	C	6,525	14,580	C
	N 4th St	N 5th St	4,845	1.02	4,942	8,265	18,468	C	8,265	8,436	C
NE 1st Ave	NE 4th St	NE 5th St	6,807	1.02	6,943	9,437	20,250	C	9,437	20,250	C
NE 8th St	N Miami Ave	NE 1st Ave	3,097	1.02	3,159	5,256	10,656	C	5,256	10,656	C
NW 6th St	NW 1st Ave	N Miami Ave	3,650	1.02	3,723	5,873	13,122	C	5,873	5,994	C
NW 5th St	NW 1st Ave	N Miami Ave	5,058	1.02	5,159	9,437	20,250	C	9,437	20,250	C
NW 2nd Ave	NW 7th St	NW 8th St	4,600	1	4,600	5,256	10,656	C	5,256	10,656	C
SW 1st St	SW 9th Ave	SW 8th Ave	12,500	1	12,500	10,485	22,500	D	6,525	14,580	D
SW 1st St	SW 5th Ave	SW 2nd Ave	8,500	1	8,500	14,400	30,285	C	10,485	22,500	C
SE 1st St	S Miami Ave	SE 1st Ave	6,200	1	6,200	10,485	22,500	C	6,525	14,580	C
SW 16th St	SW 95th Ave	SW 94th Ave	9,300	1	9,300	5,256	10,656	D	5,256	10,656	D
Pine Tree Dr	S of 37th St		16,200	1	16,200	13,050	29,160	D	13,050	29,160	D
Pine Tree Dr	S of 51st St		11,000	1	11,000	13,050	29,160	C	13,050	29,160	C
Pine Tree Dr	S of 55th St		5,100	1	5,100	5,873	13,122	C	5,873	13,122	C
LaGorce Dr	N of 57th St		4,800	1	4,800	5,873	13,122	C	5,873	13,122	C

Segment 85th% Speed

Road Segment	From	To	Speed Limit (mph)	85th% Speed (mph)		
				EB/SB	WB/NB	Both
NW 17th St	NW 3rd Ave	NW 7th Ave	30	38	37	38
	NW 7th Ave	NW 10th Ave	30	28	26	27
NW 3rd Ave	NW 14th St	NW 17th St	30	31	31	31
Miami Ave	N 18th St	N 19th St	30	41	39	40
	N 13th St	N 14th St	30	31	-	31
	N 6th St	N 7th St	30	29	-	29
	N 4th St	N 5th St	30	33	-	33
NE 1st Ave	NE 4th St	NE 5th St	30	-	30	30
NE 8th St	N Miami Ave	NE 1st Ave	30	30	29	29
NW 6th St	NW 1st Ave	N Miami Ave	30	-	32	32
NW 5th St	NW 1st Ave	N Miami Ave	30	13	-	13

Intersection Counts

R.J. Behar & Company, Inc.

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File Name : N MIAMI AVE & N 20 ST
Site Code : Int 1
Start Date : 5/21/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycles - Heavy Vehicles

	N Miami Ave Southbound				N 20 St Westbound				N Miami Ave Northbound				N 20 St Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	15	58	15	2	1	24	7	1	1	12	0	0	14	19	6	6	181
07:15 AM	20	74	18	7	0	31	4	2	0	0	0	0	11	29	22	4	222
07:30 AM	44	114	18	0	4	53	8	3	0	6	0	0	13	39	23	1	326
07:45 AM	31	136	36	0	5	37	7	4	1	15	3	0	14	46	23	1	359
Total	110	382	87	9	10	145	26	10	2	33	3	0	52	133	74	12	1088
08:00 AM	36	192	26	0	1	62	19	2	2	14	2	0	12	48	19	0	435
08:15 AM	41	177	37	0	8	57	25	2	0	15	0	0	16	48	18	0	444
08:30 AM	33	220	30	0	5	53	25	2	0	9	0	2	7	36	17	0	439
08:45 AM	29	212	29	0	1	43	15	3	1	7	0	1	4	53	23	0	421
Total	139	801	122	0	15	215	84	9	3	45	2	3	39	185	77	0	1739
-----BREAK-----																	
04:00 PM	27	58	21	1	2	65	34	8	2	45	2	3	23	56	23	1	371
04:15 PM	40	44	16	0	0	52	25	4	0	23	5	1	20	44	6	1	281
04:30 PM	24	28	34	1	3	64	31	10	1	52	0	0	30	51	9	1	339
04:45 PM	23	48	14	1	2	61	20	5	1	106	3	2	19	55	20	1	381
Total	114	178	85	3	7	242	110	27	4	226	10	6	92	206	58	4	1372
05:00 PM	20	65	24	0	4	68	24	5	0	45	0	4	13	47	3	2	324
05:15 PM	27	56	14	0	3	67	38	5	1	59	0	0	20	64	19	1	374
05:30 PM	40	53	19	2	5	71	37	12	1	38	3	1	33	77	0	12	404
05:45 PM	25	46	15	1	1	58	26	18	3	55	2	2	38	81	17	7	395
Total	112	220	72	3	13	264	125	40	5	197	5	7	104	269	39	22	1497
Grand Total	475	1581	366	15	45	866	345	86	14	501	20	16	287	793	248	38	5696
Apprch %	19.5	64.9	15	0.6	3.4	64.5	25.7	6.4	2.5	90.9	3.6	2.9	21	58.1	18.2	2.8	
Total %	8.3	27.8	6.4	0.3	0.8	15.2	6.1	1.5	0.2	8.8	0.4	0.3	5	13.9	4.4	0.7	
Cars and Peds on Foot	450	1544	357	6	41	833	328	70	13	485	20	12	280	757	230	14	5440
% Cars and Peds on Foot	94.7	97.7	97.5	40	91.1	96.2	95.1	81.4	92.9	96.8	100	75	97.6	95.5	92.7	36.8	95.5
Peds on Bicycles	0	2	1	9	0	0	0	16	0	1	0	4	0	2	1	18	54
% Peds on Bicycles	0	0.1	0.3	60	0	0	0	18.6	0	0.2	0	25	0	0.3	0.4	47.4	0.9
Heavy Vehicles	25	35	8	0	4	33	17	0	1	15	0	0	7	34	17	6	202
% Heavy Vehicles	5.3	2.2	2.2	0	8.9	3.8	4.9	0	7.1	3	0	0	2.4	4.3	6.9	15.8	3.5

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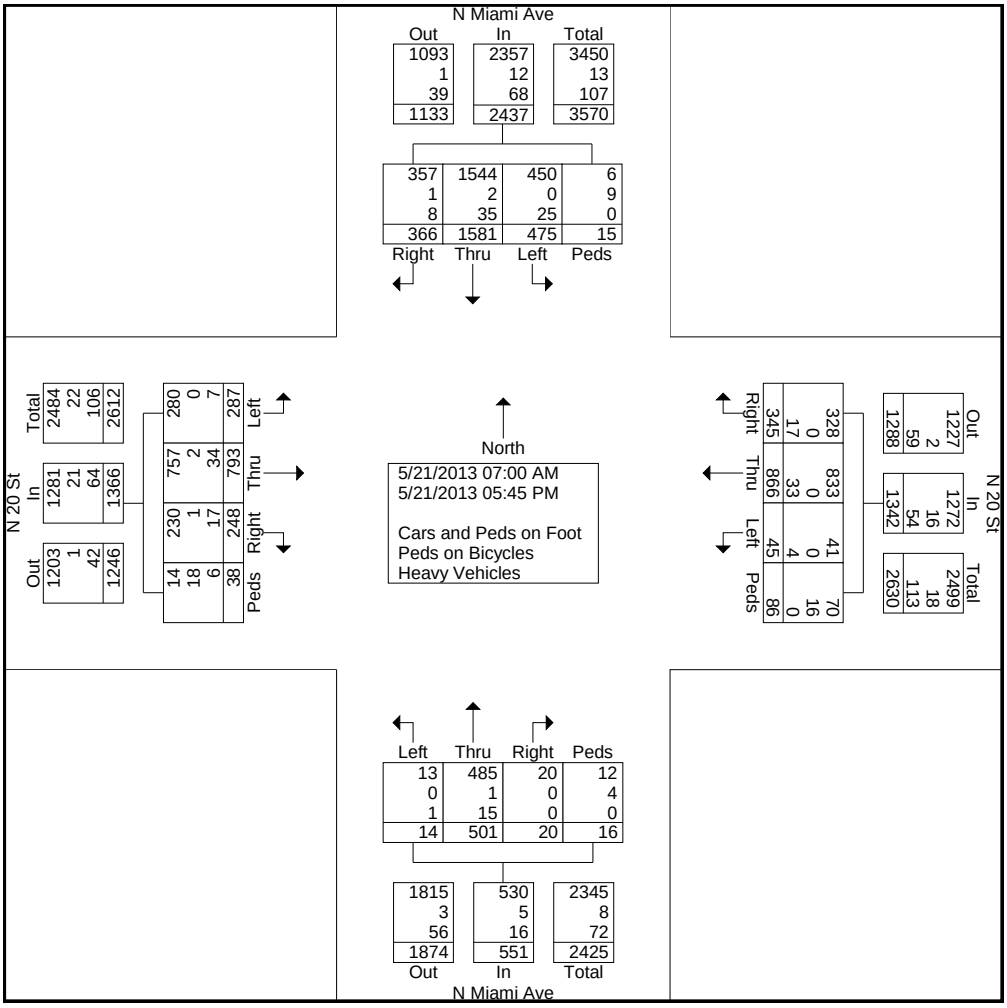

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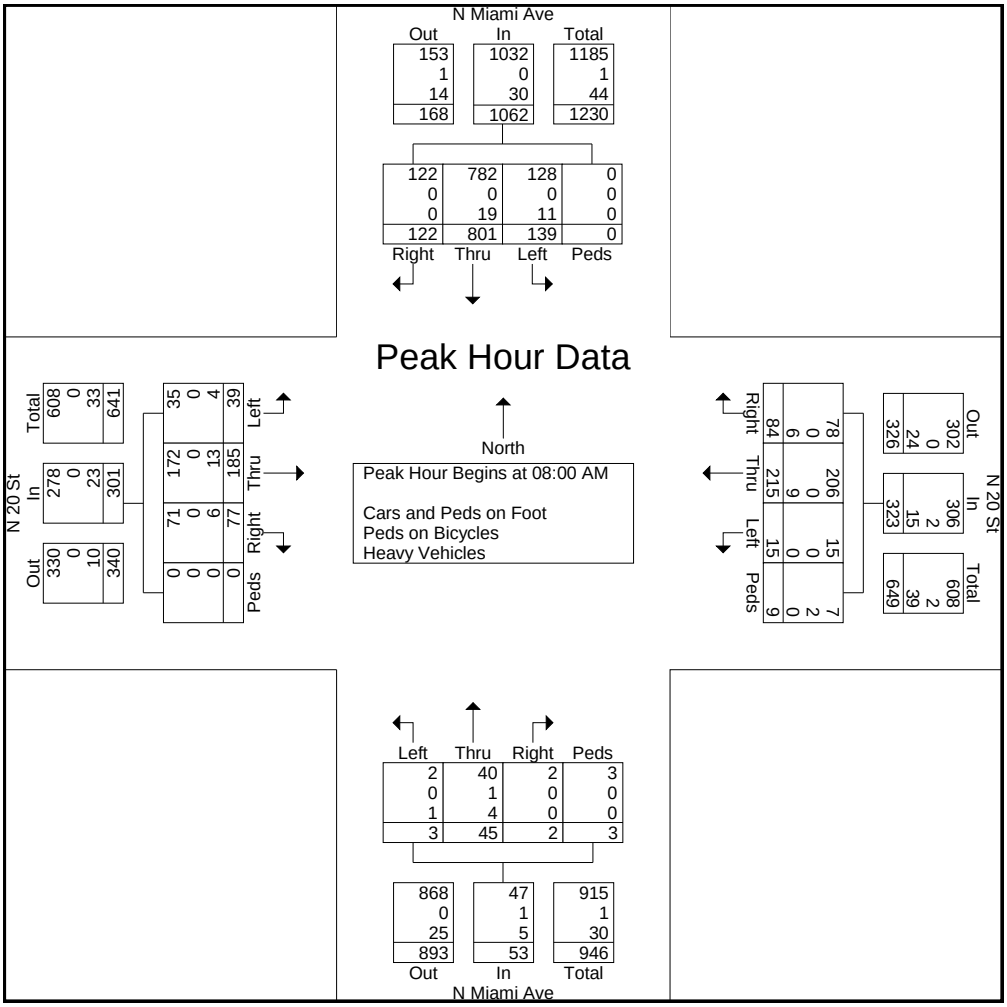
	N Miami Ave Southbound					N 20 St Westbound					N Miami Ave Northbound					N 20 St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	36	192	26	0	254	1	**62**	19	2	84	**2**	**14**	**2**	**0**	**18**	12	48	19	0	79	435
08:15 AM	**41**	177	**37**	0	255	**8**	57	**25**	2	**92**	0	**15**	0	0	15	**16**	48	18	0	**82**	**444**
08:30 AM	33	**220**	30	0	**283**	5	53	25	2	85	0	9	0	**2**	11	7	36	17	0	60	439
08:45 AM	**29**	**212**	**29**	**0**	**270**	**1**	**43**	**15**	**3**	**62**	**1**	**7**	**0**	**1**	**9**	**4**	**53**	**23**	**0**	**80**	**421**
Total Volume	139	801	122	0	1062	15	215	84	9	323	3	45	2	3	53	39	185	77	0	301	1739
% App. Total	13.1	75.4	11.5	0		4.6	66.6	26	2.8		5.7	84.9	3.8	5.7		13	61.5	25.6	0		
PHF	.848	.910	.824	.000	.938	.469	.867	.840	.750	.878	.375	.750	.250	.375	.736	.609	.873	.837	.000	.918	.979
Cars and Peds on Foot																					
% Cars and Peds on Foot	92.1	97.6	100	0	97.2	100	95.8	92.9	77.8	94.7	66.7	88.9	100	100	88.7	89.7	93.0	92.2	0	92.4	95.6
Peds on Bicycles																					
% Peds on Bicycles	0	0	0	0	0	0	0	0	22.2	0.6	0	2.2	0	0	1.9	0	0	0	0	0	0.2
Heavy Vehicles																					
% Heavy Vehicles	7.9	2.4	0	0	2.8	0	4.2	7.1	0	4.6	33.3	8.9	0	0	9.4	10.3	7.0	7.8	0	7.6	4.2



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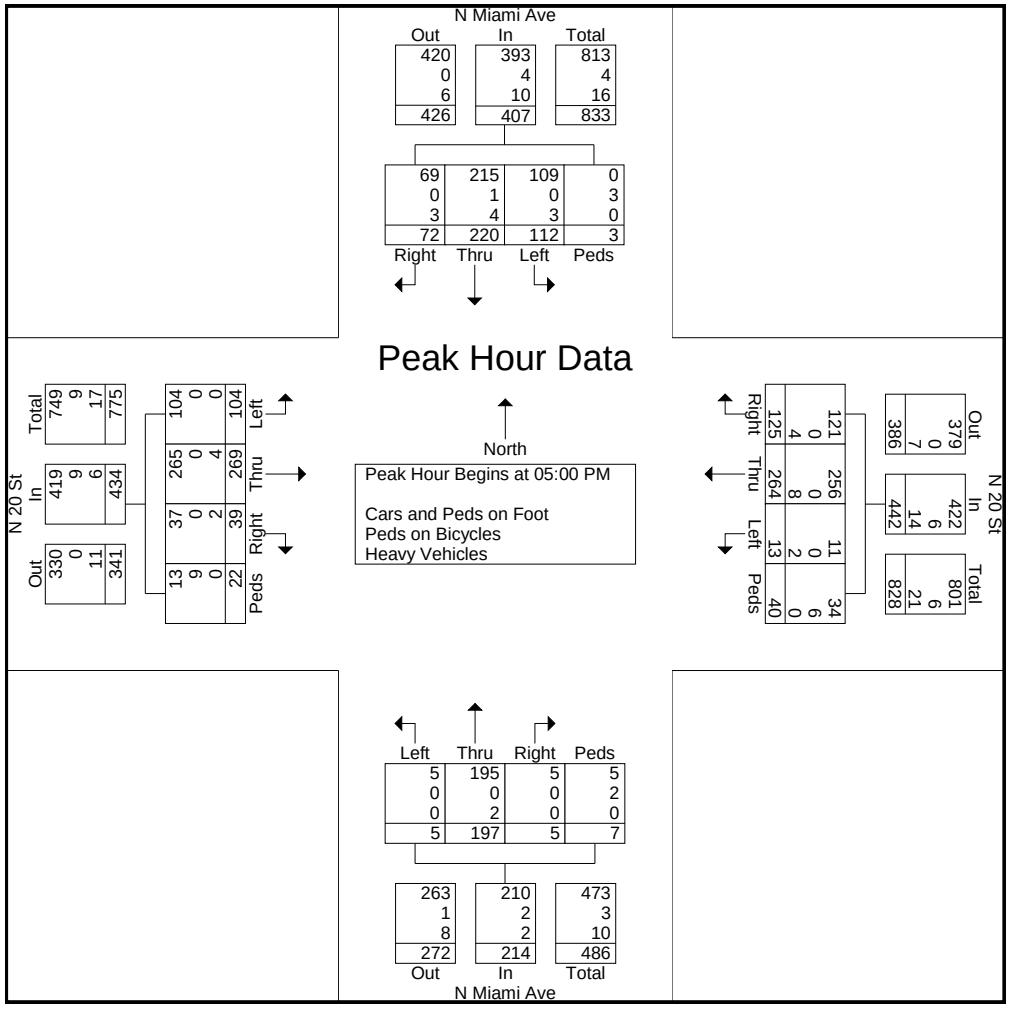
	N Miami Ave Southbound					N 20 St Westbound					N Miami Ave Northbound					N 20 St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	20	**65**	**24**	**0**	**109**	**4**	**68**	**24**	**5**	**101**	**0**	**45**	**0**	**4**	**49**	**13**	**47**	**3**	**2**	**65**	**324**
05:15 PM	**27**	**56**	**14**	**0**	**97**	**3**	**67**	**38**	**5**	**113**	**1**	**59**	0	0	60	20	64	**19**	**1**	**104**	**374**
05:30 PM	**40**	**53**	**19**	**2**	**114**	**5**	**71**	37	12	**125**	1	38	**3**	**1**	**43**	**33**	**77**	**0**	**12**	**122**	**404**
05:45 PM	25	46	15	1	87	1	58	26	**18**	103	**3**	55	2	2	**62**	**38**	**81**	17	7	**143**	395
Total Volume	112	220	72	3	407	13	264	125	40	442	5	197	5	7	214	104	269	39	22	434	1497
% App. Total	27.5	54.1	17.7	0.7		2.9	59.7	28.3	9		2.3	92.1	2.3	3.3		24	62	9	5.1		
PHF	.700	.846	.750	.375	.893	.650	.930	.822	.556	.884	.417	.835	.417	.438	.863	.684	.830	.513	.458	.759	.926
Cars and Peds on Foot																					
% Cars and Peds on Foot	97.3	97.7	95.8	0	96.6	84.6	97.0	96.8	85.0	95.5	100	99.0	100	71.4	98.1	100	98.5	94.9	59.1	96.5	96.5
Peds on Bicycles																					
% Peds on Bicycles	0	0.5	0	100	1.0	0	0	0	15.0	1.4	0	0	0	28.6	0.9	0	0	0	40.9	2.1	1.4
Heavy Vehicles																					
% Heavy Vehicles	2.7	1.8	4.2	0	2.5	15.4	3.0	3.2	0	3.2	0	1.0	0	0	0.9	0	1.5	5.1	0	1.4	2.1



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Start Date : 5/22/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycle - Heavy Vehicles

	N Miami Ave Southbound				N 19 St Westbound				N Miami Ave Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	73	4	2	0	0	0	0	0	6	0	1	0	0	0	0	86
07:15 AM	0	71	4	0	0	0	0	0	0	8	0	0	0	0	0	0	83
07:30 AM	0	110	0	0	0	0	0	0	0	4	0	0	0	0	0	0	114
07:45 AM	0	195	0	3	0	0	0	1	0	3	0	0	0	0	0	0	202
Total	0	449	8	5	0	0	0	1	0	21	0	1	0	0	0	0	485
08:00 AM	0	190	0	0	1	0	1	1	0	8	0	0	0	0	0	1	202
08:15 AM	0	233	1	2	0	0	0	1	2	8	0	4	0	0	0	0	251
08:30 AM	0	195	0	2	0	0	0	0	0	10	0	1	0	0	0	0	208
08:45 AM	0	258	4	4	0	0	0	0	1	9	1	3	0	0	0	0	280
Total	0	876	5	8	1	0	1	2	3	35	1	8	0	0	0	1	941
BREAK																	
04:00 PM	0	83	0	3	0	0	1	5	0	0	0	0	0	0	0	0	92
04:15 PM	0	96	3	10	0	0	0	1	0	29	0	0	0	0	0	0	139
04:30 PM	0	100	0	14	0	0	0	3	2	52	0	14	0	0	0	0	185
04:45 PM	0	82	0	7	1	0	0	2	2	74	0	11	0	0	0	0	179
Total	0	361	3	34	1	0	1	11	4	155	0	25	0	0	0	0	595
05:00 PM	0	70	0	15	0	0	0	1	2	67	0	8	0	0	0	0	163
05:15 PM	1	108	0	21	0	0	0	9	1	65	0	10	0	0	0	0	215
05:30 PM	0	90	3	7	0	0	1	10	0	47	0	2	0	0	0	0	160
05:45 PM	0	79	0	28	0	0	0	9	1	70	0	3	0	0	0	0	190
Total	1	347	3	71	0	0	1	29	4	249	0	23	0	0	0	0	728
Grand Total	1	2033	19	118	2	0	3	43	11	460	1	57	0	0	0	1	2749
Apprch %	0	93.6	0.9	5.4	4.2	0	6.2	89.6	2.1	87	0.2	10.8	0	0	0	100	
Total %	0	74	0.7	4.3	0.1	0	0.1	1.6	0.4	16.7	0	2.1	0	0	0	0	
Cars and Peds on Foot	0	1973	13	108	1	0	1	41	10	438	0	57	0	0	0	1	2643
% Cars and Peds on Foot	0	97	68.4	91.5	50	0	33.3	95.3	90.9	95.2	0	100	0	0	0	100	96.1
Peds on Bicycle	0	4	0	10	0	0	0	2	0	6	0	0	0	0	0	0	22
% Peds on Bicycle	0	0.2	0	8.5	0	0	0	4.7	0	1.3	0	0	0	0	0	0	0.8
Heavy Vehicles	1	56	6	0	1	0	2	0	1	16	1	0	0	0	0	0	84
% Heavy Vehicles	100	2.8	31.6	0	50	0	66.7	0	9.1	3.5	100	0	0	0	0	0	3.1

