

# APPENDIX A

## Miami-Dade County Trail Benefits Study

# MIAMI-DADE COUNTY TRAIL BENEFITS STUDY

## *Ludlam Trail Case Study*



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# ACKNOWLEDGMENTS



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## SPECIAL THANKS

*This project made possible through the dedicated efforts of the Honorable Ileana Ros-Lehtinen, Florida 18th District.*

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# EXECUTIVE *Summary*

## TRAIL BENEFITS STUDY:

### *Ludlam Trail Case Study*

## PURPOSE

Residences of many cities and counties around the country have experienced benefits associated with shared-use paths and linear park spaces. From Portland, Oregon to Pinellas County, Florida, the benefits of trails and open spaces on social, environmental and economic conditions for all residents can be profound.

While many of the benefits of shared-use trails and linear parks are intuitive, most can be difficult to quantify without extensive baseline assessments prior to trail development. Building upon work completed for the Ludlam Trail Design Guidelines and Standards, the Miami-Dade County Trail Benefits Study uses Ludlam Trail as a case study to identify benefits associated with the development of shared-use non-motorized paths and trails which can be transferable to other similar corridors within Miami-Dade County.

The Miami-Dade County Trail Benefits Study will achieve this task by combining key methodologies for quantifying benefits associated with the development of shared-use paths with research completed throughout the United States and specifically for Miami-Dade County. These benefits have been compiled into one document for application throughout the County.



*West Orange Trail near Winter Garden, FL within adjacent residential areas next to and facing out onto the trail*

## METHODOLOGY

Shared-use trails and linear parks can have significant positive impacts to the social, environmental and economic conditions of surrounding neighborhoods. While there is not a standard methodology to documenting these positive impacts, several quantitative techniques exist which have been utilized and documented for this study and include the following:

### 1.1 Existing Conditions Analysis

In order to conduct a comprehensive benefits study, the AECOM team completed a review of various regional planning and other guiding documents to ensure a coordinated effort to analyze stated goals of the community. The team then completed an analysis of physical conditions found near the Ludlam Trail corridor and conducted a demographic overview and baseline economic assessment to provide a comprehensive overview of the corridor.



### 2.1 Scenario Development

Using the results of Section One, the AECOM team identified opportunities and constraints associated with the development of Ludlam Trail. This step included preparing a potential future scenario plan for the overall Ludlam Trail corridor which identifies form, scale, street connectivity, open space, and relationship to adjacent developments which are transferable to similar trail corridors throughout Miami-Dade County. The team then identified three types of changes which may occur from the development of a trail. Each type of change was quantified and the correlating goals as stated by the guiding documents reviewed in Section One were identified.

### 3.1 Benefits Analysis

For the final step, the AECOM team developed a methodology to estimate quantifiable potential social, environmental and economic benefits that could occur from the development of shared-use trails within Miami-Dade County using Ludlam Trail as a case study. The benefits analyzed included, vehicle trips reduction, increase in accessibility, reduction in pollution, affects on property values and job creation.



*Above image: Highlighting improvement to mobility and redevelopment of an underutilized parcel, the Bird Road Industrial Sites offer an example of trail related benefits*



*Above image: Showing a combination of vacant and underutilized lands, the Coral Way and SW 71 Ave. site offers an example of trail connectivity and accessibility leading to healthier and more beneficial lives for area residents*

## KEY FINDINGS

Development of shared-use non-motorized trails offer extensive opportunities to bring significant positive change to communities. The following social, environmental and economic aspects have been identified as having positive improvements through research based on the development of Ludlam Trail as a case study. Many of the benefits documented below are interconnected and lead to positive change throughout the community. An example of this can be shown by the reduction of vehicle trips which leads to positive environmental benefits, such as the reduction of vehicle emissions, and the economic benefit of area residents spending less on fuel. A summary of important findings follows:

### SOCIAL BENEFITS

#### DESTINATION ACCESSIBILITY

The development of Ludlam Trail will enhance overall accessibility to schools, parks, transit stations, and bus stops for as many as 30,550 people living within two (2) miles of Ludlam Trail.

Analysis of existing and post Ludlam Trail destination accessibility has identified the following key findings:

- 261 students will gain access to area schools
- 6,389 residents will gain access to parks
- 186 residents will gain access to bus stops
- 23,900 residents will gain access to transit stations



Commuters at the Dadeland North Metrorail Station adjacent to the Ludlam Trail corridor

#### HEALTH AND WELLNESS

The development of Ludlam Trail will save the community between \$1.68 million and \$2.25 million annually in direct medical costs related to lack of physical exercise while leading to approximately 4,931 to 6,579 area residents becoming new exercisers. Residents within the Ludlam Trail Study Area can expect to lose or keep off between 32,664 and 109,939 pounds of weight annually by burning between 2.19 million and 7.39 million calories (kilocalories) per week while exercising on Ludlam Trail.



Cyclists on the West Orange Trail, Winter Garden, FL

### ENVIRONMENTAL BENEFITS

#### VEHICLE TRIP REDUCTION

Through the development of Ludlam Trail, improvement will be made in mobility for walking and biking to schools, parks, transit stations, and miscellaneous errands leading to reduced vehicle trips (VDTs) within the Ludlam Trail Study Area by the following amounts per category, per year:

- 262,929 trips to transit stations
- 136,080 trips to area schools
- 2,773 trips to parks
- 458,918 trips for miscellaneous errands

A total reduction of approximately 860,700 vehicle trips (VDTs) from enhanced mobility and connectivity may be realized by the community from the development of Ludlam Trail.

#### VEHICLE EMISSIONS

With the reduction of approximately 860,700 vehicle trips the following vehicle emissions will be reduced annually:

- 5,308 fewer lb. of hydrocarbons
- 39,622 fewer lb. of carbon monoxide
- 2,635 fewer lb. of oxides of nitrogen
- 394 fewer tons of carbon dioxide

Demographic research identified that the Ludlam Trail Study Area contains a higher than county average elderly population which is more vulnerable to air pollution due to sensitive respiratory systems. The reduction in vehicle trips translates into an annual savings in fuel consumption of approximately 36,625 gallons or the equivalent of four (4) tanker trucks. Community-wide fuel savings equals approximately \$101,450 a year.

#### TREE CANOPY

New tree canopy plantings associated with Ludlam Trail amenities will provide the surrounding community with over \$170 million in pollution control savings over the life span of a typical urban tree (fifty years). This breaks-down into the following pollution control savings:

- \$32.8 million in fresh oxygen
- \$65.1 million in air pollution control
- \$39.4 million in recycled water
- \$32.8 million in soil erosion control

In addition, the planting of approximately 1,050 new canopy trees associated with Ludlam Trail amenities will create clean oxygen for over 2,100 humans.



Increased tree canopy and shade along the Fred E. Marquis Pinellas Trail, Pinellas Co., FL

#### CARBON SEQUESTRATION

Based on a University of Georgia Warnell School of Forestry and Natural Resource carbon sequestration calculator, Ludlam Trail will provide for the sequestration of between 3,120 and 4,200 tons of carbon within twenty-five years. In addition, the planting of approximately 1,050 canopy trees associated with trail amenities will provide the sequestration of 5,250 tons of carbon over a fifty (50) year life span.

### ECONOMIC BENEFITS

#### PROPERTY VALUES

Based on an analysis of comparable trails from across the country, the presence of Ludlam Trail will increase properties value within the Walkable Area, or properties within 1/2 mile of a proposed public access point, at an annual pace of 0.32% to 0.73% faster than other properties throughout Miami-Dade County. This translates into a total property value increase over a twenty-five (25) period of between \$121 million and \$282 million.

#### PROPERTY TAXES

Based on increased property values within the Ludlam Trail Walkable Area, Miami-Dade County and surround jurisdictions will receive between \$98,000 and \$229,000 annually in additional property tax revenues. When compiled over a twenty-five (25) year period, between \$2.47 million and \$5.74 million in additional property tax revenue will be realized.

#### RETAIL SALES

Retail expenditures related to the Ludlam Trail are expected to be between \$3.19 million and \$8 million annually based on research of trail related expenditures from fourteen comparable suburban and urban trails conducted by Rails-to-Trails Conservancy in 2009. Retail expenditures related to Ludlam Trail will support between 10,500 and 26,500 additional square feet of retail space.