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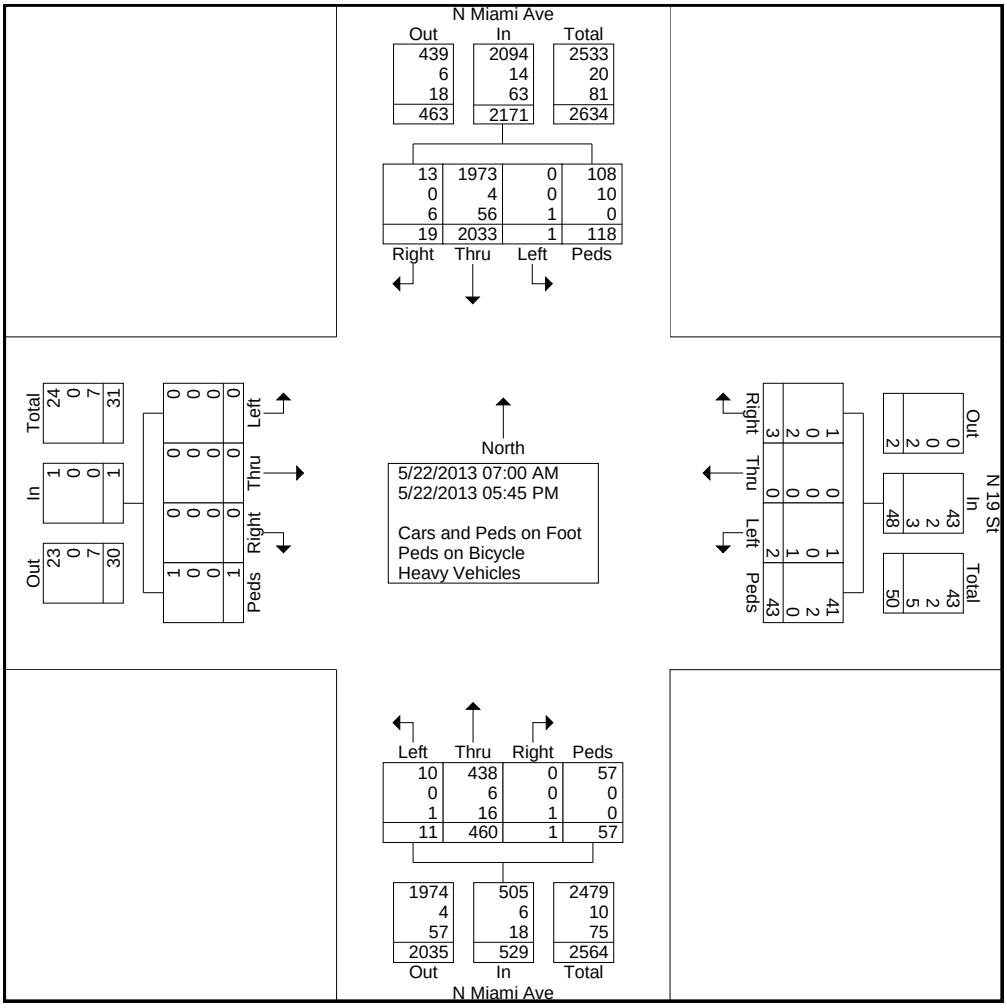
File Name : N MIAMI AVE & N 19 ST
Site Code : Int 2
Start Date : 5/22/2013
Page No : 2



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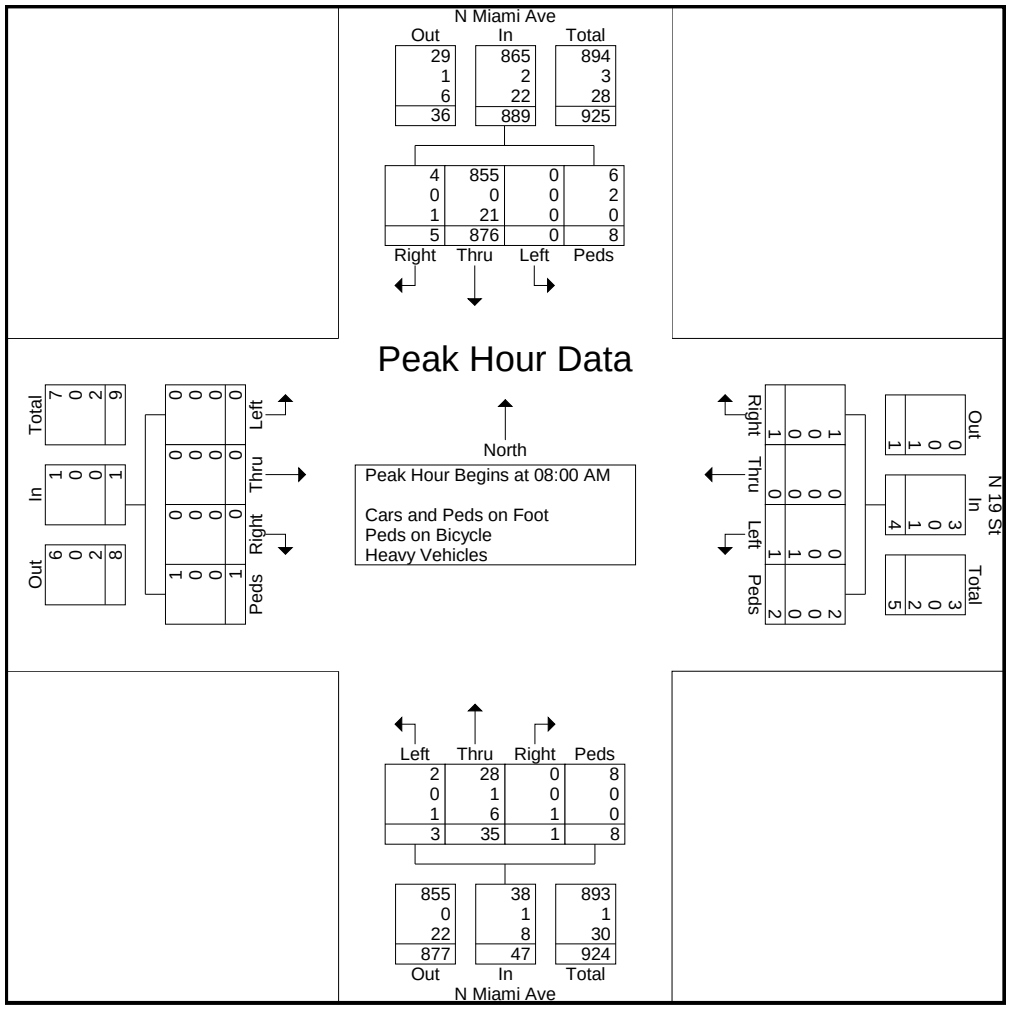
File Name : N MIAMI AVE & N 19 ST
Site Code : Int 2
Start Date : 5/22/2013
Page No : 3

	N Miami Ave Southbound					N 19 St Westbound					N Miami Ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	190	0	0	190	**1**	**0**	**1**	**1**	**3**	0	8	0	0	8	0	0	0	**1**	**1**	202
08:15 AM	0	233	1	2	236	0	0	0	1	1	**2**	8	0	**4**	**14**	0	0	0	0	0	251
08:30 AM	0	195	0	2	197	0	0	0	0	0	0	**10**	0	1	11	0	0	0	0	0	208
08:45 AM	0	**258**	**4**	**4**	**266**	0	0	0	0	0	1	9	**1**	3	14	0	0	0	0	0	**280**
Total Volume	0	876	5	8	889	1	0	1	2	4	3	35	1	8	47	0	0	0	1	1	941
% App. Total	0	98.5	0.6	0.9		25	0	25	50		6.4	74.5	2.1	17		0	0	0	100		
PHF	.000	.849	.313	.500	.836	.250	.000	.250	.500	.333	.375	.875	.250	.500	.839	.000	.000	.000	.250	.250	.840
Cars and Peds on Foot																					
% Cars and Peds on Foot	0	97.6	80.0	75.0	97.3	0	0	100	100	75.0	66.7	80.0	0	100	80.9	0	0	0	100	100	96.4
Peds on Bicycle	0	0	0	2	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
% Peds on Bicycle	0	0	0	25.0	0.2	0	0	0	0	0	0	2.9	0	0	2.1	0	0	0	0	0	0.3
Heavy Vehicles																					
% Heavy Vehicles	0	2.4	20.0	0	2.5	100	0	0	0	25.0	33.3	17.1	100	0	17.0	0	0	0	0	0	3.3



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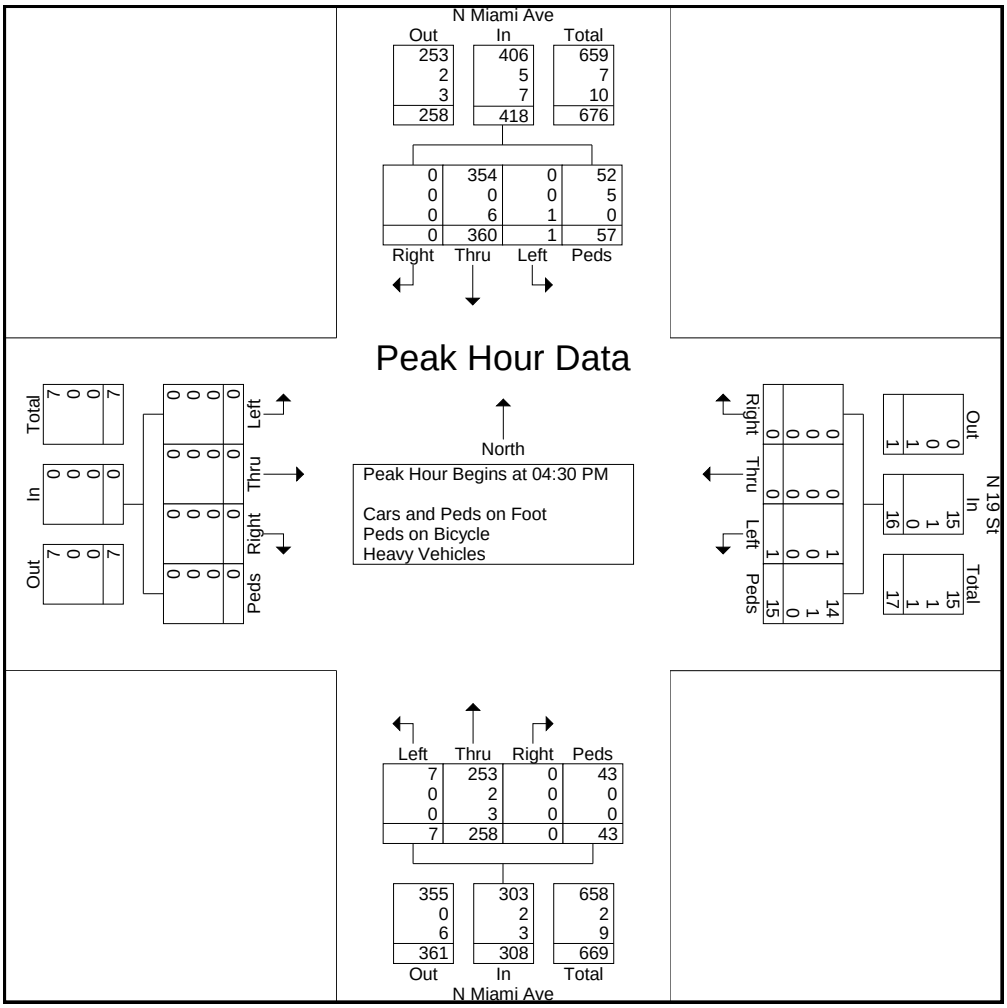
File Name : N MIAMI AVE & N 19 ST
Site Code : Int 2
Start Date : 5/22/2013
Page No : 4

	N Miami Ave Southbound					N 19 St Westbound					N Miami Ave Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	100	0	14	114	0	0	0	3	3	**2**	**52**	**0**	**14**	**68**	**0**	**0**	**0**	**0**	**0**	**185**
04:45 PM	**0**	**82**	**0**	**7**	**89**	**1**	**0**	**0**	**2**	**3**	**2**	**74**	0	11	**87**	0	0	0	0	0	179
05:00 PM	0	70	0	15	85	0	0	0	1	1	2	67	0	8	77	0	0	0	0	0	163
05:15 PM	**1**	**108**	0	**21**	**130**	0	0	0	**9**	**9**	1	65	0	10	76	0	0	0	0	0	**215**
Total Volume	1	360	0	57	418	1	0	0	15	16	7	258	0	43	308	0	0	0	0	0	742
% App. Total	0.2	86.1	0	13.6		6.2	0	0	93.8		2.3	83.8	0	14		0	0	0	0		
PHF	.250	.833	.000	.679	.804	.250	.000	.000	.417	.444	.875	.872	.000	.768	.885	.000	.000	.000	.000	.000	.863
Cars and Peds on Foot																					
% Cars and Peds on Foot	0	98.3	0	91.2	97.1	100	0	0	93.3	93.8	100	98.1	0	100	98.4	0	0	0	0	0	97.6
Peds on Bicycle	0	0	0	5	5	0	0	0	1	1	0	2	0	0	2	0	0	0	0	0	8
% Peds on Bicycle	0	0	0	8.8	1.2	0	0	0	6.7	6.3	0	0.8	0	0	0.6	0	0	0	0	0	1.1
Heavy Vehicles	1	6	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
% Heavy Vehicles	100	1.7	0	0	1.7	0	0	0	0	0	0	1.2	0	0	1.0	0	0	0	0	0	1.3



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File Name : SW 26 Rd & S Miami Ave
Site Code : Int 3
Start Date : 5/23/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycle - Heavy Vehicles

	S Miami Ave Southbound				SW 26 Rd Westbound				S Miami Ave Northbound				SW 26 Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	7	23	1	0	15	8	7	2	65	35	0	3	0	204	135	4	509
07:15 AM	10	25	0	1	38	7	12	0	56	38	1	7	2	238	120	8	563
07:30 AM	5	46	1	0	45	14	20	0	69	49	0	0	3	275	118	5	650
07:45 AM	13	46	3	0	38	19	18	1	90	77	1	7	2	328	121	4	768
Total	35	140	5	1	136	48	57	3	280	199	2	17	7	1045	494	21	2490
08:00 AM	11	42	3	0	31	28	25	0	83	91	1	2	6	251	111	5	690
08:15 AM	7	51	4	0	14	24	17	0	94	95	1	1	5	247	129	6	695
08:30 AM	9	40	3	0	21	42	19	0	102	75	0	1	16	277	125	3	733
08:45 AM	10	31	2	0	26	41	32	1	82	88	1	5	8	325	115	4	771
Total	37	164	12	0	92	135	93	1	361	349	3	9	35	1100	480	18	2889
BREAK																	
04:00 PM	12	54	1	0	34	38	15	0	103	50	1	2	2	187	111	4	614
04:15 PM	9	47	2	0	43	29	23	0	109	76	2	0	5	188	136	3	672
04:30 PM	18	58	6	0	46	30	15	2	94	62	5	6	1	202	121	3	669
04:45 PM	21	57	4	0	41	34	19	0	96	68	0	0	6	193	155	3	697
Total	60	216	13	0	164	131	72	2	402	256	8	8	14	770	523	13	2652
05:00 PM	9	63	1	0	30	32	14	0	97	69	3	6	4	233	154	4	719
05:15 PM	9	70	7	0	49	42	17	2	96	80	2	0	3	216	135	4	732
05:30 PM	20	94	5	0	32	42	22	1	88	84	1	1	1	235	136	3	765
05:45 PM	24	63	1	0	53	43	19	0	104	100	1	1	7	237	103	7	763
Total	62	290	14	0	164	159	72	3	385	333	7	8	15	921	528	18	2979
Grand Total	194	810	44	1	556	473	294	9	1428	1137	20	42	71	3836	2025	70	11010
Apprch %	18.5	77.2	4.2	0.1	41.7	35.5	22.1	0.7	54.4	43.3	0.8	1.6	1.2	63.9	33.7	1.2	
Total %	1.8	7.4	0.4	0	5	4.3	2.7	0.1	13	10.3	0.2	0.4	0.6	34.8	18.4	0.6	
Cars and Peds on Foot	173	804	42	1	543	460	283	5	1404	1120	19	18	71	3708	1974	32	10657
% Cars and Peds on Foot	89.2	99.3	95.5	100	97.7	97.3	96.3	55.6	98.3	98.5	95	42.9	100	96.7	97.5	45.7	96.8
Peds on Bicycle	20	0	2	0	0	2	9	4	0	0	0	20	0	0	0	36	93
% Peds on Bicycle	10.3	0	4.5	0	0	0.4	3.1	44.4	0	0	0	47.6	0	0	0	51.4	0.8
Heavy Vehicles	1	6	0	0	13	11	2	0	24	17	1	4	0	128	51	2	260
% Heavy Vehicles	0.5	0.7	0	0	2.3	2.3	0.7	0	1.7	1.5	5	9.5	0	3.3	2.5	2.9	2.4

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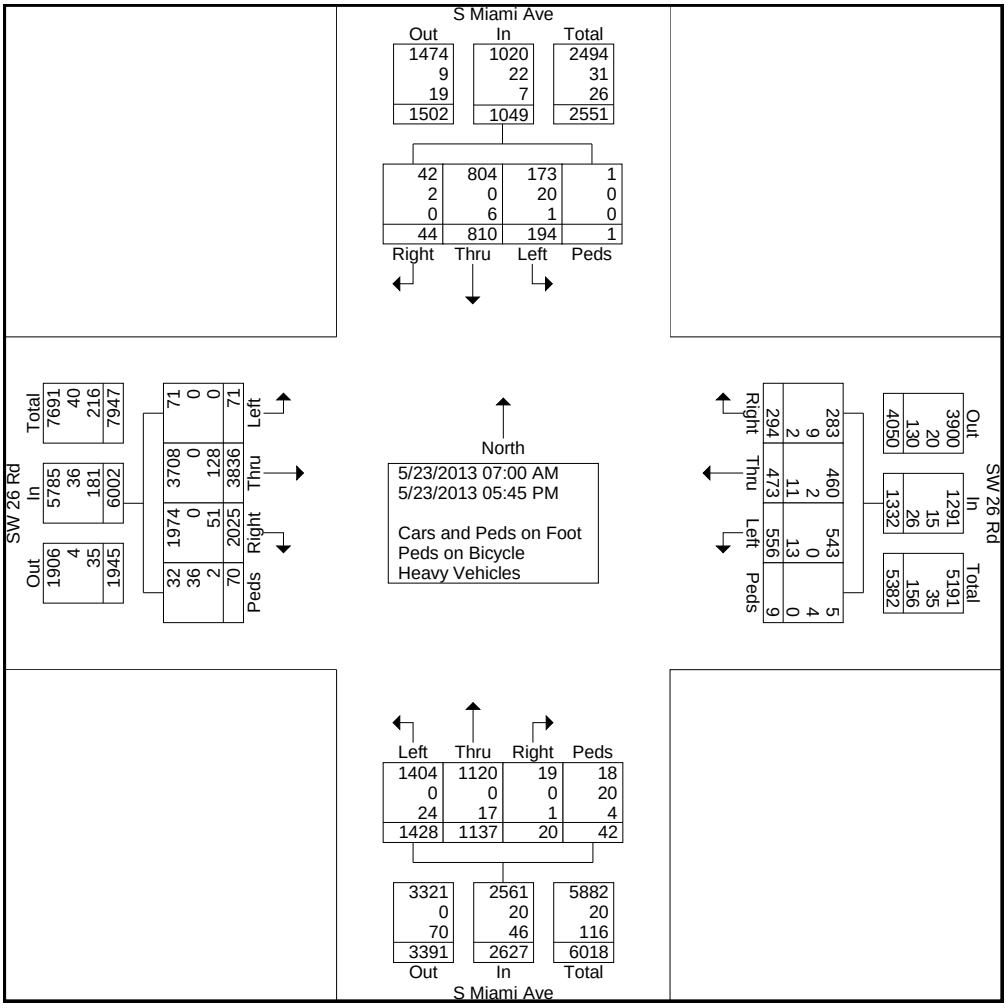
File Name : SW 26 Rd & S Miami Ave
Site Code : Int 3
Start Date : 5/23/2013
Page No : 2



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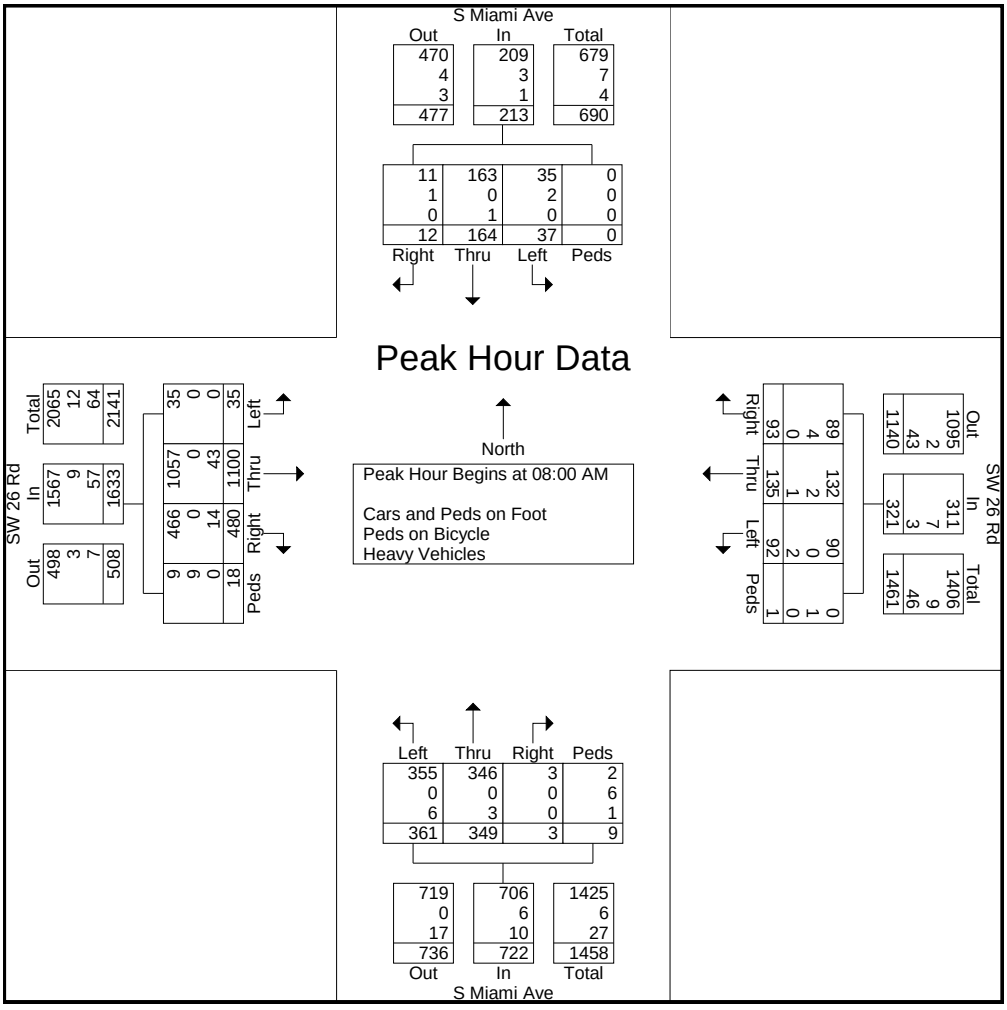
File Name : SW 26 Rd & S Miami Ave
Site Code : Int 3
Start Date : 5/23/2013
Page No : 3