Trail related retail sales, West Orange Trail, Winter Garden, FL

#### RETAIL SALES TAX

Miami-Dade County will receive between \$31,900 and \$80,000 in sales tax from trail related expenditures while the State of Florida will receive between \$191,400 and \$480,000 annually in sales tax.

#### RETAIL EMPLOYMENT

Ludlam Trail related retail expenditures will support between 27 and 68 new jobs within Miami-Dade County.



Trail related employment at a bicycle storage and accessory store. The McDonald Cycle Center, Chicago, Illinois

*Section One:*  
**EXISTING CONDITIONS ANALYSIS**



*“Increased access to open space and scenic resources, and increased participation in outdoor recreation activities have been linked to better physical fitness leading to decreased public health care costs; reduced social service and police/justice costs; as well as reduced self-destructive and anti-social behavior”*

**UNITED STATES DEPARTMENT OF THE INTERIOR: NATIONAL PARK SERVICE,  
Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors, 1995**



Ludlam Trail at Flagler Street



# Section One EXISTING CONDITIONS ANALYSIS

## PILLARS OF A SUSTAINABLE COMMUNITY

In the summer of 2002, the United Nations held a world summit on sustainable development. During this summit world leaders expanded the Brundtland Commission of the United Nations previous definition of sustainable development, which was that development should meet the needs of the present without compromising the ability of future generations to meet their own needs. World leaders drafted, and in 2005 adopted, the three pillars of sustainable development in the Johannesburg Declaration. This declaration created "a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development; economic development, social development and environment protection at local, national, regional and global levels."

These three pillars of sustainable development will be applied throughout this document. Community goals and guiding principles will be grouped into the following three frameworks; social, environmental and economic as shown in the matrix to the right. This framework is also shown in the diagram below which identifies the overlapping characteristic of each pillar. Sustainable development is the intersection of the three pillars, or circles.



## 1.1 RESEARCH OF DOCUMENTS SUMMARY

In order to ensure a coordinated effort to document potential benefits related to the construction of Ludlam Trail, several guiding documents were reviewed by the AECOM team. These guiding documents include governing codes and regional planning studies and include the following:

### 1.1.1 DOCUMENTS REVIEWED

- Miami-Dade County Parks and Open Space System Master Plan (2008)
- City of Miami 21 Code (2009)
- Miami-Dade Transportation Plan (to the year 2030) with 2009 updates
- City of Miami Bicycle Master Plan (2009)
- Miami-Dade County Bike and Pedestrian Plan Update (2009)
- Miami Parks and Public Spaces Master Plan (2008)
- Existing land uses in the Ludlam Trail study area
- Existing zoning in the Ludlam Trail study area
- Miami-Dade County Comprehensive Development Master Plan
- Miami-Dade County Red Fields to Green Fields (2010)

These documents, together with multiple resources pertaining to the best methodologies for estimating benefits of shared-use paths, along with the HUD-DOT-EPA Partnership for Sustainable Communities Livable Principles, serve as the basis for the Miami-Dade County Trail Benefits Study. Following is a summary of key elements from each reviewed document.

### 1.1.2 DOCUMENT SUMMARIES

#### MIAMI-DADE COUNTY PARKS AND OPEN SPACE SYSTEM MASTER PLAN

##### Greenways, Trails and Water Trails Vision

The Miami-Dade County Parks and Open Space System Master Plan is a 50 year unifying vision for a livable, sustainable Miami-Dade County. An integral part of that vision is the development of a seamless system of greenways, trails and water trails. This vision builds upon the corridors described in the North Dade Greenways Master Plan and South Dade Greenway Network Master Plan, and goes further in linking these into a holistic, interconnected system. Its corridors weave through new parks,