	S Miami Ave Southbound					SW 26 Rd Westbound					S Miami Ave Northbound					SW 26 Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	**11**	**42**	**3**	**0**	**56**	**31**	**28**	**25**	**0**	**84**	**83**	**91**	**1**	**2**	**177**	**6**	**251**	**111**	**5**	**373**	**690**
08:15 AM	**7**	**51**	**4**	**0**	**62**	14	24	17	0	55	94	**95**	1	1	**191**	5	247	**129**	**6**	**387**	**695**
08:30 AM	**9**	**40**	**3**	**0**	**52**	**21**	**42**	19	0	82	**102**	**75**	**0**	**1**	**178**	**16**	**277**	**125**	**3**	**421**	**733**
08:45 AM	**10**	**31**	**2**	**0**	**43**	**26**	**41**	**32**	**1**	**100**	82	88	1	**5**	**176**	**8**	**325**	115	4	**452**	**771**
Total Volume	37	164	12	0	213	92	135	93	1	321	361	349	3	9	722	35	1100	480	18	1633	2889
% App. Total	17.4	77	5.6	0		28.7	42.1	29	0.3		50	48.3	0.4	1.2		2.1	67.4	29.4	1.1		
PHF	.841	.804	.750	.000	.859	.742	.804	.727	.250	.803	.885	.918	.750	.450	.945	.547	.846	.930	.750	.903	.937
Cars and Peds on Foot																	1057				
% Cars and Peds on Foot	94.6	99.4	91.7	0	98.1	97.8	97.8	95.7	0	96.9	98.3	99.1	100	22.2	97.8	100	96.1	97.1	50.0	96.0	96.7
Peds on Bicycle																					
% Peds on Bicycle	5.4	0	8.3	0	1.4	0	1.5	4.3	100	2.2	0	0	0	66.7	0.8	0	0	0	50.0	0.6	0.9
Heavy Vehicles																					
% Heavy Vehicles	0	0.6	0	0	0.5	2.2	0.7	0	0	0.9	1.7	0.9	0	11.1	1.4	0	3.9	2.9	0	3.5	2.5



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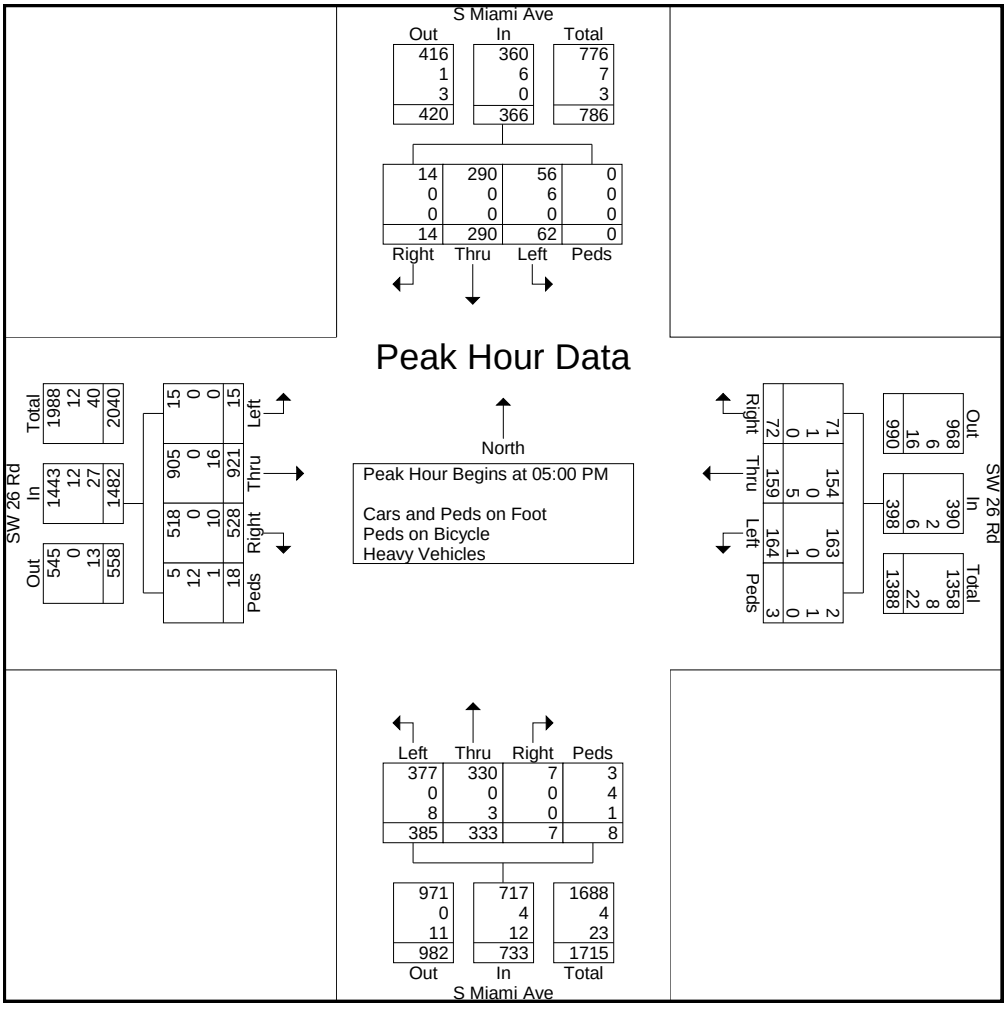
File Name : SW 26 Rd & S Miami Ave
Site Code : Int 3
Start Date : 5/23/2013
Page No : 4

	S Miami Ave Southbound					SW 26 Rd Westbound					S Miami Ave Northbound					SW 26 Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	9	63	1	0	73	30	32	14	0	76	97	69	**3**	**6**	**175**	**4**	**233**	**154**	**4**	**395**	719
05:15 PM	9	70	**7**	0	86	49	42	17	**2**	110	96	80	2	0	178	3	216	135	4	358	732
05:30 PM	**20**	**94**	5	0	**119**	32	42	**22**	**1**	**97**	**88**	**84**	**1**	**1**	**174**	**1**	**235**	**136**	**3**	**375**	**765**
05:45 PM	**24**	63	1	0	88	**53**	**43**	19	0	**115**	**104**	**100**	1	1	**206**	**7**	**237**	103	**7**	354	763
Total Volume	62	290	14	0	366	164	159	72	3	398	385	333	7	8	733	15	921	528	18	1482	2979
% App. Total	16.9	79.2	3.8	0		41.2	39.9	18.1	0.8		52.5	45.4	1	1.1		1	62.1	35.6	1.2		
PHF	.646	.771	.500	.000	.769	.774	.924	.818	.375	.865	.925	.833	.583	.333	.890	.536	.972	.857	.643	.938	.974
Cars and Peds on Foot																					
% Cars and Peds on Foot	90.3	100	100	0	98.4	99.4	96.9	98.6	66.7	98.0	97.9	99.1	100	37.5	97.8	100	98.3	98.1	27.8	97.4	97.7
Peds on Bicycle																					
% Peds on Bicycle	9.7	0	0	0	1.6	0	0	1.4	33.3	0.5	0	0	0	50.0	0.5	0	0	0	66.7	0.8	0.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0.6	3.1	0	0	1.5	2.1	0.9	0	12.5	1.6	0	1.7	1.9	5.6	1.8	1.5



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File Name : Oak Ave & Virginia St
Site Code : Int 4
Start Date : 5/28/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycle - Heavy Vehicles

	Virginia St Southbound				Oak Ave Westbound				Virginia St Northbound				Oak Ave Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	3	1	1	4	9	1	1	0	8	3	1	2	6	5	0	45
07:15 AM	5	8	2	2	9	13	1	1	3	4	6	0	1	31	1	1	88
07:30 AM	2	9	0	7	16	33	4	2	0	1	0	4	0	52	3	0	133
07:45 AM	4	13	3	9	19	24	3	4	0	11	6	5	1	64	2	0	168
Total	11	33	6	19	48	79	9	8	3	24	15	10	4	153	11	1	434
08:00 AM	8	16	1	5	12	20	3	5	0	5	3	2	2	117	4	2	205
08:15 AM	6	24	2	5	26	35	1	0	0	6	7	9	2	91	18	0	232
08:30 AM	8	12	0	5	16	16	4	2	0	13	7	6	1	75	20	5	190
08:45 AM	12	9	1	6	10	9	8	2	0	5	5	6	2	66	14	1	156
Total	34	61	4	21	64	80	16	9	0	29	22	23	7	349	56	8	783
BREAK																	
04:00 PM	1	9	1	2	12	40	3	1	0	9	0	2	0	7	7	1	95
04:15 PM	2	17	1	2	21	33	4	3	2	12	3	3	3	12	5	0	123
04:30 PM	5	15	1	6	18	49	8	0	1	8	6	4	2	22	12	2	159
04:45 PM	10	15	2	17	21	45	6	0	1	12	6	3	4	14	6	3	165
Total	18	56	5	27	72	167	21	4	4	41	15	12	9	55	30	6	542
05:00 PM	3	15	1	7	18	62	11	2	2	5	2	7	2	14	1	0	152
05:15 PM	6	8	1	10	12	71	12	2	1	3	3	4	0	5	0	1	139
05:30 PM	2	14	4	12	13	81	8	0	0	5	4	13	1	7	5	3	172
05:45 PM	4	18	1	15	24	72	9	2	1	12	2	5	2	12	5	3	187
Total	15	55	7	44	67	286	40	6	4	25	11	29	5	38	11	7	650
Grand Total	78	205	22	111	251	612	86	27	11	119	63	74	25	595	108	22	2409
Apprch %	18.8	49.3	5.3	26.7	25.7	62.7	8.8	2.8	4.1	44.6	23.6	27.7	3.3	79.3	14.4	2.9	
Total %	3.2	8.5	0.9	4.6	10.4	25.4	3.6	1.1	0.5	4.9	2.6	3.1	1	24.7	4.5	0.9	
Cars and Peds on Foot	75	202	19	94	246	605	81	24	11	115	57	63	25	593	104	21	2335
% Cars and Peds on Foot	96.2	98.5	86.4	84.7	98	98.9	94.2	88.9	100	96.6	90.5	85.1	100	99.7	96.3	95.5	96.9
Peds on Bicycle	1	2	2	17	2	3	1	3	0	3	4	11	0	1	2	1	53
% Peds on Bicycle	1.3	1	9.1	15.3	0.8	0.5	1.2	11.1	0	2.5	6.3	14.9	0	0.2	1.9	4.5	2.2
Heavy Vehicles	2	1	1	0	3	4	4	0	0	1	2	0	0	1	2	0	21
% Heavy Vehicles	2.6	0.5	4.5	0	1.2	0.7	4.7	0	0	0.8	3.2	0	0	0.2	1.9	0	0.9

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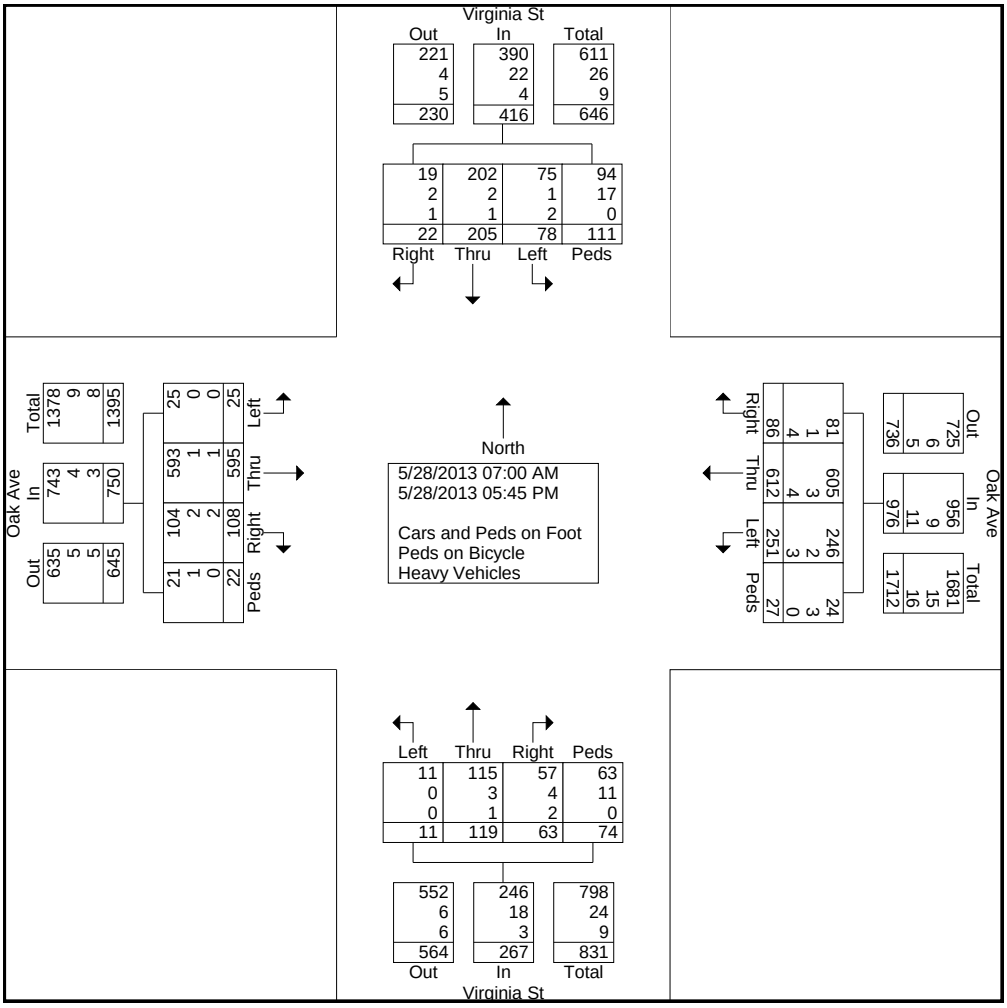
File Name : Oak Ave & Virginia St
Site Code : Int 4
Start Date : 5/28/2013
Page No : 2



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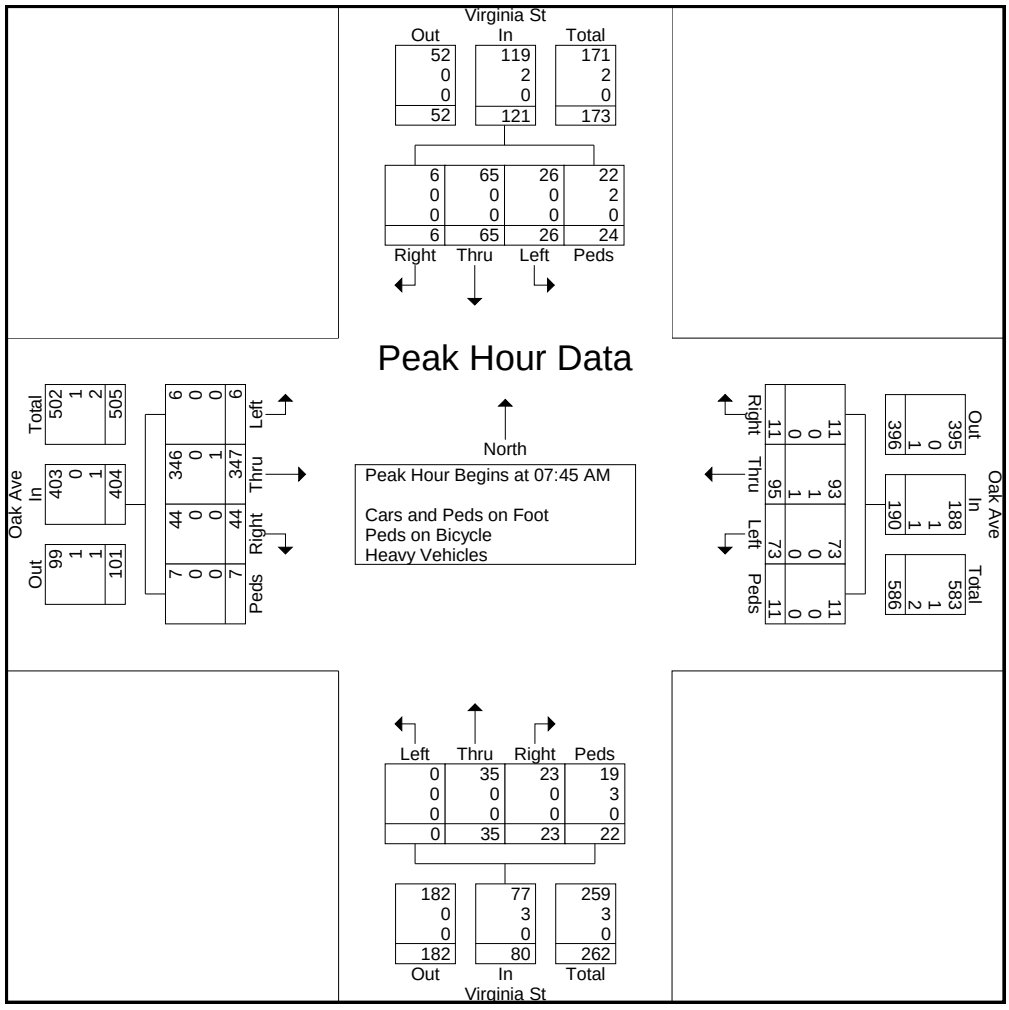
File Name : Oak Ave & Virginia St
Site Code : Int 4
Start Date : 5/28/2013
Page No : 3

	Virginia St Southbound					Oak Ave Westbound					Virginia St Northbound					Oak Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	4	13	**3**	**9**	**29**	**19**	**24**	**3**	**4**	**50**	**0**	**11**	**6**	**5**	**22**	**1**	**64**	**2**	**0**	**67**	**168**
08:00 AM	**8**	**16**	**1**	**5**	**30**	**12**	**20**	**3**	**5**	**40**	**0**	**5**	**3**	**2**	**10**	**2**	**117**	4	2	**125**	205
08:15 AM	6	**24**	2	5	**37**	**26**	**35**	1	0	**62**	0	6	**7**	**9**	22	2	91	18	0	111	**232**
08:30 AM	8	12	0	5	25	16	16	**4**	2	38	0	**13**	7	6	**26**	1	75	**20**	**5**	101	190
Total Volume	26	65	6	24	121	73	95	11	11	190	0	35	23	22	80	6	347	44	7	404	795
% App. Total	21.5	53.7	5	19.8		38.4	50	5.8	5.8		0	43.8	28.8	27.5		1.5	85.9	10.9	1.7		
PHF	.813	.677	.500	.667	.818	.702	.679	.688	.550	.766	.000	.673	.821	.611	.769	.750	.741	.550	.350	.808	.857
Cars and Peds on Foot																					
% Cars and Peds on Foot	100	100	100	91.7	98.3	100	97.9	100	100	98.9	0	100	100	86.4	96.3	100	99.7	100	100	99.8	99.0
Peds on Bicycle	0	0	0	2	2	0	1	0	0	1	0	0	0	3	3	0	0	0	0	0	6
% Peds on Bicycle	0	0	0	8.3	1.7	0	1.1	0	0	0.5	0	0	0	13.6	3.8	0	0	0	0	0	0.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	1.1	0	0	0.5	0	0	0	0	0	0	0.3	0	0	0.2	0.3



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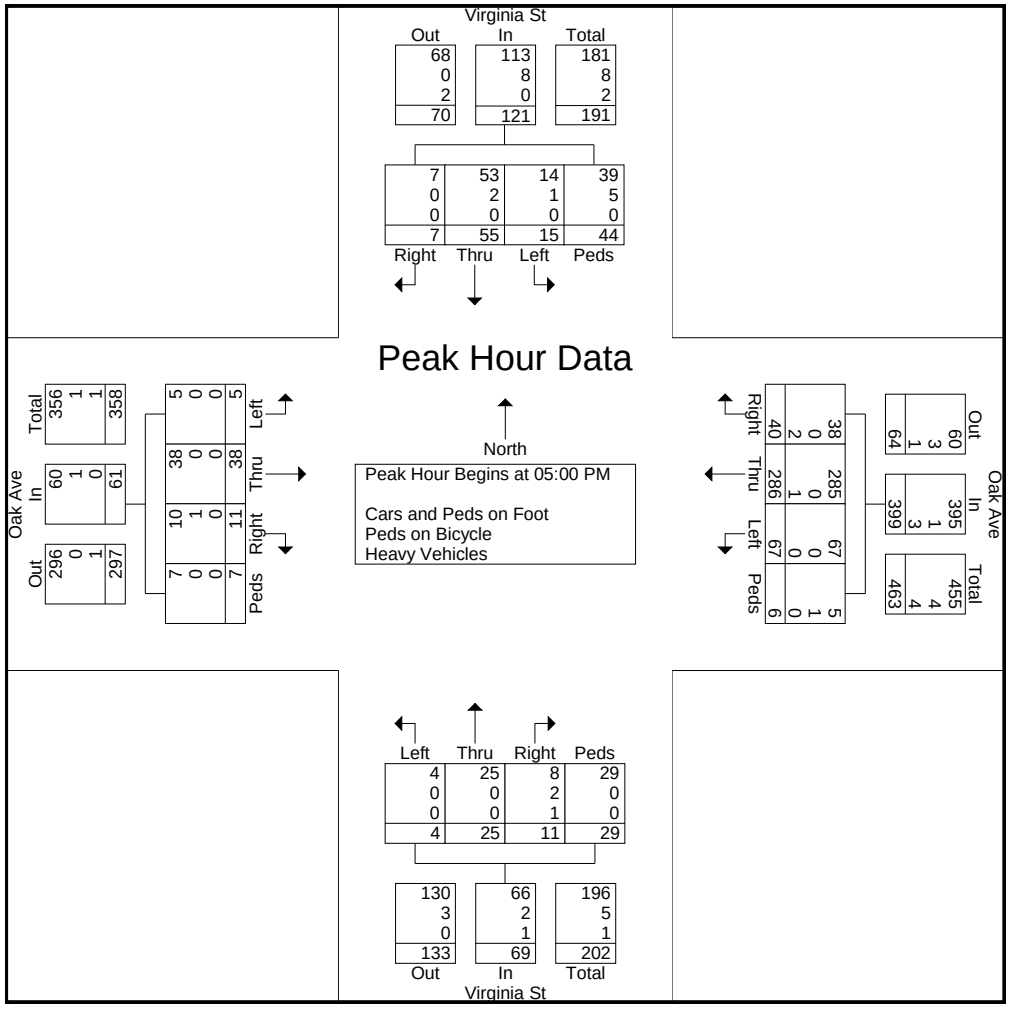
File Name : Oak Ave & Virginia St
Site Code : Int 4
Start Date : 5/28/2013
Page No : 4

	Virginia St Southbound					Oak Ave Westbound					Virginia St Northbound					Oak Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	15	1	7	26	18	62	11	**2**	**93**	**2**	**5**	**2**	**7**	**16**	**2**	**14**	1	0	17	152
05:15 PM	**6**	8	1	10	25	12	71	**12**	2	97	1	3	3	4	11	0	5	0	1	6	139
05:30 PM	**2**	**14**	**4**	**12**	**32**	**13**	**81**	8	0	102	0	5	**4**	**13**	**22**	1	7	**5**	**3**	**16**	**172**
05:45 PM	**4**	**18**	1	**15**	**38**	**24**	**72**	**9**	**2**	**107**	1	**12**	2	5	20	2	12	5	3	**22**	**187**
Total Volume	15	55	7	44	121	67	286	40	6	399	4	25	11	29	69	5	38	11	7	61	650
% App. Total	12.4	45.5	5.8	36.4		16.8	71.7	10	1.5		5.8	36.2	15.9	42		8.2	62.3	18	11.5		
PHF	.625	.764	.438	.733	.796	.698	.883	.833	.750	.932	.500	.521	.688	.558	.784	.625	.679	.550	.583	.693	.869
Cars and Peds on Foot																					
% Cars and Peds on Foot	93.3	96.4	100	88.6	93.4	100	99.7	95.0	83.3	99.0	100	100	72.7	100	95.7	100	100	90.9	100	98.4	97.5
Peds on Bicycle																					
% Peds on Bicycle	6.7	3.6	0	11.4	6.6	0	0	0	16.7	0.3	0	0	18.2	0	2.9	0	0	9.1	0	1.6	1.8
Heavy Vehicles																					
% Heavy Vehicles	0	0	0	0	0	0	0.3	5.0	0	0.8	0	0	9.1	0	1.4	0	0	0	0	0	0.6