#### Summary of Planning Documents Goals

##### Goals:

<b>Social</b>									
Healthy Lifestyle		✓	✓	✓		✓	✓		✓
Public Safety		✓	✓	✓		✓	✓		
Affordable Housing		✓	✓	✓					✓
Education		✓							
Accessibility		✓		✓		✓	✓	✓	✓
Cultural/ Historical Preservation		✓	✓	✓				✓	
<b>Environmental</b>									
Reduced Vehicle Trips/ Miles		✓		✓	✓	✓	✓	✓	✓
Decrease Use of Fossil Fuels				✓					
Clean Air and Water		✓		✓	✓	✓	✓		✓
Enhances Biodiversity		✓		✓				✓	
Reduction in Greenhouse Gases, Climate Changes		✓		✓	✓	✓	✓		✓
<b>Economic</b>									
Improve Mobility/ Connectivity		✓	✓	✓	✓	✓	✓	✓	
Stabilize/ Increase Property Values		✓	✓	✓				✓	✓
Increase Tax Revenue		✓		✓					✓
Redevelopment of Existing Properties		✓	✓	✓					✓
New Jobs		✓		✓					✓

The above matrix indicates the stated goals of each planning document reviewed. This study will identify potential benefits which would occur from the development of shared-use paths and trails which achieve these goals

tie into bike lanes, and act as verdant channels that draw people into natural resource areas. This network of trails and greenways is envisioned as an:

- Interconnected system that provides transportation alternatives and reduces traffic congestion
- Creates new recreational opportunities
- Increases property values
- Protects natural resources
- Encourages tourism and business development
- Strengthens connections to adjacent counties

Ludlam Trail is a vital component of this network, linking open spaces and civic institutions to neighborhoods, while offering a reliable transportation alternative.

# Section One EXISTING CONDITIONS ANALYSIS

## CITY OF MIAMI 21 CODE

The Ludlam Trail corridor is a 6.2 mile non-motorized shared-use trail primarily located in unincorporated Miami-Dade County but its northern 1.1 miles are located in the City of Miami. The City of Miami 21 Code promotes public health, safety, convenience, comfort, amenities, prosperity, and general welfare of the City and aims to provide a wholesome, serviceable, and attractive community, including protection of the environment; conservation of land, energy and natural resources; improved mobility; more efficient use of public funds; greater health benefits of the environment; historic preservation; provision of recreational and open spaces; reduction of sprawl; and improvement of the built environment and human habitat.

## Guiding Principles of Miami 21 Include:

- Growth strategies should encourage infill and redevelopment
- Green Corridors should be encouraged and developed to enhance and connect the urbanized areas
- The City should include a framework of transit, pedestrian, and bicycle systems to provide alternatives to automobiles
- Neighborhoods and urban centers should be compact, pedestrian-oriented and mixed-use
- Neighborhoods and urban centers should be the preferred pattern of development and transect zones emphasizing single use should be the exception
- The ordinary activities of daily living should occur within walking distance of most dwellings, allowing independence to those who do not drive
- Interconnected networks of thoroughfares should be designed to disperse and reduce the length of automobile trips and to encourage walking and bicycling
- Designs of thoroughfares and buildings should incorporate principles of Crime Prevention Through Environmental Design (CPTED)

## Conservation goals:

- Preserving neighborhoods, historical resources and the natural environment
- Improving the relationship between low-density residential neighborhoods and adjacent commercial corridors with appropriate transitions of density and height following the theory of the Transect
- Increasing access to the natural environment through the development of north-south greenways and new parks

- Conserving energy and reducing carbon dioxide emissions through improved thoroughfare connectedness to encourage walkability, bicycling and transit use
- Increasing tree canopy

## Development goals:

- Maintaining future growth capacity of the city core with a transit-oriented, pedestrian-friendly focus
- Rebuilding the City's commercial corridors to function as mixed-use, transit-oriented, walkable centers for adjacent residential neighborhoods
- A pedestrian-friendly public realm of the highest ambient quality

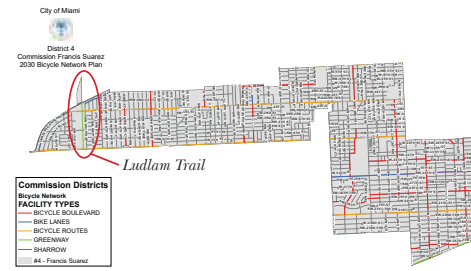
## MIAMI-DADE TRANSPORTATION PLAN (TO THE YEAR 2030)

The purpose of the Miami-Dade Transportation 2030 Plan was to develop a plan for a multimodal transportation system that complied with state and federal requirements, optimized the movement of people and goods, and met the goals and objectives adopted by the Miami-Dade MPO Board. Most important for the development of trails and greenways are the following goals:

- Improve transportation systems and travel
- Support economic vitality
- Enhance social benefits
- Mitigate environmental and energy impacts
- Integrate transportation with land use and development considerations
- Optimize sound investment strategies

## CITY OF MIAMI BICYCLE MASTER PLAN

The Miami Bicycle Master Plan was developed with the guidance of previous bicycle study and is intended to work in collaboration with the Miami 21 Zoning Ordinance and the Complete Street ordinance. The study is a comprehensive review of existing conditions in the City of Miami and engaged the public to establish the city-wide bikeway network plan, bicycle parking plan, safety and awareness actions, and evaluation tools to measure future performance of the network and suggest improvements to the existing bicycle infrastructure. The study serves as a guide for the development of the bikeway network over a twenty year period and identifies Ludlam Trail specifically as a shared-use path/greenway.



City of Miami Bicycle Master Plan: Commission District 4 shows the Ludlam Trail as one of two Greenways within Commission District 4 with the M-Path located along U.S. 1 (South Dixie Hwy.) as the other.

## MIAMI-DADE COUNTY BIKE AND PEDESTRIAN PLAN UPDATE

The Miami-Dade County Bike and Pedestrian Plan Update has a stated goal to making the County a model bicycle and pedestrian friendly region where cycling and pedestrian activity is safe, attractive, easy, and a convenient mode of transportation and recreation for people of all ages and abilities. The development of trails and greenways such as Ludlam Trail achieves this goal through safe and accessible design as a non-motorized shared-use, off-road bicycle facility. Through the vision of the Miami-Dade County Bike and Pedestrian Plan Update, Ludlam Trail would enhance the environment and improve public health and quality of life, all the while making Miami-Dade County an attractive, healthy and safe place to live, work and play.

The Miami-Dade County Bike and Pedestrian Plan Update has identified a very high need for non-motorized shared-use, off-road bicycle facilities in the Ludlam Trail corridor area. The development of Ludlam Trail would allow for the connection to six additional trails and greenways, three of which share either a very high need or high need for non-motorized shared-use, off-road bicycle facility development.

## MIAMI PARKS AND PUBLIC SPACES MASTER PLAN

The purpose of the Miami Parks and Public Space Master Plan was to create a connected system of parks and public spaces to meet the needs of the City's diverse citizenry, with more ways to experience water, more places to play, greener and safer routes

## SUMMARY OF PARKS AND OPEN SPACES MASTER PLANS

The Miami-Dade County Parks and Open Space System Master Plan and Miami Parks and Public Space Masterplan are guiding documents which have identified goals of providing recreation and transportation mode options for area residents. The Miami-Dade County Parks and Open Spaces System Master Plan is the most comprehensive with stated goals of increasing property values and protecting natural resources. All of these stated goals can be achieved through the construction of the Ludlam Trail. This report will quantify how much of an impact the development of Ludlam Trail will have on the surrounding community.



# Section One EXISTING CONDITIONS ANALYSIS

## SUMMARY BICYCLE AND PEDESTRIAN MASTER PLANS

Bicycle and pedestrian plans have been prepared for areas which include the entire length of the Ludlam Trail corridor. Two plans have direct implications on the planning and design of Ludlam Trail; the Miami-Dade County Bike and Pedestrian Plan Update; and the City of Miami Bicycle Master Plan. Both plans identify Ludlam Trail as future greenway of an interconnected network of trails and greenways.

## SUMMARY EXISTING AND FUTURE LAND USES

Land use around the Ludlam Trail corridor is not identified primarily as single family or estate residential with pockets of commercial and industrial land uses located at or near major arterial road crossings. The development of Ludlam Trail would promote connections of neighborhoods and potential redevelopment of select commercial or industrial areas over time by offering safe connections to the trail.

for pedestrians and bicyclists. The Master Plan states that every resident should be able to walk safely and comfortably to a park. Ludlam Trail would provide opportunities for safely biking or walking to area parks, and help reach the goal of better connectivity and more opportunities for play and recreation.