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File Name : SW 58 AVE_SW 70 ST & US 1
Site Code : Int 5
Start Date : 5/29/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycle - Heavy Vehicles

	US 1 Southbound				SW 58 Ave Westbound				US 1 Northbound				SW 70 St Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	0	263	17	0	5	5	11	0	7	784	0	0	126	0	3	0	1221
07:15 AM	0	298	15	1	2	7	12	0	1	686	0	0	113	0	2	0	1137
07:30 AM	0	337	22	0	5	9	11	0	0	734	0	0	112	1	3	0	1234
07:45 AM	0	448	35	0	7	12	12	0	0	661	0	0	52	0	2	0	1229
Total	0	1346	89	1	19	33	46	0	8	2865	0	0	403	1	10	0	4821
08:00 AM	0	408	33	4	5	12	12	0	2	600	0	0	91	0	9	3	1179
08:15 AM	0	441	55	3	3	20	14	0	0	649	0	3	110	0	12	0	1310
08:30 AM	0	499	35	2	3	22	13	0	2	415	0	0	84	0	5	0	1080
08:45 AM	0	492	44	5	5	5	12	0	0	518	0	12	92	0	12	4	1201
Total	0	1840	167	14	16	59	51	0	4	2182	0	15	377	0	38	7	4770
BREAK																	
04:00 PM	0	661	17	2	23	14	37	0	37	419	3	8	35	29	4	0	1289
04:15 PM	0	665	17	0	26	14	37	0	3	423	0	9	71	70	14	0	1349
04:30 PM	0	647	18	2	29	17	45	0	12	430	0	10	91	0	13	0	1314
04:45 PM	0	692	8	0	43	16	40	1	10	486	0	2	110	0	14	0	1422
Total	0	2665	60	4	121	61	159	1	62	1758	3	29	307	99	45	0	5374
05:00 PM	0	651	14	4	30	10	40	0	2	232	0	3	63	157	12	3	1221
05:15 PM	0	596	31	0	35	12	40	0	11	429	0	5	82	0	34	0	1275
05:30 PM	0	629	23	3	43	12	17	2	4	573	0	6	108	0	25	0	1445
05:45 PM	0	634	23	11	35	15	35	0	3	522	0	8	109	0	34	0	1429
Total	0	2510	91	18	143	49	132	2	20	1756	0	22	362	157	105	3	5370
Grand Total	0	8361	407	37	299	202	388	3	94	8561	3	66	1449	257	198	10	20335
Apprch %	0	95	4.6	0.4	33.5	22.6	43.5	0.3	1.1	98.1	0	0.8	75.7	13.4	10.3	0.5	
Total %	0	41.1	2	0.2	1.5	1	1.9	0	0.5	42.1	0	0.3	7.1	1.3	1	0	
Cars and Peds on Foot	0	8282	399	34	296	201	383	3	94	8529	3	66	1434	256	184	10	20174
% Cars and Peds on Foot	0	99.1	98	91.9	99	99.5	98.7	100	100	99.6	100	100	99	99.6	92.9	100	99.2
Peds on Bicycle	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
% Peds on Bicycle	0	0	0	8.1	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles	0	79	8	0	3	1	5	0	0	32	0	0	15	1	14	0	158
% Heavy Vehicles	0	0.9	2	0	1	0.5	1.3	0	0	0.4	0	0	1	0.4	7.1	0	0.8

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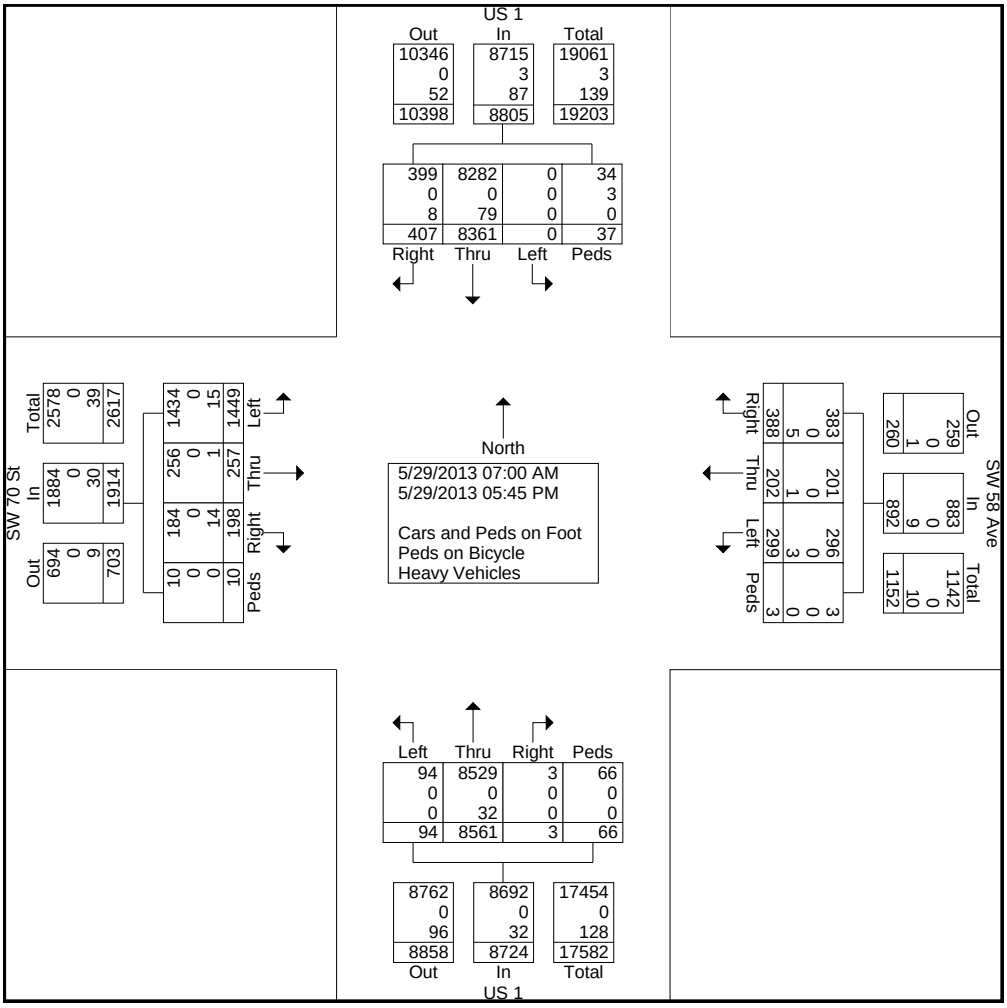
File Name : SW 58 AVE_SW 70 ST & US 1
Site Code : Int 5
Start Date : 5/29/2013
Page No : 2



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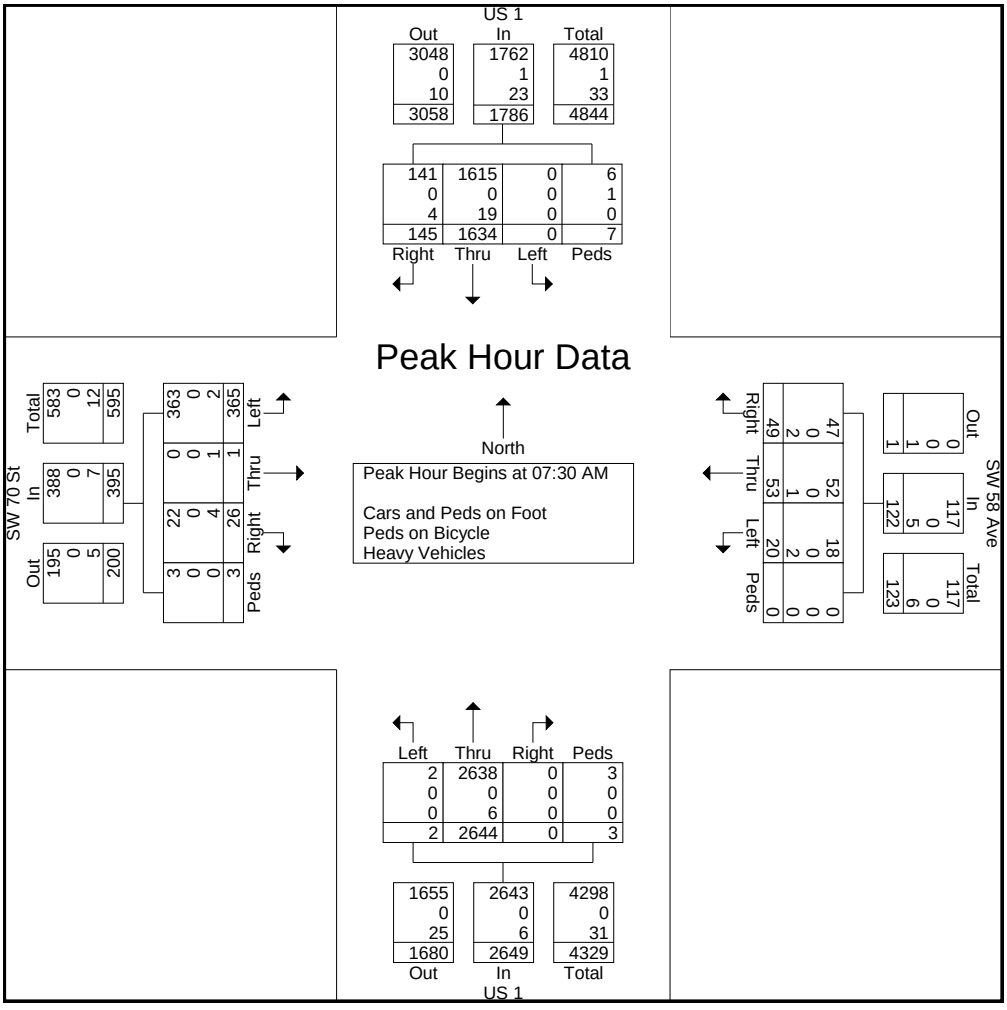
File Name : SW 58 AVE_SW 70 ST & US 1
Site Code : Int 5
Start Date : 5/29/2013
Page No : 3

	US 1 Southbound					SW 58 Ave Westbound					US 1 Northbound					SW 70 St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	337	22	0	359	5	9	11	0	25	0	**734**	0	0	**734**	**112**	**1**	3	0	116	1234
07:45 AM	0	**448**	35	0	483	**7**	12	12	0	31	0	661	0	0	661	52	0	2	0	54	1229
08:00 AM	**0**	**408**	**33**	**4**	**445**	**5**	**12**	**12**	**0**	**29**	**2**	**600**	**0**	**0**	**602**	**91**	**0**	**9**	**3**	**103**	**1179**
08:15 AM	**0**	**441**	**55**	**3**	**499**	3	**20**	**14**	**0**	**37**	0	649	0	**3**	**652**	**110**	**0**	**12**	**0**	**122**	**1310**
Total Volume	0	1634	145	7	1786	20	53	49	0	122	2	2644	0	3	2649	365	1	26	3	395	4952
% App. Total	0	91.5	8.1	0.4		16.4	43.4	40.2	0		0.1	99.8	0	0.1		92.4	0.3	6.6	0.8		
PHF	.000	.912	.659	.438	.895	.714	.663	.875	.000	.824	.250	.901	.000	.250	.902	.815	.250	.542	.250	.809	.945
Cars and Peds on Foot		1615										2638									
% Cars and Peds on Foot	0	98.8	97.2	85.7	98.7	90.0	98.1	95.9	0	95.9	100	99.8	0	100	99.8	99.5	0	84.6	100	98.2	99.2
Peds on Bicycle																					
% Peds on Bicycle	0	0	0	14.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Heavy Vehicles																					
% Heavy Vehicles	0	1.2	2.8	0	1.3	10.0	1.9	4.1	0	4.1	0	0.2	0	0	0.2	0.5	100	15.4	0	1.8	0.8



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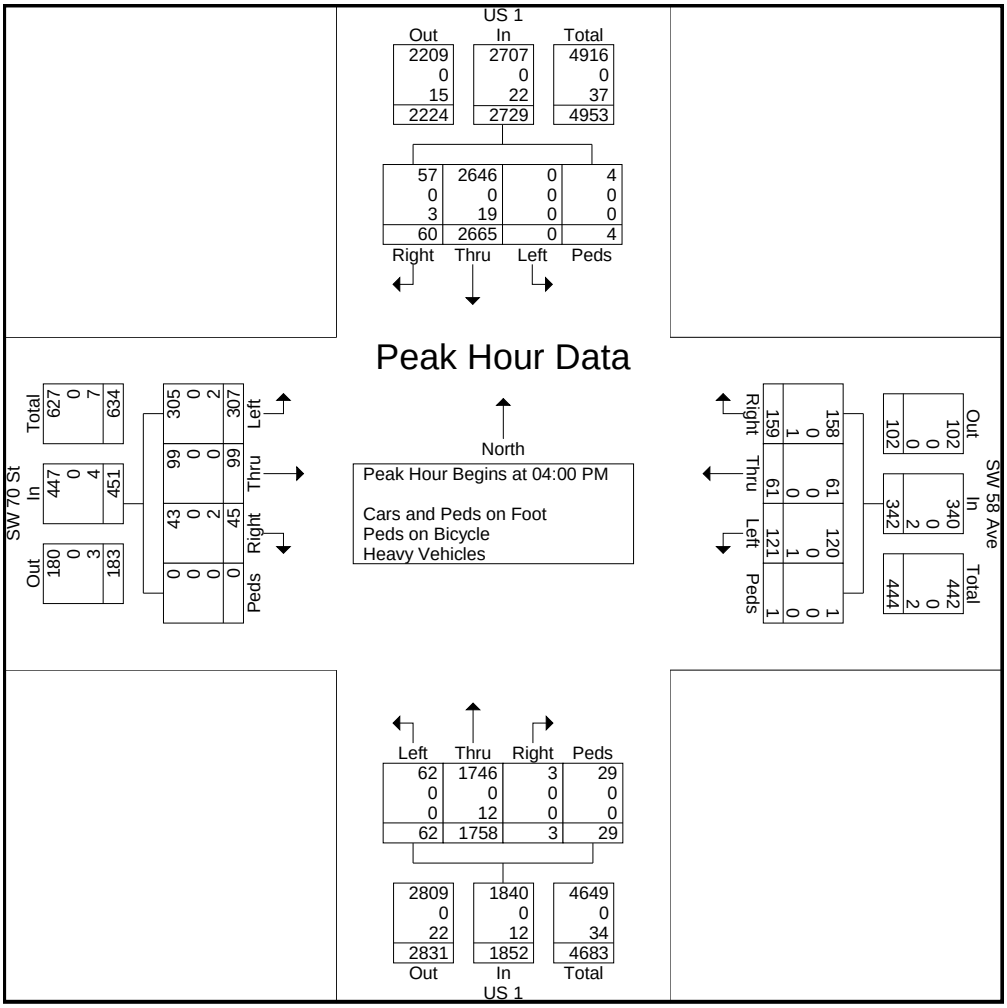
File Name : SW 58 AVE_SW 70 ST & US 1
Site Code : Int 5
Start Date : 5/29/2013
Page No : 4

	US 1 Southbound					SW 58 Ave Westbound					US 1 Northbound					SW 70 St Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	661	17	**2**	**680**	**23**	**14**	**37**	**0**	**74**	**37**	**419**	**3**	**8**	**467**	**35**	**29**	**4**	**0**	**68**	**1289**
04:15 PM	**0**	**665**	**17**	**0**	**682**	**26**	**14**	**37**	**0**	**77**	**3**	**423**	**0**	**9**	**435**	**71**	**70**	**14**	**0**	**155**	1349
04:30 PM	0	647	**18**	2	667	29	**17**	**45**	0	91	12	430	0	**10**	452	91	0	13	0	104	1314
04:45 PM	**0**	**692**	8	0	**700**	**43**	**16**	**40**	**1**	**100**	10	**486**	0	2	**498**	**110**	**0**	**14**	**0**	**124**	**1422**
Total Volume	0	2665	60	4	2729	121	61	159	1	342	62	1758	3	29	1852	307	99	45	0	451	5374
% App. Total	0	97.7	2.2	0.1		35.4	17.8	46.5	0.3		3.3	94.9	0.2	1.6		68.1	22	10	0		
PHF	.000	.963	.833	.500	.975	.703	.897	.883	.250	.855	.419	.904	.250	.725	.930	.698	.354	.804	.000	.727	.945
Cars and Peds on Foot		2646										1746									
% Cars and Peds on Foot	0	99.3	95.0	100	99.2	99.2	100	99.4	100	99.4	100	99.3	100	100	99.4	99.3	100	95.6	0	99.1	99.3
Peds on Bicycle																					
% Peds on Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles	0	19	3	0	22	1	0	1	0	2	0	12	0	0	12	2	0	2	0	4	40
% Heavy Vehicles	0	0.7	5.0	0	0.8	0.8	0	0.6	0	0.6	0	0.7	0	0	0.6	0.7	0	4.4	0	0.9	0.7



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File Name : SW 117 Ave & SW 114 Pl
Site Code : Int 6
Start Date : 5/30/2013
Page No : 1

Groups Printed- Cars and Peds on Foot - Peds on Bicycle - Heavy Vehicles

	SW 114 Pl Southbound				SW 117 Ave Westbound				SW 114 Pl Northbound				SW 117 Ave Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00 AM	10	0	3	0	34	106	3	1	1	0	93	0	3	36	0	1	291
07:15 AM	8	1	0	0	41	98	1	0	0	0	109	0	3	55	0	0	316
07:30 AM	12	2	0	0	42	85	1	0	0	0	95	0	2	51	0	1	291
07:45 AM	7	0	0	0	37	81	2	1	0	1	189	0	2	37	0	0	357
Total	37	3	3	0	154	370	7	2	1	1	486	0	10	179	0	2	1255
08:00 AM	7	0	0	0	52	113	4	1	0	0	77	0	1	30	0	0	285
08:15 AM	8	0	1	0	57	88	2	0	0	0	92	0	0	25	0	0	273
08:30 AM	6	0	0	0	42	124	0	0	0	0	106	0	0	15	0	0	293
08:45 AM	10	2	0	0	41	80	2	0	0	0	88	0	0	21	0	0	244
Total	31	2	1	0	192	405	8	1	0	0	363	0	1	91	0	0	1095
BREAK																	
04:00 PM	3	3	1	0	54	78	4	0	0	0	60	0	2	52	0	2	259
04:15 PM	3	1	0	3	61	64	3	2	0	0	71	0	1	79	0	3	291
04:30 PM	5	2	0	0	71	82	4	1	0	0	76	0	4	66	0	1	312
04:45 PM	9	3	0	1	76	67	5	1	0	0	71	0	3	91	0	3	330
Total	20	9	1	4	262	291	16	4	0	0	278	0	10	288	0	9	1192
05:00 PM	11	3	0	0	62	71	2	0	0	0	55	0	3	56	0	1	264
05:15 PM	6	0	0	0	79	95	8	1	0	0	70	0	2	60	0	0	321
05:30 PM	11	2	0	0	61	76	1	0	0	0	50	0	1	68	0	1	271
05:45 PM	12	1	1	0	59	90	3	1	0	0	42	0	1	72	0	0	282
Total	40	6	1	0	261	332	14	2	0	0	217	0	7	256	0	2	1138
Grand Total	128	20	6	4	869	1398	45	9	1	1	1344	0	28	814	0	13	4680
Apprch %	81	12.7	3.8	2.5	37.4	60.2	1.9	0.4	0.1	0.1	99.9	0	3.3	95.2	0	1.5	
Total %	2.7	0.4	0.1	0.1	18.6	29.9	1	0.2	0	0	28.7	0	0.6	17.4	0	0.3	
Cars and Peds on Foot	120	19	6	4	850	1358	43	9	1	1	1316	0	23	796	0	9	4555
% Cars and Peds on Foot	93.8	95	100	100	97.8	97.1	95.6	100	100	100	97.9	0	82.1	97.8	0	69.2	97.3
Peds on Bicycle	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	5
% Peds on Bicycle	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	30.8	0.1
Heavy Vehicles	8	1	0	0	19	39	2	0	0	0	28	0	5	18	0	0	120
% Heavy Vehicles	6.2	5	0	0	2.2	2.8	4.4	0	0	0	2.1	0	17.9	2.2	0	0	2.6

R.J. Behar & Company, Inc.

6861 S.W. 196 Avenue, Suite 302
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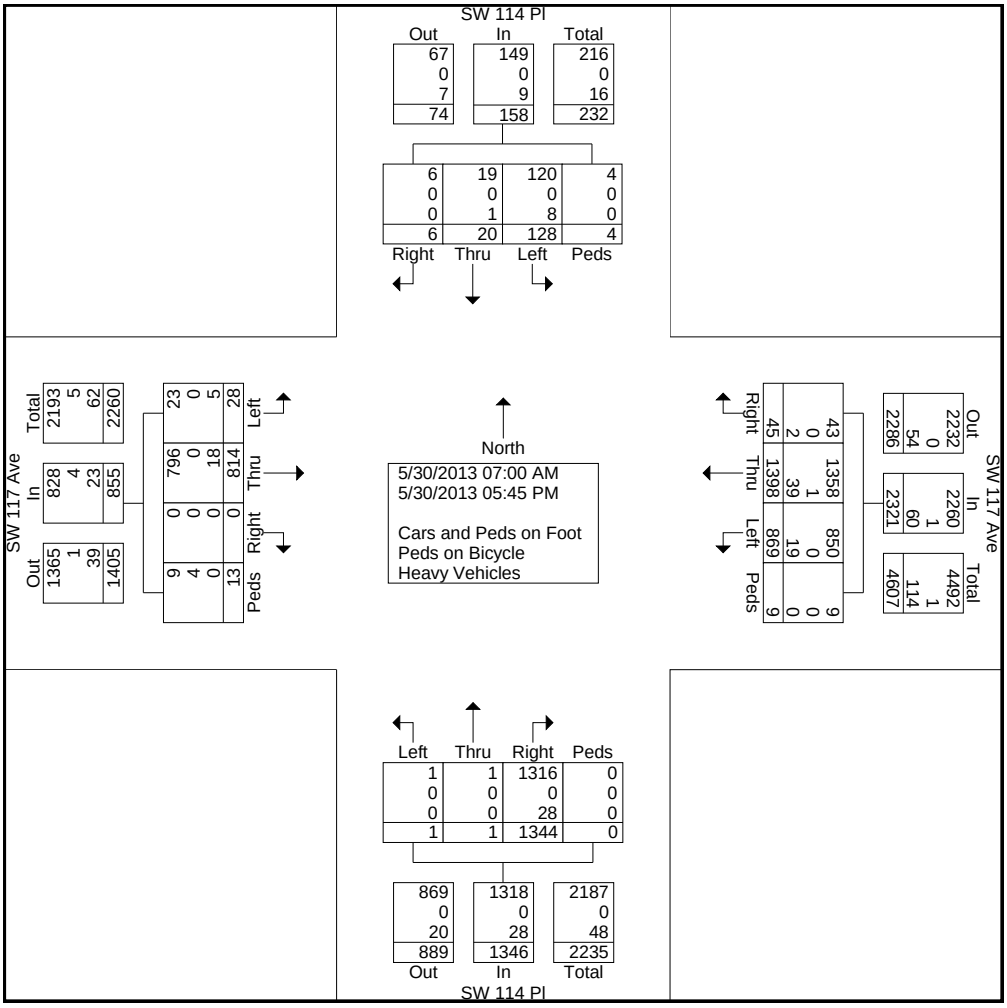
File Name : SW 117 Ave & SW 114 Pl
Site Code : Int 6
Start Date : 5/30/2013
Page No : 2



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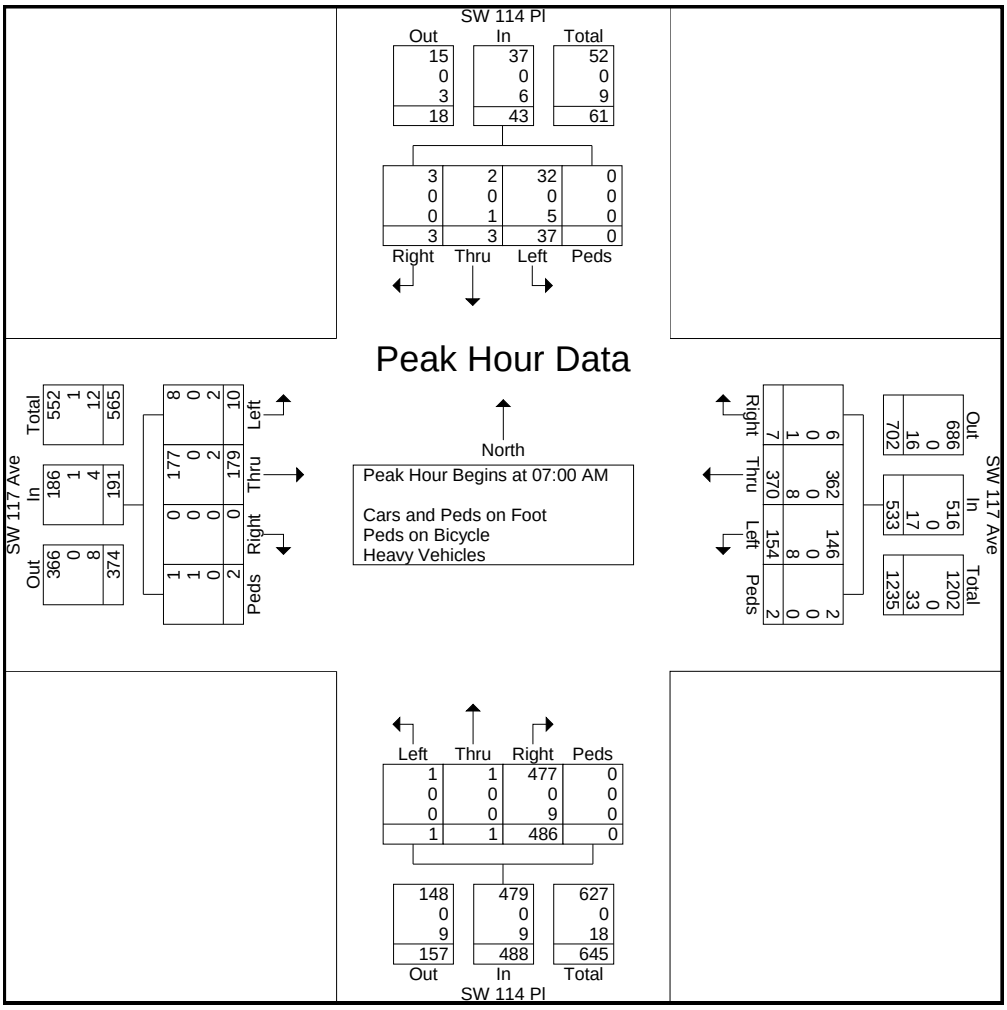
File Name : SW 117 Ave & SW 114 Pl
Site Code : Int 6
Start Date : 5/30/2013

	SW 114 Pl Southbound					SW 117 Ave Westbound					SW 114 Pl Northbound					SW 117 Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	10	0	**3**	**0**	**13**	**34**	**106**	**3**	**1**	**144**	**1**	**0**	**93**	**0**	**94**	**3**	**36**	**0**	**1**	**40**	**291**
07:15 AM	**8**	**1**	**0**	**0**	**9**	**41**	**98**	**1**	**0**	**140**	**0**	**0**	**109**	**0**	**109**	**3**	**55**	0	0	**58**	316
07:30 AM	**12**	**2**	0	0	**14**	**42**	85	1	0	128	0	0	95	0	95	2	51	0	1	54	291
07:45 AM	**7**	**0**	**0**	**0**	**7**	**37**	**81**	**2**	**1**	**121**	**0**	**1**	**189**	**0**	**190**	2	37	0	0	39	**357**
Total Volume	37	3	3	0	43	154	370	7	2	533	1	1	486	0	488	10	179	0	2	191	1255
% App. Total	86	7	7	0		28.9	69.4	1.3	0.4		0.2	0.2	99.6	0		5.2	93.7	0	1		
PHF	.771	.375	.250	.000	.768	.917	.873	.583	.500	.925	.250	.250	.643	.000	.642	.833	.814	.000	.500	.823	.879
Cars and Peds on Foot																					
% Cars and Peds on Foot	86.5	66.7	100	0	86.0	94.8	97.8	85.7	100	96.8	100	100	98.1	0	98.2	80.0	98.9	0	50.0	97.4	97.1
Peds on Bicycle																					
% Peds on Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	0.5	0.1
Heavy Vehicles																					
% Heavy Vehicles	13.5	33.3	0	0	14.0	5.2	2.2	14.3	0	3.2	0	0	1.9	0	1.8	20.0	1.1	0	0	2.1	2.9



R.J. Behar & Company, Inc.

6861 S.W. 196 Avenue, Suite 302
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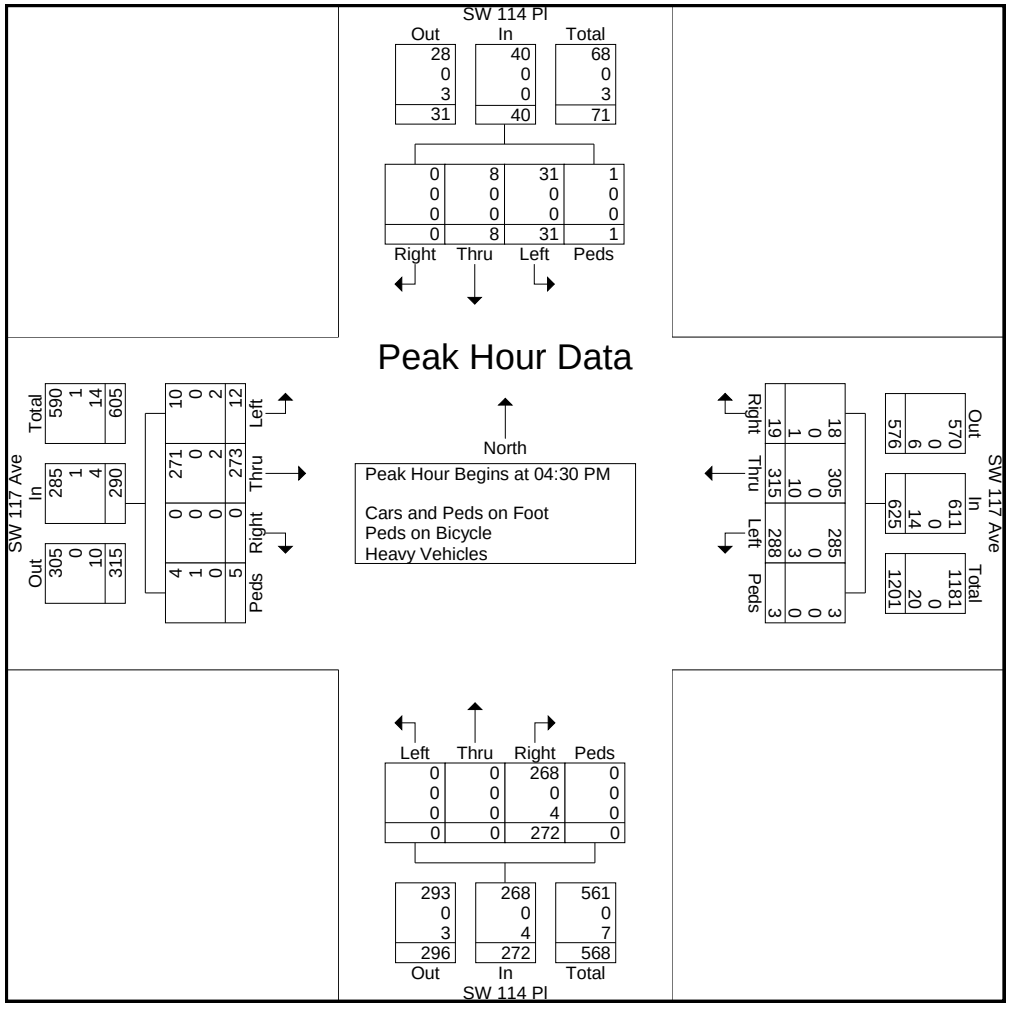
File Name : SW 117 Ave & SW 114 Pl
Site Code : Int 6
Start Date : 5/30/2013
Page No : 4

	SW 114 Pl Southbound					SW 117 Ave Westbound					SW 114 Pl Northbound					SW 117 Ave Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	5	2	0	0	7	71	82	4	**1**	**158**	**0**	**0**	**76**	**0**	**76**	**4**	**66**	**0**	**1**	**71**	**312**
04:45 PM	**9**	**3**	0	**1**	**13**	**76**	**67**	**5**	**1**	**149**	**0**	**0**	**71**	**0**	**71**	**3**	**91**	0	**3**	**97**	**330**
05:00 PM	**11**	3	0	0	**14**	62	71	2	0	135	0	0	55	0	55	3	56	0	1	60	264
05:15 PM	6	0	0	0	6	**79**	**95**	**8**	1	**183**	0	0	70	0	70	2	60	0	0	62	321
Total Volume	31	8	0	1	40	288	315	19	3	625	0	0	272	0	272	12	273	0	5	290	1227
% App. Total	77.5	20	0	2.5		46.1	50.4	3	0.5		0	0	100	0		4.1	94.1	0	1.7		
PHF	.705	.667	.000	.250	.714	.911	.829	.594	.750	.854	.000	.000	.895	.000	.895	.750	.750	.000	.417	.747	.930
Cars and Peds on Foot % Cars and Peds on Foot	100	100	0	100	100	99.0	96.8	94.7	100	97.8	0	0	98.5	0	98.5	83.3	99.3	0	80.0	98.3	98.1
Peds on Bicycle % Peds on Bicycle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.0	0.3	0.1
Heavy Vehicles % Heavy Vehicles	0	0	0	0	0	1.0	3.2	5.3	0	2.2	0	0	1.5	0	1.5	16.7	0.7	0	0	1.4	1.8



Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

NW 33RD STREET & NW 12TH AVENUE
MIAMI, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 33ST12AV
Page : 1

ALL VEHICLES

	NW 12TH AVENUE From North				NW 33RD STREET From East				NW 12TH AVENUE From South				NW 33RD STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
07:00	0	3	202	0	0	10	3	6	0	1	120	4	0	0	3	6	358
07:15	0	6	212	1	0	6	4	11	0	0	128	0	0	2	4	2	376
07:30	0	2	225	0	0	10	2	12	0	1	174	5	0	0	1	9	441
07:45	0	8	279	2	0	7	0	6	0	3	153	10	0	4	5	9	486
Hr Total	0	19	918	3	0	33	9	35	0	5	575	19	0	6	13	26	1661
08:00	0	6	217	1	0	8	3	9	0	2	161	4	0	1	4	5	421
08:15	0	3	231	1	0	12	6	4	0	1	138	2	0	2	1	11	412
08:30	0	2	251	1	0	2	1	13	0	2	133	3	0	1	1	7	417
08:45	0	7	260	1	0	5	0	11	1	4	160	4	0	1	3	4	461
Hr Total	0	18	959	4	0	27	10	37	1	9	592	13	0	5	9	27	1711
---------- * BREAK * ----------																	
16:00	0	6	162	0	0	5	2	8	0	1	307	6	0	0	0	6	503
16:15	1	9	141	3	0	10	3	18	0	7	289	9	0	1	0	2	493
16:30	0	7	168	1	0	5	1	9	0	1	278	5	0	0	4	4	483
16:45	0	6	145	2	0	6	1	9	0	4	326	5	0	2	0	3	509
Hr Total	1	28	616	6	0	26	7	44	0	13	1200	25	0	3	4	15	1988
17:00	0	2	148	1	0	8	3	7	0	3	335	5	0	1	1	5	519
17:15	0	7	170	1	0	11	6	15	0	7	314	8	0	4	7	3	553
17:30	0	9	119	4	0	14	4	9	0	4	260	5	0	1	0	7	436
17:45	0	10	138	5	0	4	3	11	0	2	246	7	0	1	4	5	436
Hr Total	0	28	575	11	0	37	16	42	0	16	1155	25	0	7	12	20	1944
TOTAL	1	93	3068	24	0	123	42	158	1	43	3522	82	0	21	38	88	7304

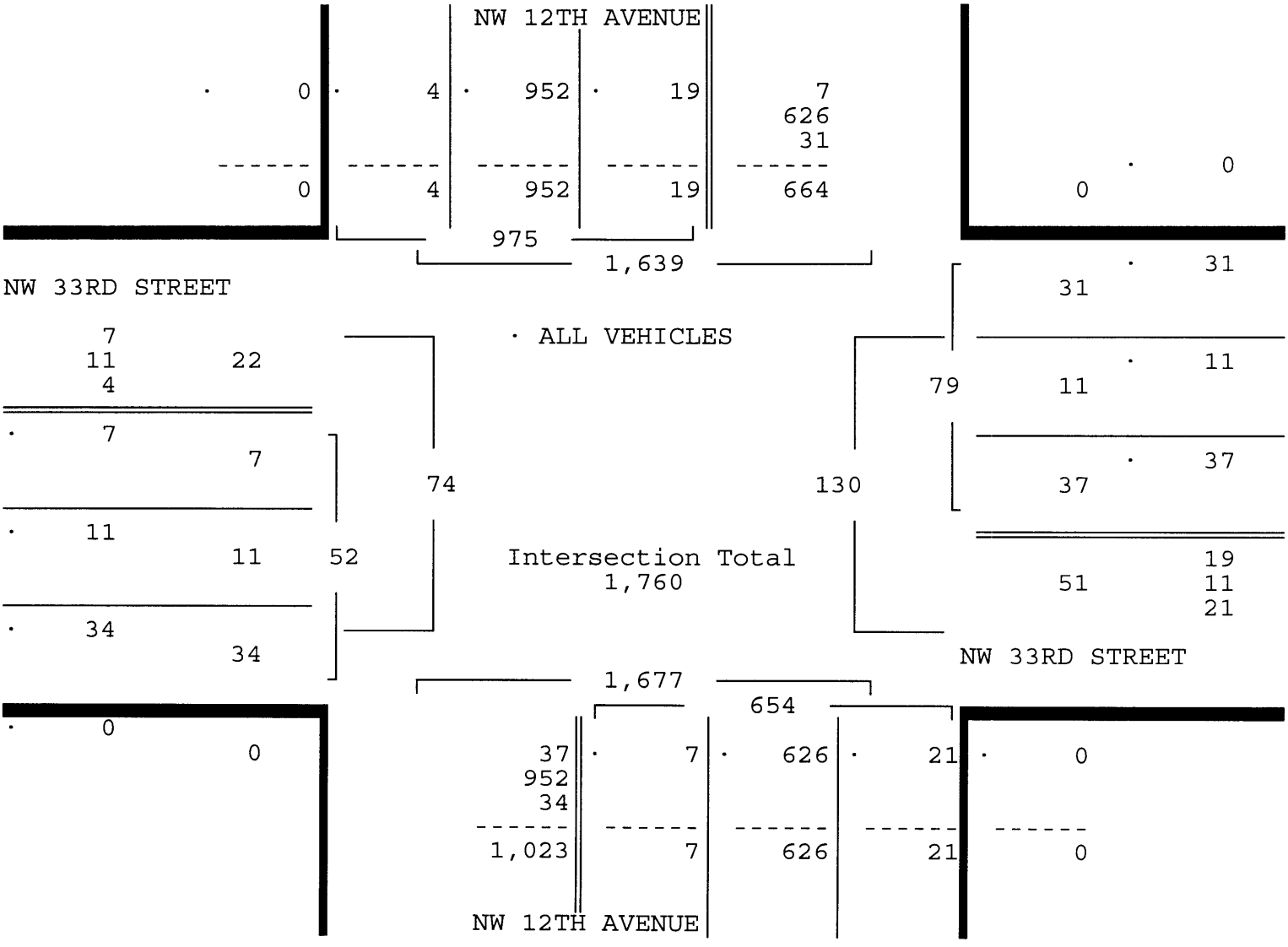
NW 33RD STREET & NW 12TH AVENUE
MIAMI, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 33ST12AV

ALL VEHICLES

	NW 12TH AVENUE From North				NW 33RD STREET From East				NW 12TH AVENUE From South				NW 33RD STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 05/30/13																	
Peak start 07:30					07:30				07:30				07:30				
Volume	0	19	952	4	0	37	11	31	0	7	626	21	0	7	11	34	
Percent	0%	2%	98%	0%	0%	47%	14%	39%	0%	1%	96%	3%	0%	13%	21%	65%	
Pk total	975				79				654				52				
Highest	07:45				07:30				07:30				07:45				
Volume	0	8	279	2	0	10	2	12	0	1	174	5	0	4	5	9	
Hi total	289				24				180				18				
PHF	.84				.82				.91				.72				



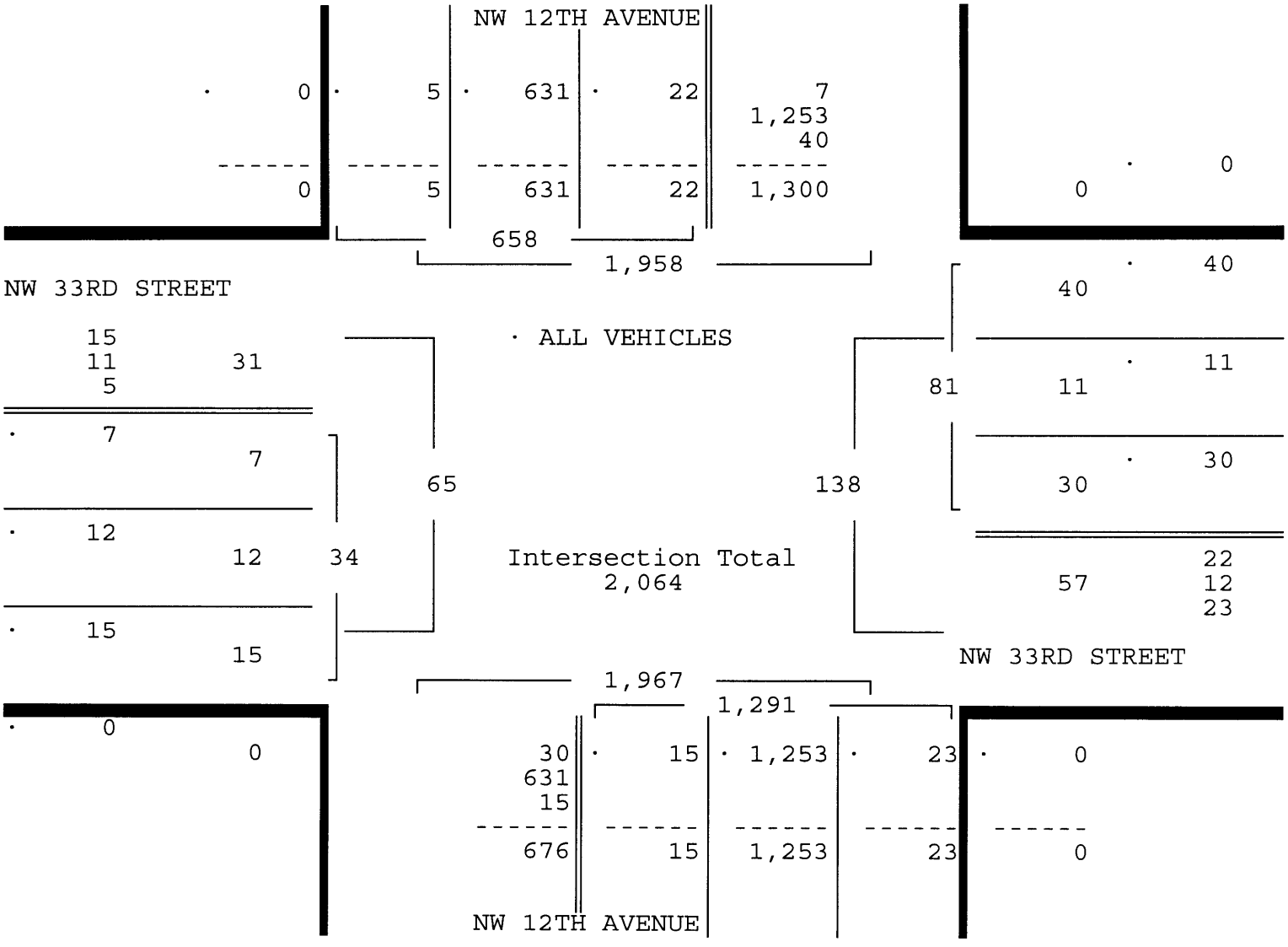
NW 33RD STREET & NW 12TH AVENUE
MIAMI, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 33ST12AV

ALL VEHICLES

	NW 12TH AVENUE From North				NW 33RD STREET From East				NW 12TH AVENUE From South				NW 33RD STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 05/30/13																	
Peak start 16:30					16:30				16:30				16:30				
Volume	0	22	631	5	0	30	11	40	0	15	1253	23	0	7	12	15	
Percent	0%	3%	96%	1%	0%	37%	14%	49%	0%	1%	97%	2%	0%	21%	35%	44%	
Pk total	658				81				1291				34				
Highest	17:15				17:15				17:00				17:15				
Volume	0	7	170	1	0	11	6	15	0	3	335	5	0	4	7	3	
Hi total	178				32				343				14				
PHF	.92				.63				.94				.61				



Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

NW 33RD STREET & NW 12TH AVENUE
MIAMI, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 33ST12AV

BIKES

	NW 12TH AVENUE From North				NW 33RD STREET From East				NW 12TH AVENUE From South				NW 33RD STREET From West				
	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Total
Date 05/30/13																	
07:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
07:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
07:45	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Hr Total	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0	1	6
08:00	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3
08:15	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	1	4
08:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
08:45	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3
Hr Total	0	0	0	4	0	0	0	4	0	0	0	2	0	0	0	2	12
---------- * BREAK * ----------																	
16:00	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	3
16:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
16:30	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2
16:45	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	5
Hr Total	0	0	0	1	0	0	0	7	0	0	0	2	0	0	0	1	11
17:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17:15	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	4
17:30	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	4	7
17:45	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	6
Hr Total	0	0	0	3	0	0	0	9	0	0	0	2	0	0	0	4	18
TOTAL	0	0	0	9	0	0	0	22	0	0	0	8	0	0	0	8	47

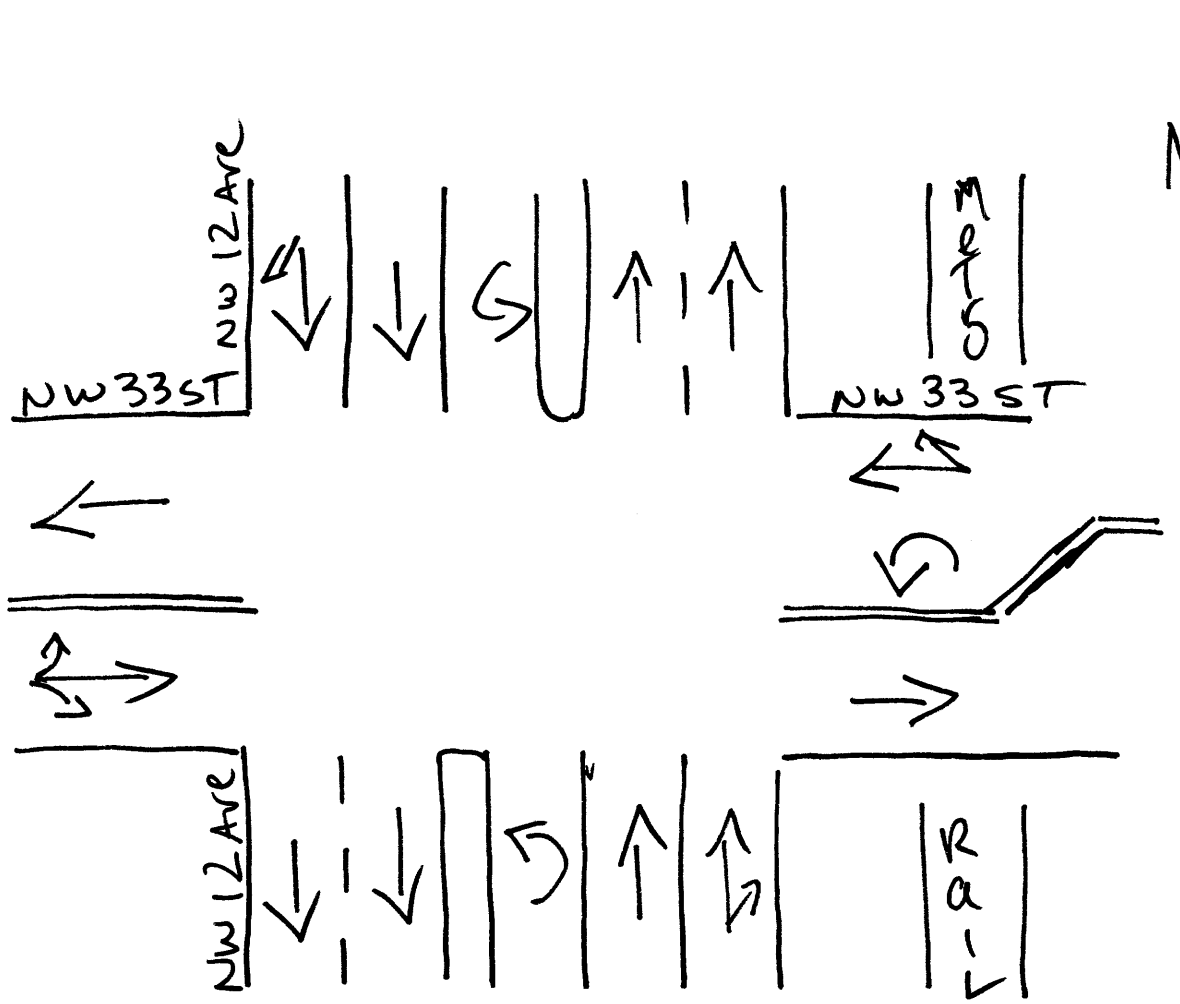
Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

NW 33RD STREET & NW 12TH AVENUE
MIAMI, FLORIDA
COUNTED BY: MARISA CRUZ
SIGNALIZED

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 33ST12AV

PEDESTRIANS

	NW 12TH AVENUE From North				NW 33RD STREET From East				NW 12TH AVENUE From South				NW 33RD STREET From West				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Total
Date 05/30/13																	
07:00	0	0	0	4	0	0	0	7	0	0	0	2	0	0	0	2	15
07:15	0	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	9
07:30	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	1	7
07:45	0	0	0	2	0	0	0	6	0	0	0	5	0	0	0	1	14
Hr Total	0	0	0	16	0	0	0	18	0	0	0	7	0	0	0	4	45
08:00	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	6
08:15	0	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	7
08:30	0	0	0	7	0	0	0	4	0	0	0	0	0	0	0	2	13
08:45	0	0	0	1	0	0	0	6	0	0	0	0	0	0	0	1	8
Hr Total	0	0	0	15	0	0	0	16	0	0	0	0	0	0	0	3	34
---------- * BREAK * ----------																	
16:00	0	0	0	5	0	0	0	12	0	0	0	1	0	0	0	1	19
16:15	0	0	0	1	0	0	0	6	0	0	0	1	0	0	0	1	9
16:30	0	0	0	2	0	0	0	4	0	0	0	1	0	0	0	4	11
16:45	0	0	0	2	0	0	0	2	0	0	0	1	0	0	0	2	7
Hr Total	0	0	0	10	0	0	0	24	0	0	0	4	0	0	0	8	46
17:00	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	0	5
17:15	0	0	0	6	0	0	0	4	0	0	0	2	0	0	0	2	14
17:30	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	5	8
17:45	0	0	0	7	0	0	0	6	0	0	0	3	0	0	0	3	19
Hr Total	0	0	0	16	0	0	0	13	0	0	0	7	0	0	0	10	46
TOTAL	0	0	0	57	0	0	0	71	0	0	0	18	0	0	0	25	171



Miami, Florida

May 30, 2013

drawn by: Luis Palomino

signalized

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

NE/NW 17TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 17STMIAM
Page : 1

ALL VEHICLES

	N MIAMI AVENUE From North				NE 17TH STREET From East				N MIAMI AVENUE From South				NW 17TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
07:00	0	0	60	0	0	4	0	17	0	0	0	0	0	0	0	0	81
07:15	0	0	99	0	0	3	0	11	0	0	0	0	0	0	0	0	113
07:30	0	0	143	0	0	2	0	8	0	0	0	0	0	0	0	0	153
07:45	0	0	174	1	0	1	0	21	0	0	0	0	0	1	0	0	198
Hr Total	0	0	476	1	0	10	0	57	0	0	0	0	0	1	0	0	545
08:00	0	0	179	0	0	1	0	16	0	0	0	0	0	0	0	0	196
08:15	0	0	203	0	0	2	0	27	0	0	0	0	0	0	0	0	232
08:30	0	0	161	0	0	0	1	15	0	0	0	0	0	0	0	1	178
08:45	0	0	210	0	0	3	0	22	0	0	0	0	0	0	0	0	235
Hr Total	0	0	753	0	0	6	1	80	0	0	0	0	0	0	0	1	841
---------- * BREAK * ----------																	
16:00	0	0	83	0	0	2	0	83	0	0	0	0	0	0	0	0	168
16:15	1	0	90	0	0	1	0	72	0	0	0	0	0	0	0	0	164
16:30	0	0	73	0	0	2	0	137	0	0	0	0	1	0	0	0	213
16:45	0	0	89	0	0	1	0	100	0	0	0	0	1	0	0	0	191
Hr Total	1	0	335	0	0	6	0	392	0	0	0	0	2	0	0	0	736
17:00	0	1	90	0	0	1	0	110	0	0	0	0	0	0	0	0	202
17:15	0	1	76	0	0	3	0	121	0	0	0	0	0	0	0	0	201
17:30	0	0	93	0	0	2	0	72	0	0	0	0	0	0	0	0	167
17:45	0	0	73	0	0	3	0	59	0	0	0	0	0	0	0	0	135
Hr Total	0	2	332	0	0	9	0	362	0	0	0	0	0	0	0	0	705
TOTAL	1	2	1896	1	0	31	1	891	0	0	0	0	2	1	0	1	2827

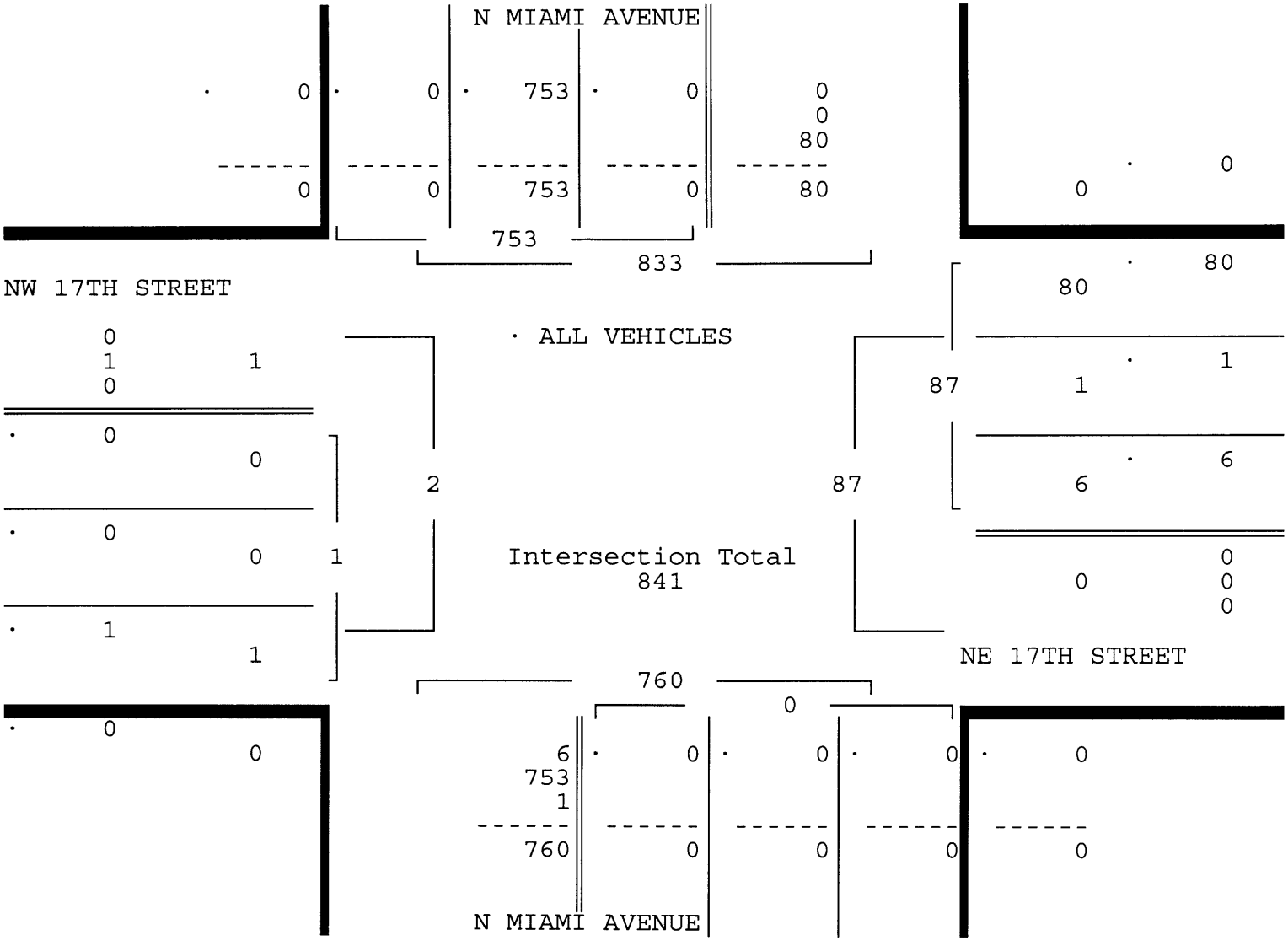
NE/NW 17TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 17STMIAM
Page : 2

ALL VEHICLES

	N MIAMI AVENUE From North				NE 17TH STREET From East				N MIAMI AVENUE From South				NW 17TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 09:00 on 05/30/13																	
Peak start 08:00					08:00				08:00				08:00				
Volume	0	0	753	0	0	6	1	80	0	0	0	0	0	0	0	1	
Percent	0%	0%	100%	0%	0%	7%	1%	92%	0%	0%	0%	0%	0%	0%	0%	100%	
Pk total	753				87				0				1				
Highest	08:45				08:15				07:00				08:30				
Volume	0	0	210	0	0	2	0	27	0	0	0	0	0	0	0	1	
Hi total	210				29				0				1				
PHF	.90				.75				.0				.25				



NE/NW 17TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: LUIS PALOMINO
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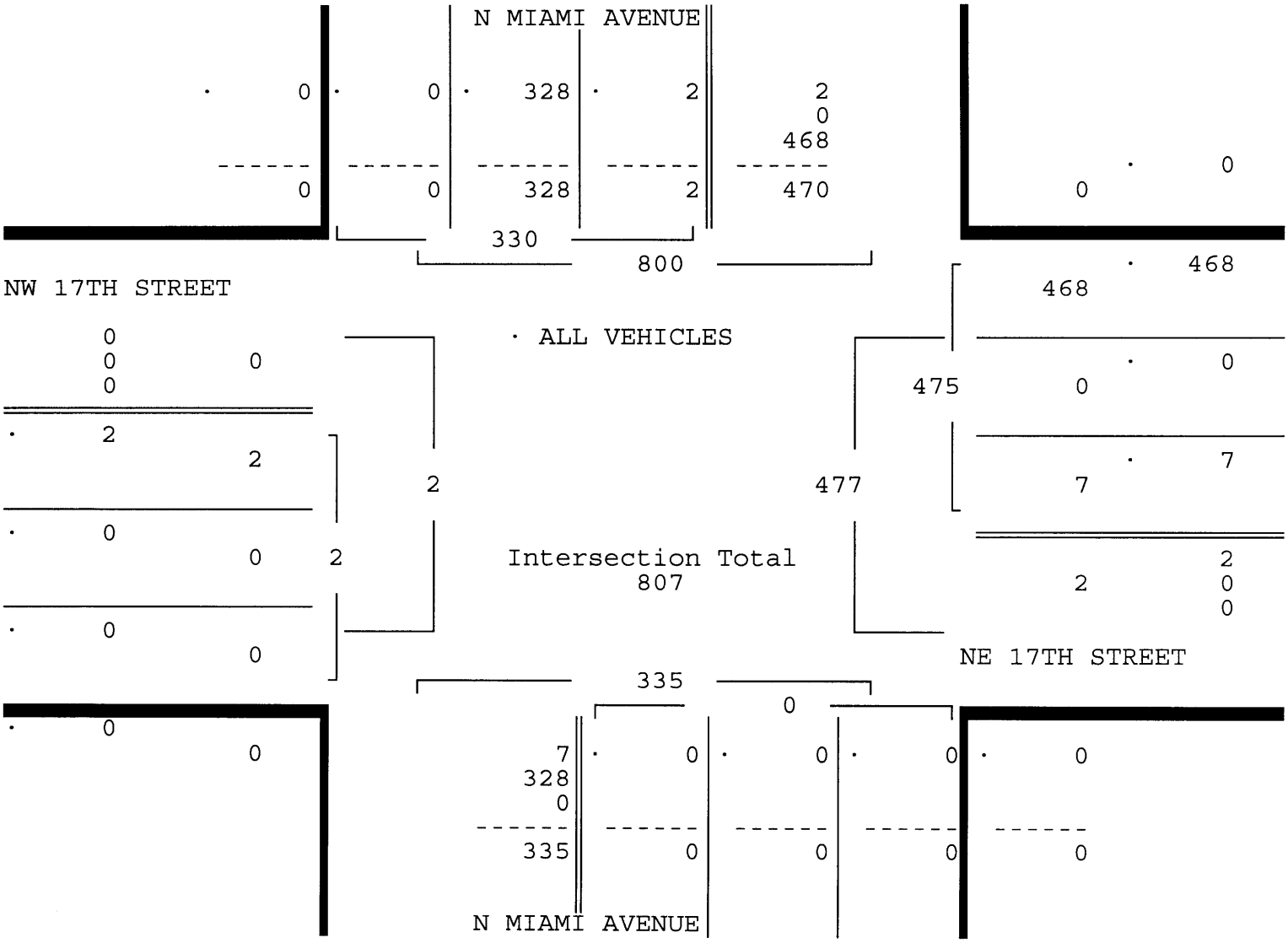
Start Date: 05/30/13
File I.D. : 17STMIAM

ALL VEHICLES

	N MIAMI AVENUE From North				NE 17TH STREET From East				N MIAMI AVENUE From South				NW 17TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/30/13																	
Peak Hour Analysis By Entire Intersection for the Period: 16:00 to 18:00 on 05/30/13																	
Peak start	16:30				16:30				16:30				16:30				
Volume	0	2	328	0	0	7	0	468	0	0	0	0	2	0	0	0	
Percent	0%	1%	99%	0%	0%	1%	0%	99%	0%	0%	0%	0%	100%	0%	0%	0%	
Pk total	330				475				0				2				
Highest	17:00				16:30				07:00				16:30				
Volume	0	1	90	0	0	2	0	137	0	0	0	0	1	0	0	0	
Hi total	91				139				0				1				
PHF	.91				.85				.0				.50				



NE/NW 17TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
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Start Date: 05/30/13
File I.D. : 17STMIAM

BIKES

	N MIAMI AVENUE From North				NE 17TH STREET From East				N MIAMI AVENUE From South				NW 17TH STREET From West				
	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Left	Thru	Right	BIKES	Total
Date 05/30/13																	
07:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
07:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Hr Total	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	6
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
08:30	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
08:45	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2	5
Hr Total	0	0	0	1	0	0	0	3	0	0	0	1	0	0	0	4	9
* BREAK *																	
16:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Hr Total	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	4	6
17:00	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	4
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
17:30	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	1	4
17:45	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	6
Hr Total	0	0	0	0	0	0	0	7	0	0	0	2	0	0	0	6	15
TOTAL	0	0	0	2	0	0	0	14	0	0	0	3	0	0	0	17	36

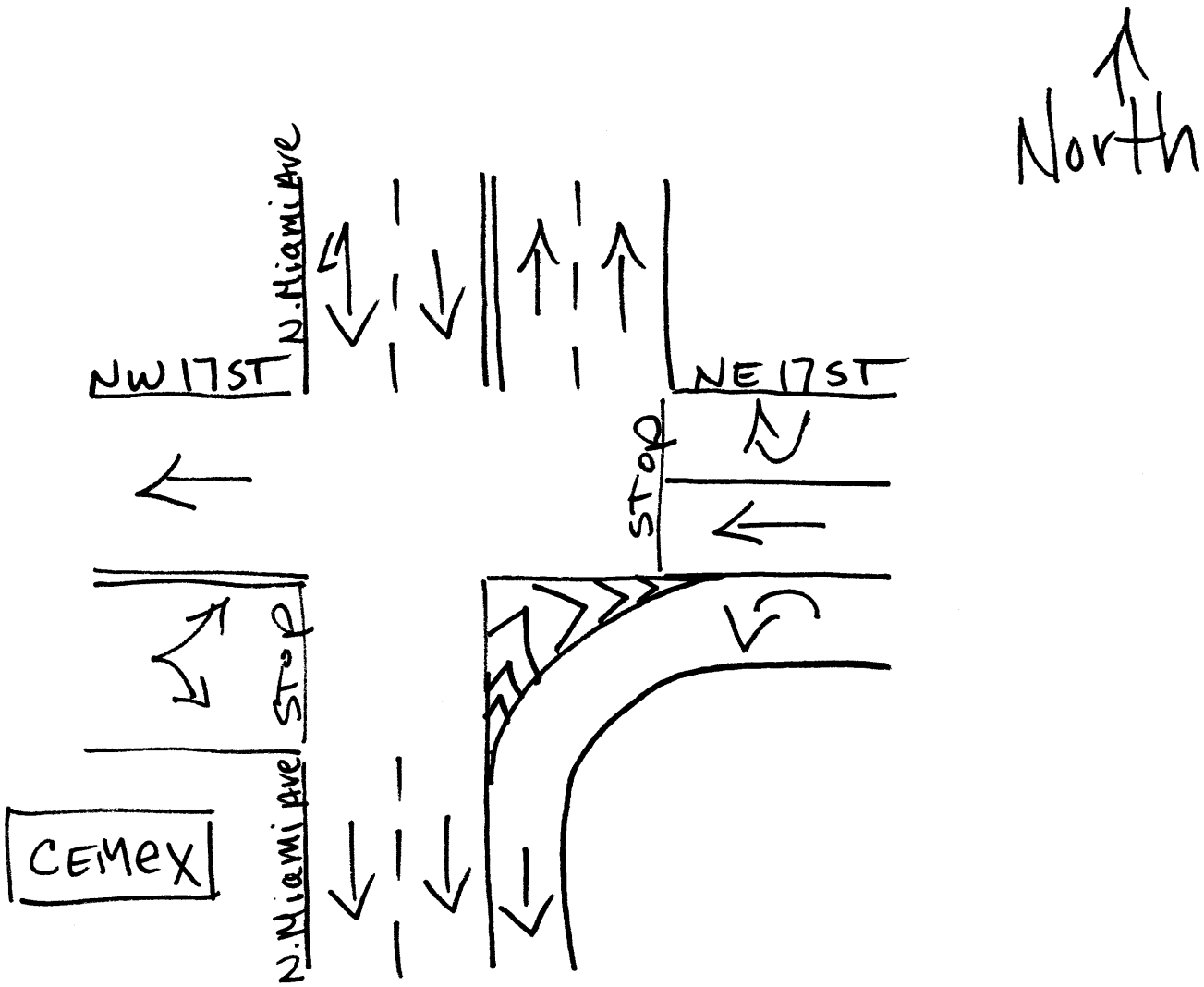
NE/NW 17TH STREET & N MIAMI AVENUE
MIAMI, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00130088
Start Date: 05/30/13
File I.D. : 17STMIAM
Page : 1

PEDESTRIANS

	N MIAMI AVENUE From North				NE 17TH STREET From East				N MIAMI AVENUE From South				NW 17TH STREET From West				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Total
Date 05/30/13																	
07:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
07:15	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	2	6
07:30	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
Hr Total	0	0	0	4	0	0	0	3	0	0	0	2	0	0	0	5	14
08:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	4
08:15	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	4	6
08:30	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	6	9
08:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4
Hr Total	0	0	0	2	0	0	0	5	0	0	0	1	0	0	0	15	23
---------- * BREAK * ----------																	
16:00	0	0	0	3	0	0	0	7	0	0	0	7	0	0	0	5	22
16:15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	6
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
16:45	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	4	8
Hr Total	0	0	0	7	0	0	0	7	0	0	0	9	0	0	0	21	44
17:00	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	6	10
17:15	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	7	12
17:30	0	0	0	4	0	0	0	8	0	0	0	1	0	0	0	7	20
17:45	0	0	0	1	0	0	0	4	0	0	0	1	0	0	0	9	15
Hr Total	0	0	0	6	0	0	0	20	0	0	0	2	0	0	0	29	57
TOTAL	0	0	0	19	0	0	0	35	0	0	0	14	0	0	0	70	138



Miami, Florida

May 30, 2013

drawn by: Luis Palomino

NOT signalized

Intersection Analyses

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	347	44	73	95	11	0	35	23	26	65	6
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.96	0.99		0.96	1.00		0.96	0.97		0.96
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	190.0	190.0	190.0	189.0	190.0	190.0	190.0	190.0	190.0	190.0	190.0
Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Cap, veh/h	75	1060	179	412	525	55	0	149	80	120	168	19
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.00	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	7	1567	264	465	776	81	0	1144	616	263	1289	145
Grp Volume(v), veh/h	557	0	0	260	0	0	0	0	80	140	0	0
Grp Sat Flow(s),veh/h/ln	1838	0	0	1323	0	0	0	0	1761	1697	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	1.9	0.0	0.0
Cycle Q Clear(g_c), s	7.3	0.0	0.0	2.7	0.0	0.0	0.0	0.0	2.1	4.0	0.0	0.0
Prop In Lane	0.01		0.14	0.40		0.06	0.00		0.35	0.23		0.09
Lane Grp Cap(c), veh/h	1314	0	0	992	0	0	0	0	229	306	0	0
V/C Ratio(X)	0.42	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.35	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1314	0	0	992	0	0	0	0	1021	1065	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.9	0.0	0.0	3.1	0.0	0.0	0.0	0.0	20.5	21.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.7	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.2	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.9	1.7	0.0	0.0
Lane Grp Delay (d), s/veh	4.0	0.0	0.0	3.8	0.0	0.0	0.0	0.0	21.2	22.1	0.0	0.0
Lane Grp LOS	A			A					C	C		
Approach Vol, veh/h		557			260			80			140	
Approach Delay, s/veh		4.0			3.8			21.2			22.1	
Approach LOS		A			A			C			C	

Timer												
Assigned Phs		6			2			4			8	
Phs Duration (G+Y+Rc), s		40.0			40.0			11.7			11.7	
Change Period (Y+Rc), s		5.0			5.0			5.0			5.0	
Max Green Setting (Gmax), s		35.0			35.0			30.0			30.0	
Max Q Clear Time (g_c+I1), s		9.3			4.7			4.1			6.0	
Green Ext Time (p_c), s		1.9			1.9			1.0			1.0	

Intersection Summary												
HCM 2010 Ctrl Delay			7.7									
HCM 2010 LOS			A									

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	38	11	67	286	40	4	25	11	15	55	7
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.95	0.98		0.95	0.98		0.97
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	190.0	190.0	190.0	189.0	190.0	190.0	186.3	190.0	190.0	190.0	190.0
Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Cap, veh/h	136	834	279	268	869	120	90	158	48	115	158	31
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	87	1227	411	271	1278	177	95	1250	384	241	1255	249
Grp Volume(v), veh/h	84	0	0	469	0	0	72	0	0	112	0	0
Grp Sat Flow(s),veh/h/ln	1725	0	0	1726	0	0	1729	0	0	1745	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	0.0	5.6	0.0	0.0	1.9	0.0	0.0	3.0	0.0	0.0
Prop In Lane	0.10		0.24	0.20		0.10	0.11		0.22	0.21		0.14
Lane Grp Cap(c), veh/h	1249	0	0	1257	0	0	296	0	0	305	0	0
V/C Ratio(X)	0.07	0.00	0.00	0.37	0.00	0.00	0.24	0.00	0.00	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1249	0	0	1257	0	0	1067	0	0	1078	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	2.8	0.0	0.0	3.5	0.0	0.0	20.5	0.0	0.0	20.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	0.3	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.2	0.0	0.0	2.0	0.0	0.0	0.8	0.0	0.0	1.3	0.0	0.0
Lane Grp Delay (d), s/veh	2.8	0.0	0.0	4.4	0.0	0.0	20.8	0.0	0.0	21.5	0.0	0.0
Lane Grp LOS	A			A			C			C		
Approach Vol, veh/h		84			469			72			112	
Approach Delay, s/veh		2.8			4.4			20.8			21.5	
Approach LOS		A			A			C			C	

Timer												
Assigned Phs		6			2			4			8	
Phs Duration (G+Y+Rc), s		40.0			40.0			11.5			11.5	
Change Period (Y+Rc), s		5.0			5.0			5.0			5.0	
Max Green Setting (Gmax), s		35.0			35.0			30.0			30.0	
Max Q Clear Time (g_c+I1), s		2.8			7.6			3.9			5.0	
Green Ext Time (p_c), s		1.3			1.3			0.8			0.8	

Intersection Summary		
HCM 2010 Ctrl Delay		8.4
HCM 2010 LOS		A

Notes

Movement	EBL	EBR	EBR2	NBL2	NBL	NBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	365	0	26	20	53	49	2	2644	0	0	1634	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0	3.0	5.3			5.3	5.3
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00	1.00	0.91			0.91	1.00
Frpb, ped/bikes	1.00		0.98	1.00	1.00	0.96	1.00	1.00			1.00	0.97
Flpb, ped/bikes	1.00		1.00	0.99	0.99	1.00	1.00	1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00	0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3502		1376	1539	1655	1491	1805	5187			5136	1522
Flt Permitted	0.95		1.00	0.95	0.95	1.00	0.09	1.00			1.00	1.00
Satd. Flow (perm)	3502		1376	1539	1655	1491	167	5187			5136	1522
Peak-hour factor, PHF	0.81	0.25	0.54	0.71	0.66	0.88	0.25	0.90	0.25	0.25	0.91	0.66
Adj. Flow (vph)	451	0	48	28	80	56	8	2938	0	0	1796	220
RTOR Reduction (vph)	0	0	41	0	0	52	0	0	0	0	0	67
Lane Group Flow (vph)	451	0	7	25	83	4	8	2938	0	0	1796	153
Confl. Peds. (#/hr)	6		3	3		6	3					3
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	0%	100%	15%	10%	2%	4%	0%	0%	0%	0%	1%	3%
Turn Type	NA		Perm	Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases	3				4		1	6			2	
Permitted Phases			3	4		4	6					2
Actuated Green, G (s)	26.0		26.0	12.7	12.7	12.7	126.0	126.0			121.0	121.0
Effective Green, g (s)	26.0		26.0	12.7	12.7	12.7	126.0	126.0			121.0	121.0
Actuated g/C Ratio	0.14		0.14	0.07	0.07	0.07	0.70	0.70			0.67	0.67
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0	3.0	5.3			5.3	5.3
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5	2.0	1.0			1.0	1.0
Lane Grp Cap (vph)	505		198	108	116	105	135	3630			3452	1023
v/s Ratio Prot	c0.13						0.00	c0.57			0.35	
v/s Ratio Perm			0.01	0.02	0.05	0.00	0.04					0.10
v/c Ratio	0.89		0.04	0.23	0.72	0.04	0.06	0.81			0.52	0.15
Uniform Delay, d1	75.6		66.2	79.0	81.9	78.0	11.0	18.7			14.9	10.8
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	17.8		0.1	0.8	17.7	0.1	0.1	2.1			0.6	0.3
Delay (s)	93.5		66.3	79.8	99.6	78.1	11.1	20.7			15.4	11.1
Level of Service	F		E	E	F	E	B	C			B	B
Approach Delay (s)	90.9				89.2			20.7			15.0	
Approach LOS	F				F			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	EBR2	NBL2	NBL	NBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	307	99	45	121	61	159	62	1758	3	0	2665	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0	3.0	5.3			5.3	5.3
Lane Util. Factor	0.97		1.00	0.95	0.95	1.00	1.00	0.91			0.91	1.00
Frpb, ped/bikes	1.00		0.92	1.00	1.00	0.97	1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00		1.00	0.88	0.88	1.00	1.00	1.00			1.00	1.00
Frt	0.94		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.97		1.00	0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	3347		1435	1496	1505	1554	1805	5131			5136	1538
Flt Permitted	0.97		1.00	0.95	0.95	1.00	0.04	1.00			1.00	1.00
Satd. Flow (perm)	3347		1435	1496	1505	1554	81	5131			5136	1538
Peak-hour factor, PHF	0.70	0.35	0.80	0.70	0.90	0.88	0.42	0.90	0.25	0.25	0.96	0.83
Adj. Flow (vph)	439	283	56	173	68	181	148	1953	12	0	2776	72
RTOR Reduction (vph)	0	0	47	0	0	70	0	0	0	0	0	28
Lane Group Flow (vph)	722	0	9	121	120	112	148	1965	0	0	2776	44
Confl. Peds. (#/hr)	4		29	29		4						
Heavy Vehicles (%)	1%	0%	4%	1%	0%	1%	0%	1%	0%	0%	1%	5%
Turn Type	NA		Perm	Perm	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases	3				4		1	6			2	
Permitted Phases			3	4		4	6					2
Actuated Green, G (s)	24.4		24.4	11.0	11.0	11.0	99.3	99.3			91.3	91.3
Effective Green, g (s)	24.4		24.4	11.0	11.0	11.0	99.3	99.3			91.3	91.3
Actuated g/C Ratio	0.16		0.16	0.07	0.07	0.07	0.66	0.66			0.61	0.61
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0	3.0	5.3			5.3	5.3
Vehicle Extension (s)	2.5		2.5	2.5	2.5	2.5	2.0	1.0			1.0	1.0
Lane Grp Cap (vph)	544		233	109	110	113	111	3396			3126	936
v/s Ratio Prot	c0.22						c0.04	0.38			0.54	
v/s Ratio Perm			0.01	c0.08	0.08	0.07	c0.84					0.03
v/c Ratio	1.33		0.04	1.11	1.09	0.99	1.33	0.58			0.89	0.05
Uniform Delay, d1	62.8		52.9	69.5	69.5	69.4	43.6	13.9			25.0	11.8
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	159.6		0.1	118.9	112.4	79.8	198.9	0.7			4.2	0.1
Delay (s)	222.4		53.0	188.4	181.9	149.2	242.5	14.6			29.2	11.9
Level of Service	F		D	F	F	F	F	B			C	B
Approach Delay (s)	210.2				169.8			30.6			28.8	
Approach LOS	F				F			C			C	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.3
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	1100	480	92	135	93	361	349	3	37	164	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	0.99		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	182.7	184.5	186.3	188.1	190.0	186.3	188.1	190.0	190.0	188.3	190.0
Lanes	1	3	1	1	1	1	1	2	0	1	2	0
Cap, veh/h	583	1882	539	293	691	593	548	1097	0	353	616	0
Arrive On Green	0.05	0.34	0.00	0.07	0.37	0.00	0.17	0.29	0.00	0.04	0.16	0.00
Sat Flow, veh/h	1810	5481	1568	1774	1881	1615	1774	3763	0	1810	3765	0
Grp Volume(v), veh/h	64	1294	0	124	169	0	406	379	0	44	205	0
Grp Sat Flow(s),veh/h/ln	1810	1827	1568	1774	1881	1615	1774	1881	0	1810	1883	0
Q Serve(g_s), s	1.4	13.1	0.0	2.7	4.0	0.0	9.7	5.1	0.0	1.3	3.1	0.0
Cycle Q Clear(g_c), s	1.4	13.1	0.0	2.7	4.0	0.0	9.7	5.1	0.0	1.3	3.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	583	1882	539	293	691	593	548	1097	0	353	616	0
V/C Ratio(X)	0.11	0.69	0.00	0.42	0.24	0.00	0.74	0.35	0.00	0.12	0.33	0.00
Avail Cap(c_a), veh/h	1076	2383	682	706	789	677	548	2038	0	585	2039	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	18.2	0.0	13.4	14.2	0.0	12.9	18.0	0.0	20.9	23.9	0.0
Incr Delay (d2), s/veh	0.1	0.5	0.0	1.0	0.1	0.0	4.7	0.9	0.0	0.1	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.6	5.7	0.0	1.2	1.8	0.0	4.4	2.4	0.0	0.6	1.4	0.0
Lane Grp Delay (d), s/veh	12.3	18.7	0.0	14.3	14.3	0.0	17.7	18.9	0.0	20.9	24.1	0.0
Lane Grp LOS	B	B		B	B		B	B		C	C	
Approach Vol, veh/h		1358			293			785			249	
Approach Delay, s/veh		18.4			14.3			18.3			23.6	
Approach LOS		B			B			B			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	6.4	27.1		8.0	28.6		14.0	23.8		5.7	15.6	
Change Period (Y+Rc), s	3.0	4.9		3.5	4.9		3.0	5.0		3.0	5.0	
Max Green Setting (Gmax), s	21.0	28.1		19.5	27.1		11.0	35.0		11.0	35.0	
Max Q Clear Time (g_c+I1), s	3.4	15.1		4.7	6.0		11.7	7.1		3.3	5.1	
Green Ext Time (p_c), s	0.1	7.1		0.2	9.3		0.0	3.4		0.0	3.4	

Intersection Summary		
HCM 2010 Ctrl Delay		18.4
HCM 2010 LOS		B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	921	528	164	159	72	385	333	7	62	290	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	190.0	186.3	186.3	188.1	184.5	190.0	186.3	188.2	190.0	190.0	190.0	190.0
Lanes	1	3	1	1	1	1	1	2	0	1	2	0
Cap, veh/h	507	1579	447	368	666	583	529	1183	0	415	759	0
Arrive On Green	0.03	0.28	0.00	0.10	0.36	0.00	0.18	0.31	0.00	0.06	0.20	0.00
Sat Flow, veh/h	1810	5588	1583	1792	1845	1615	1774	3763	0	1810	3800	0
Grp Volume(v), veh/h	28	949	0	213	173	0	414	401	0	95	377	0
Grp Sat Flow(s),veh/h/ln	1810	1863	1583	1792	1845	1615	1774	1882	0	1810	1900	0
Q Serve(g_s), s	0.7	10.0	0.0	4.7	4.5	0.0	10.0	5.6	0.0	2.8	6.0	0.0
Cycle Q Clear(g_c), s	0.7	10.0	0.0	4.7	4.5	0.0	10.0	5.6	0.0	2.8	6.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	507	1579	447	368	666	583	529	1183	0	415	759	0
V/C Ratio(X)	0.06	0.60	0.00	0.58	0.26	0.00	0.78	0.34	0.00	0.23	0.50	0.00
Avail Cap(c_a), veh/h	718	2957	838	593	1138	997	529	2207	0	623	2228	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	21.2	0.0	13.4	15.4	0.0	13.3	18.0	0.0	19.7	24.2	0.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	1.4	0.2	0.0	6.9	0.8	0.0	0.1	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	0.3	4.4	0.0	2.1	2.0	0.0	5.5	2.6	0.0	1.2	3.0	0.0
Lane Grp Delay (d), s/veh	16.4	21.4	0.0	14.9	15.5	0.0	20.2	18.7	0.0	19.8	26.6	0.0
Lane Grp LOS	B	C		B	B		C	B		B	C	
Approach Vol, veh/h		977			386			815			472	
Approach Delay, s/veh		21.3			15.2			19.5			25.2	
Approach LOS		C			B			B			C	

Timer												
Assigned Phs	7	4		3	8		5	2		1	6	
Phs Duration (G+Y+Rc), s	5.1	24.2		10.4	29.5		15.0	26.4		7.2	18.6	
Change Period (Y+Rc), s	3.0	4.9		3.5	4.9		3.0	5.0		3.0	5.0	
Max Green Setting (Gmax), s	10.0	36.1		15.5	42.1		12.0	40.0		12.0	40.0	
Max Q Clear Time (g_c+I1), s	2.7	12.0		6.7	6.5		12.0	7.6		4.8	8.0	
Green Ext Time (p_c), s	0.0	7.1		0.4	7.8		0.0	4.8		0.1	4.8	

Intersection Summary		
HCM 2010 Ctrl Delay		20.5
HCM 2010 LOS		C

Notes

Photos

1. Oak Avenue and Virginia Street

1. Oak Avenue and Virginia Street

2. SW 58th Avenue/SW 70th Street and US 1

2. SW 58th Avenue/SW 70th Street and US 1

2. SW 58th Avenue/SW 70th Street and US 1

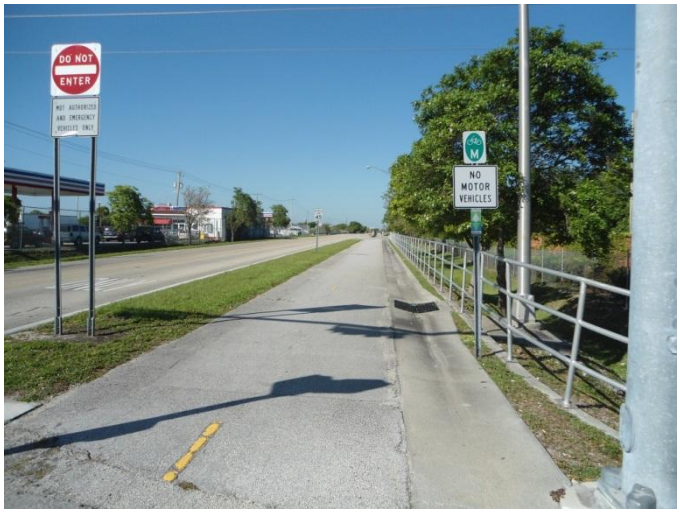
3. N Miami Ave at N 19th Street

3. N Miami Ave at N 19th Street

4. Roberta Hunter Park/South Dade Trail

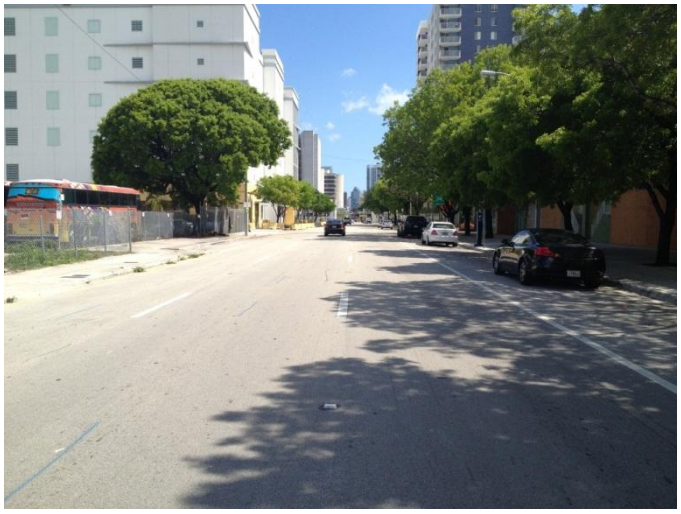
4. Roberta Hunter Park/South Dade Trail

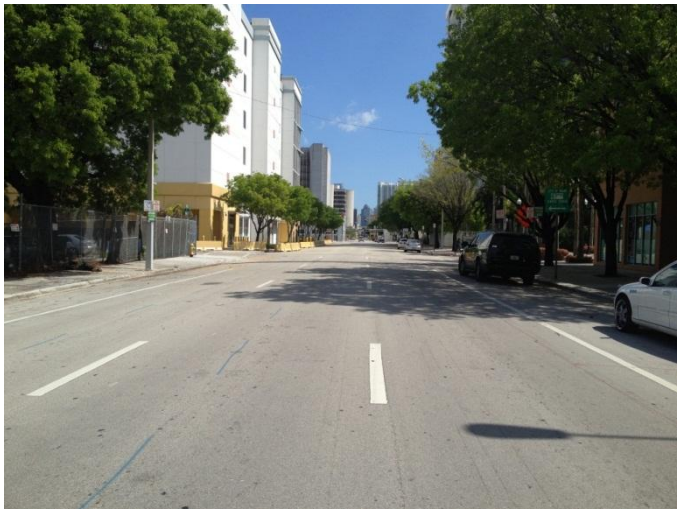
4. Roberta Hunter Park/South Dade Trail



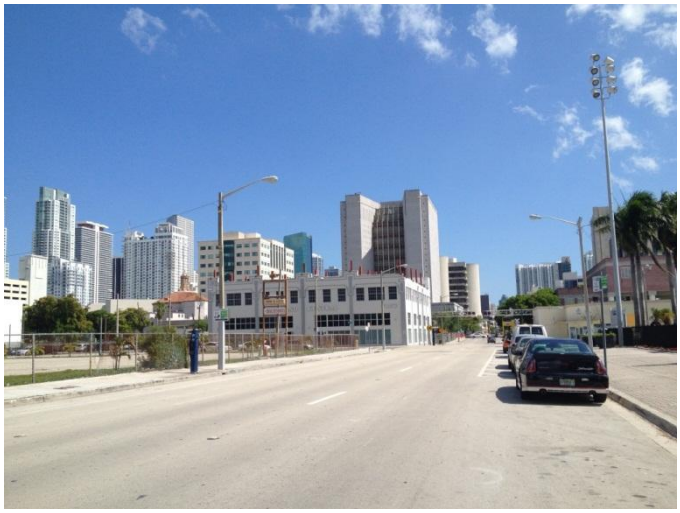
4. Roberta Hunter Park/South Dade Trail

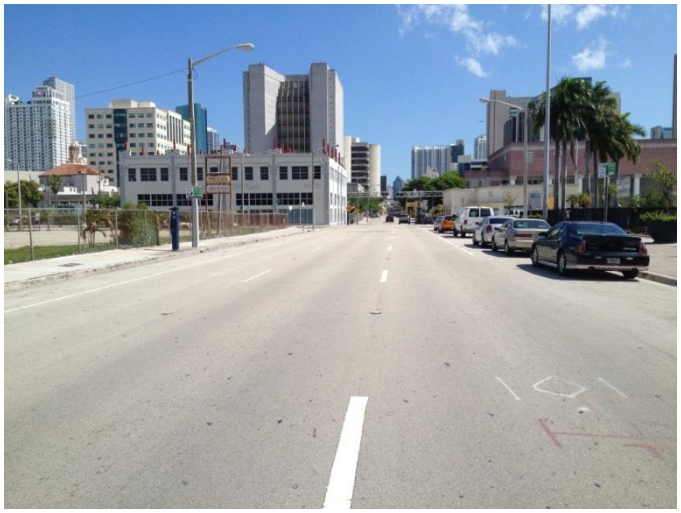
8. N Miami Avenue

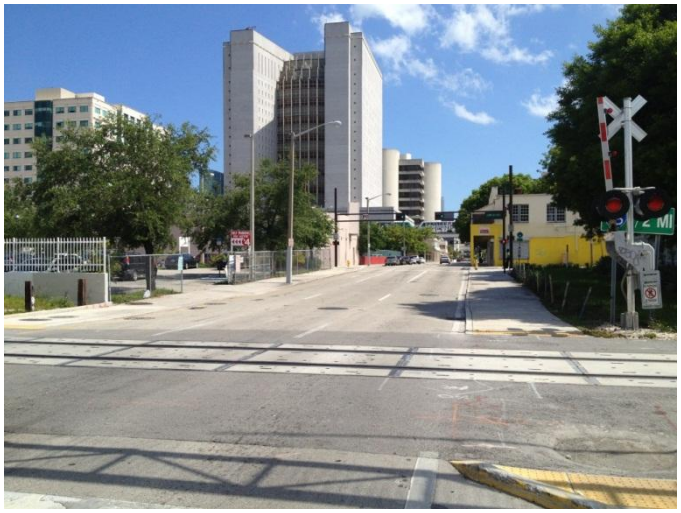


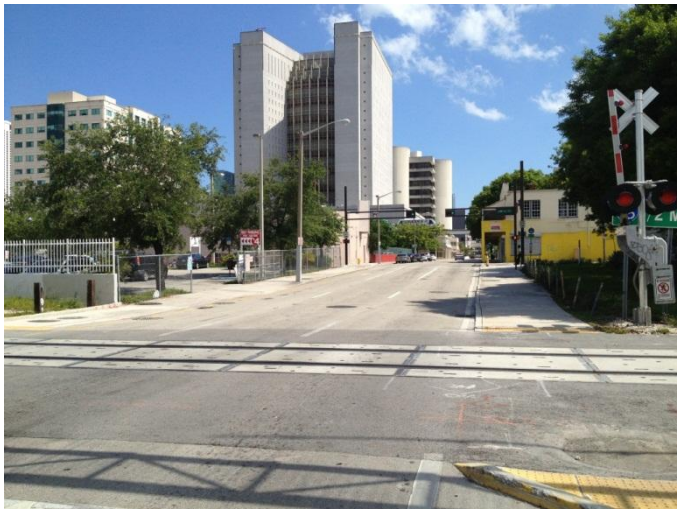


8. N Miami Avenue

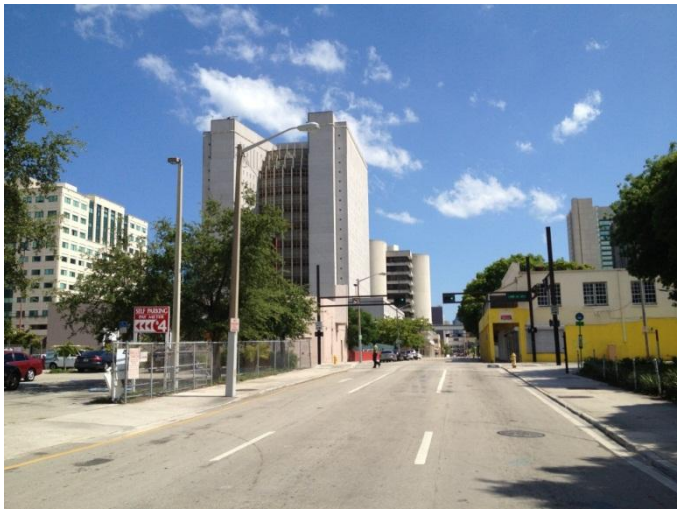




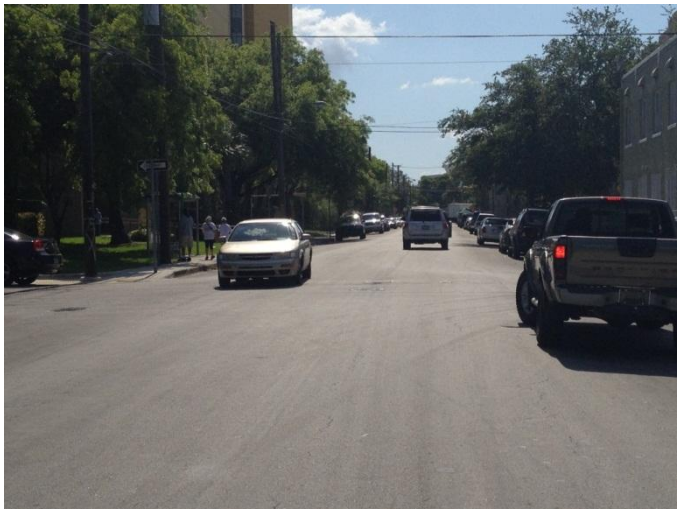




8. N Miami Avenue



11. NW 4th Street

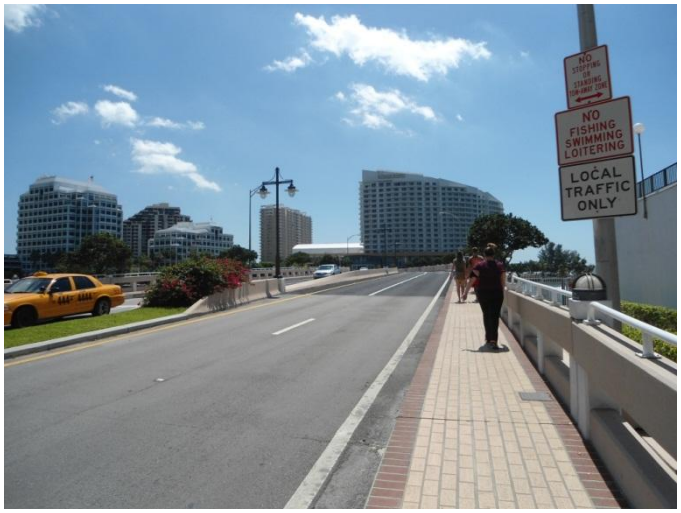


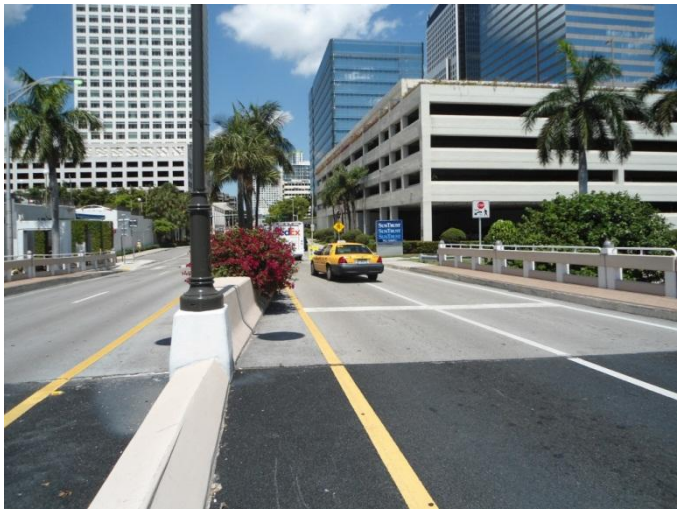
11. NW 4th Street

12. SW 16th Street

12. SW 16th Street

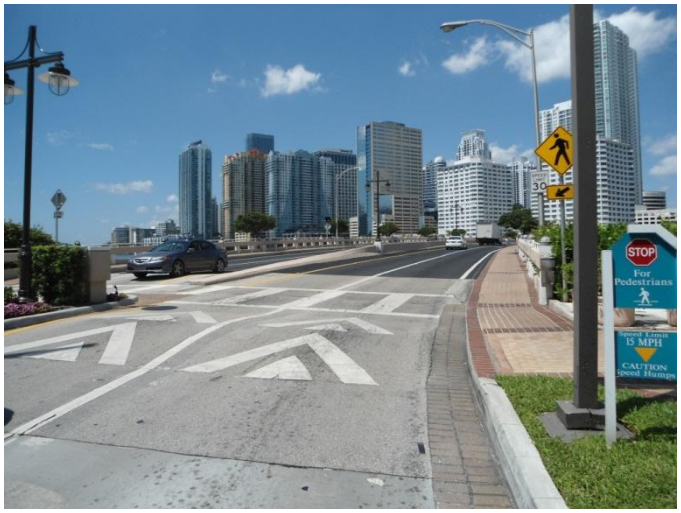
13. Brickell Key Drive



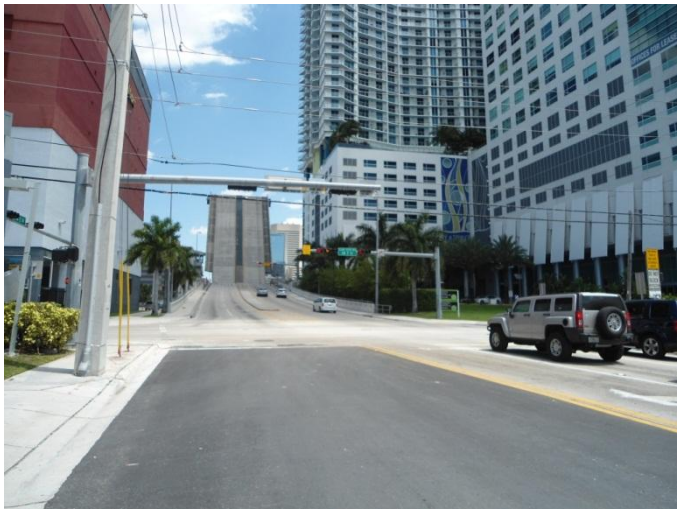


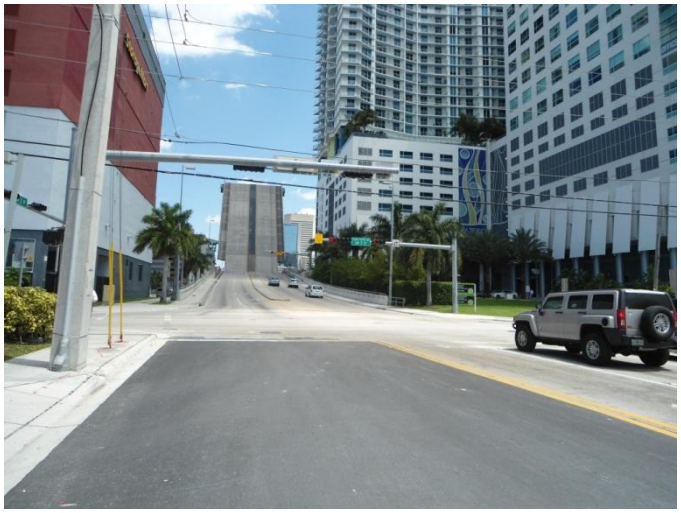
13. Brickell Key Drive

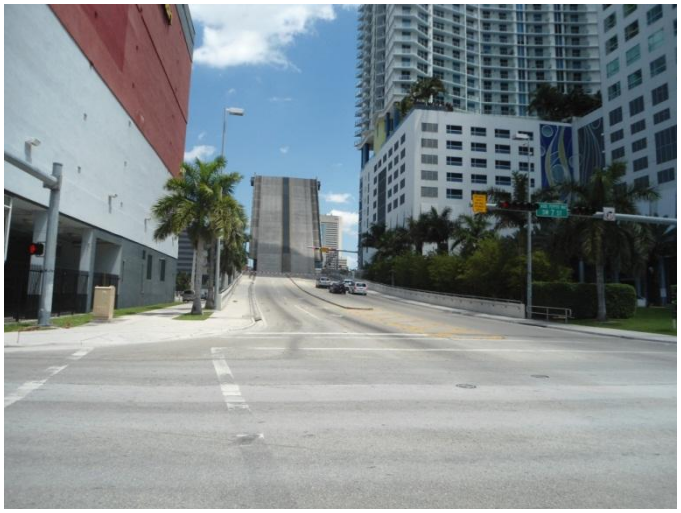
13. Brickell Key Drive

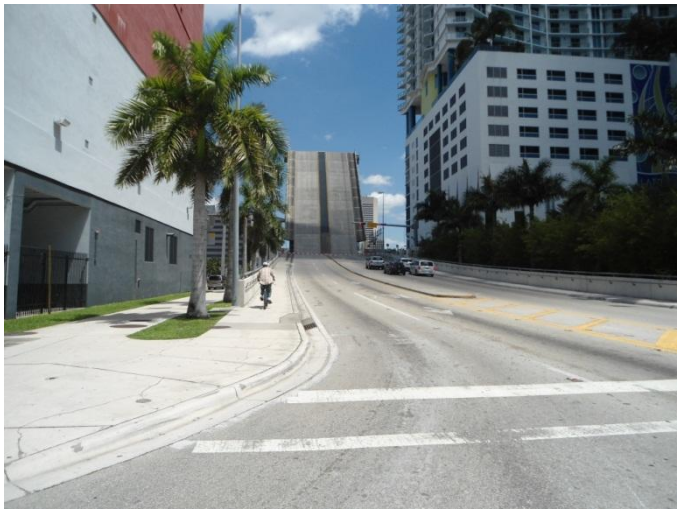


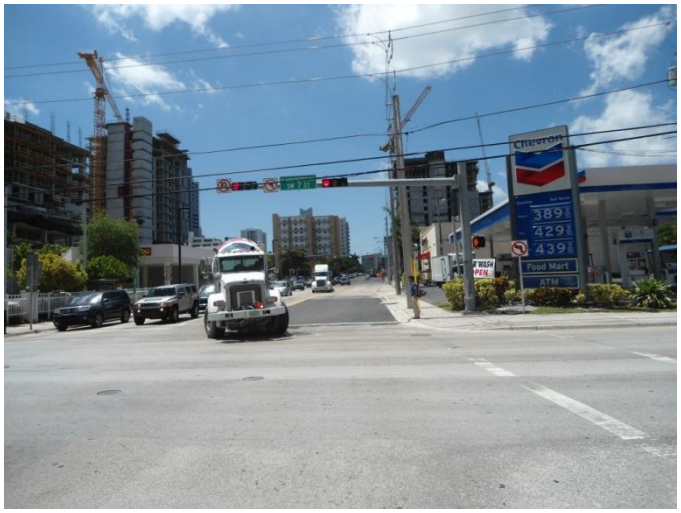
14. Brickell to Health District – NW 2nd Ave Bridge



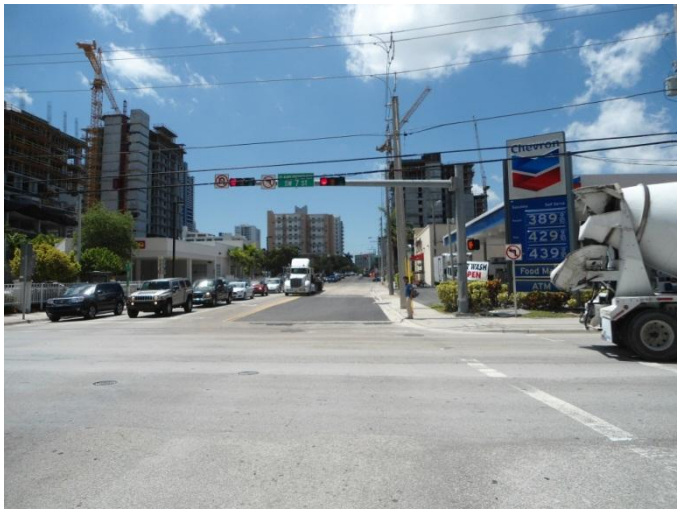


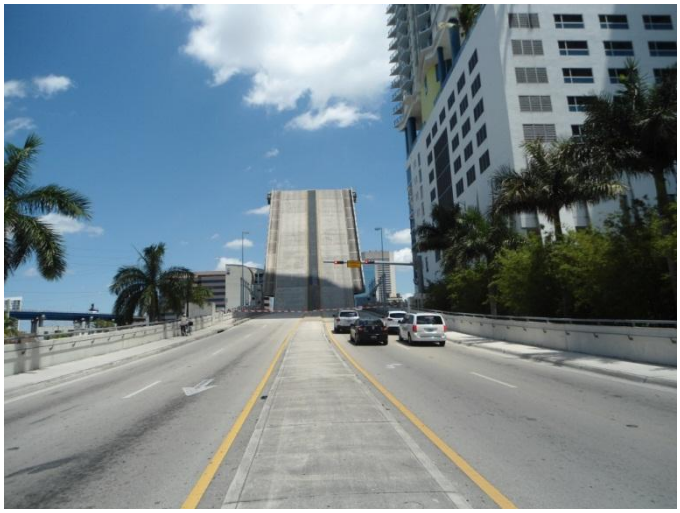




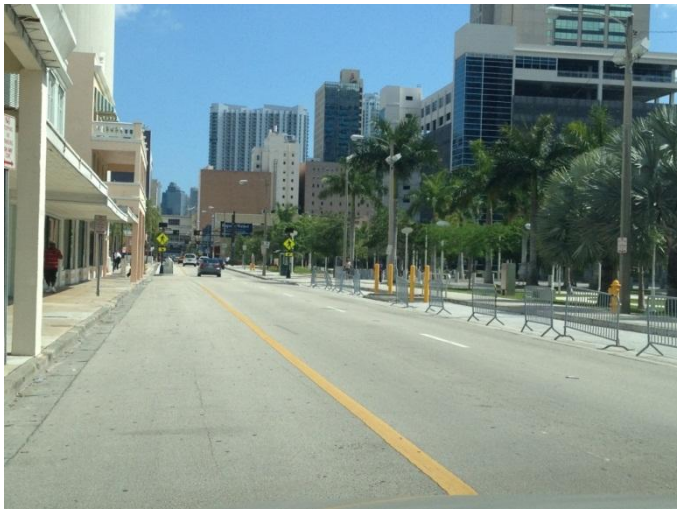


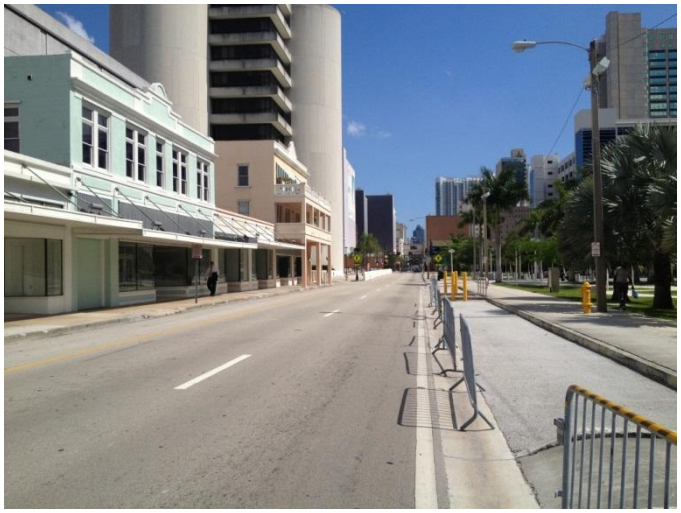
14. Brickell to Health District – NW 2nd Ave Bridge

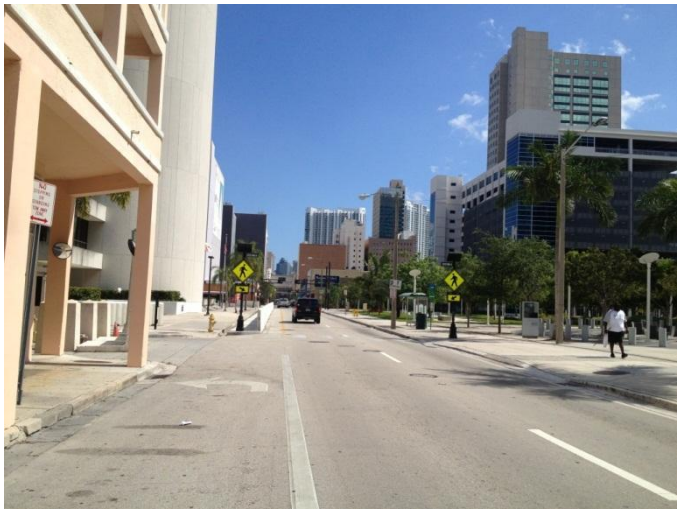


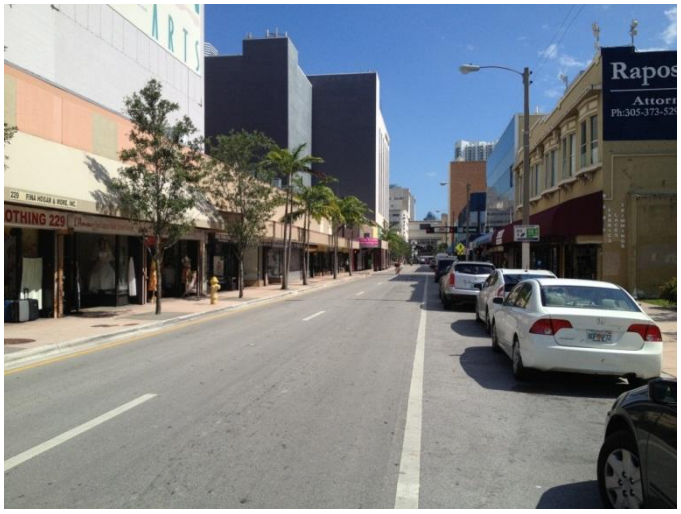


15. N Miami Avenue







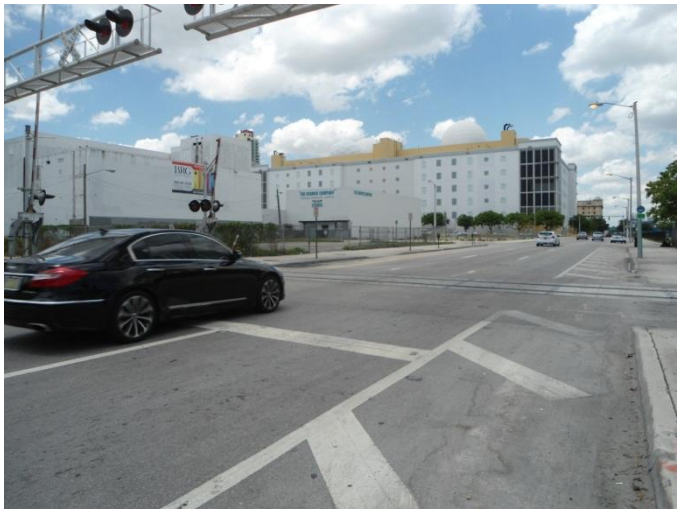


15. N Miami Avenue

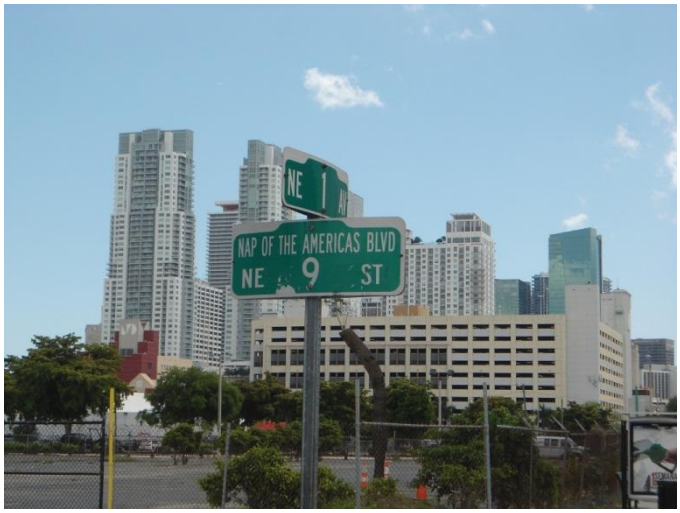
15. NE 1st Avenue

15. NE 1st Avenue

15. NE 1st Avenue

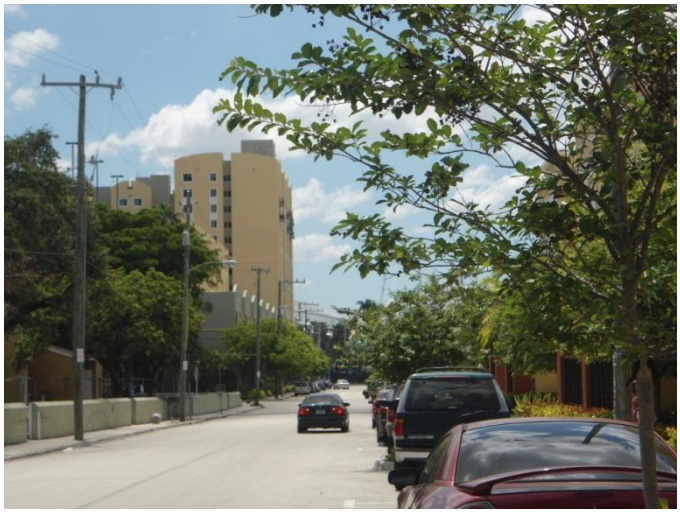


15. NE 1st Avenue



15. N 6th Street

15. N 6th Street



15. N 5th Street

15. N 5th Street

15. N 5th Street

19. SR A1A and 96th Street

20. S Miami Avenue and 26th Road

20. S Miami Avenue and 26th Road

20. S Miami Avenue and 26th Road

20. S Miami Avenue and 26th Road

21. SW 67th Avenue and SW 85th Street

21. SW 67th Avenue and SW 85th Street