### EXISTING LAND USES

The Ludlam Trail corridor passes through the City of Miami and is adjacent to the City of South Miami, however, most of the corridor lays within Miami-Dade County. Within 1/2 mile of the trail primary land-uses include single family detached and attached residential, commercial/shopping centers, institutional, light industrial/warehouse. North of SW 48th St. the corridor is surrounded by approximately fifty (50%) percent single family residential and fifty (50%) percent non-residential land uses, such as warehouse or commercial. South of SW 48th St., the corridor is almost exclusively surrounded by single family and estate residential land uses. In all cases, adjacent non-residential land uses such as commercial and warehouse/light industrial, are located in clusters of parcels near major thoroughfares.

In five (5) locations, institutional land use is immediately adjacent to the corridor and includes the Miami-Dade County Public Schools Maintenance facility, church facilities, Bird Road Post Office, South Miami Senior High School and the South Miami Elementary and Middle School campus. Analysis of land use can be found in Section 1.2

### EXISTING ZONING

The existing zoning surrounding the Ludlam Trail corridor is primarily single family residential and estate residential. Several jurisdictional zoning regulations existing immediately adjacent to or within 1/2 mile of the corridor and include Miami-Dade County, City of Miami, City of West Miami, City of South Miami and City of Pinecrest.

Commercial and industrial zoning is located in three main areas along the corridor: at Dadeland Mall; SW 40th Street (Bird Road); and SW 24th Street (Coral Way), and include areas of shopping, an art district, and vacant properties.

Through the development of the Ludlam Trail, many of the single family residential areas would gain access to the trail via neighborhood connections while medium to high density

residential areas and commercial areas could redevelop over time with an emphasis towards providing connections to Ludlam Trail. Additional discussion of zoning can be found in Section 1.2.

### MIAMI-DADE COUNTY COMPREHENSIVE DEVELOPMENT MASTER PLAN

The Miami-Dade County Comprehensive Development Master Plan strongly correlates with the existing zoning for the Ludlam Trail corridor. There are a few areas of notable exception such as the corner of SW 67th Avenue (Ludlam Road) and SW 40th St. (Bird Road). This area is currently zoned for commercial; however, the Comprehensive Development Master Plan identifies a preferred change of land use to medium density residential. With this exception, most areas along the corridor are not identified for change in land use. This must be taken into consideration when evaluating whether the construction of the Ludlam Trail could have an impact on existing properties.

### MIAMI-DADE RED FIELDS TO GREEN FIELDS

The Miami-Dade Red Fields to Green Fields study identifies strategic actions to 'jump start' economic development, recalibrate local property values and create walkable neighborhoods to support public and environmental health. Transit-oriented connectors such as Ludlam Trail are a part of this vision.

Ludlam Trail is identified as a North/South Transit-Oriented Connector due to its potential direct connections to two Metrorail stations and business/commercial centers. Approximately 750 acres of commercial real estate has been identified along these transit-oriented corridors connectors with 130 acres available for purchase and development as a contiguous string of parks and connectors to provide residents and visitors with recreation opportunities near work and home.

### OTHER SOURCES OF INFORMATION:

#### HUD-DOT-EPA PARTNERSHIP FOR SUSTAINABLE COMMUNITIES

In addition to the planning documents specific to Miami-Dade County, the project team reviewed the U.S. Department of Housing and Urban Development, U.S. Department of Transportation and U.S. Environmental Protection Agency's Partnership for Sustainable Communities Livability Principles for a

comprehensive of smart growth and sustainable community goals. Six principles are highlighted by this initiative, most overlapping existing stated goals of Miami-Dade County planning documents. These principles include:

- Provide more transportation choices.
- Promote equitable, affordable housing
- Enhance economic competitiveness
- Support existing communities
- Coordinate and leverage federal policies and investment
- Value communities and neighborhoods

Several principles will be covered by overlapping community-wide goals such as transportation choices and value communities with better accessibility and health, and economic competitiveness with economic growth, however others are harder to quantify with estimates. These, more difficult principles, such as promoting equitable, affordable housing and coordinate and leverage federal policies and investment touch on areas which trails and linear parks many have little or no impact other than better mobility and positive impacts on economic and environmental measures of a sustainable community.

A goal of this document is to align funding with federal, state and local policies to remove barriers to collaboration, leverage funding, and increase the accountability and effectiveness of all levels of government to plan for future growth and a more livable community.

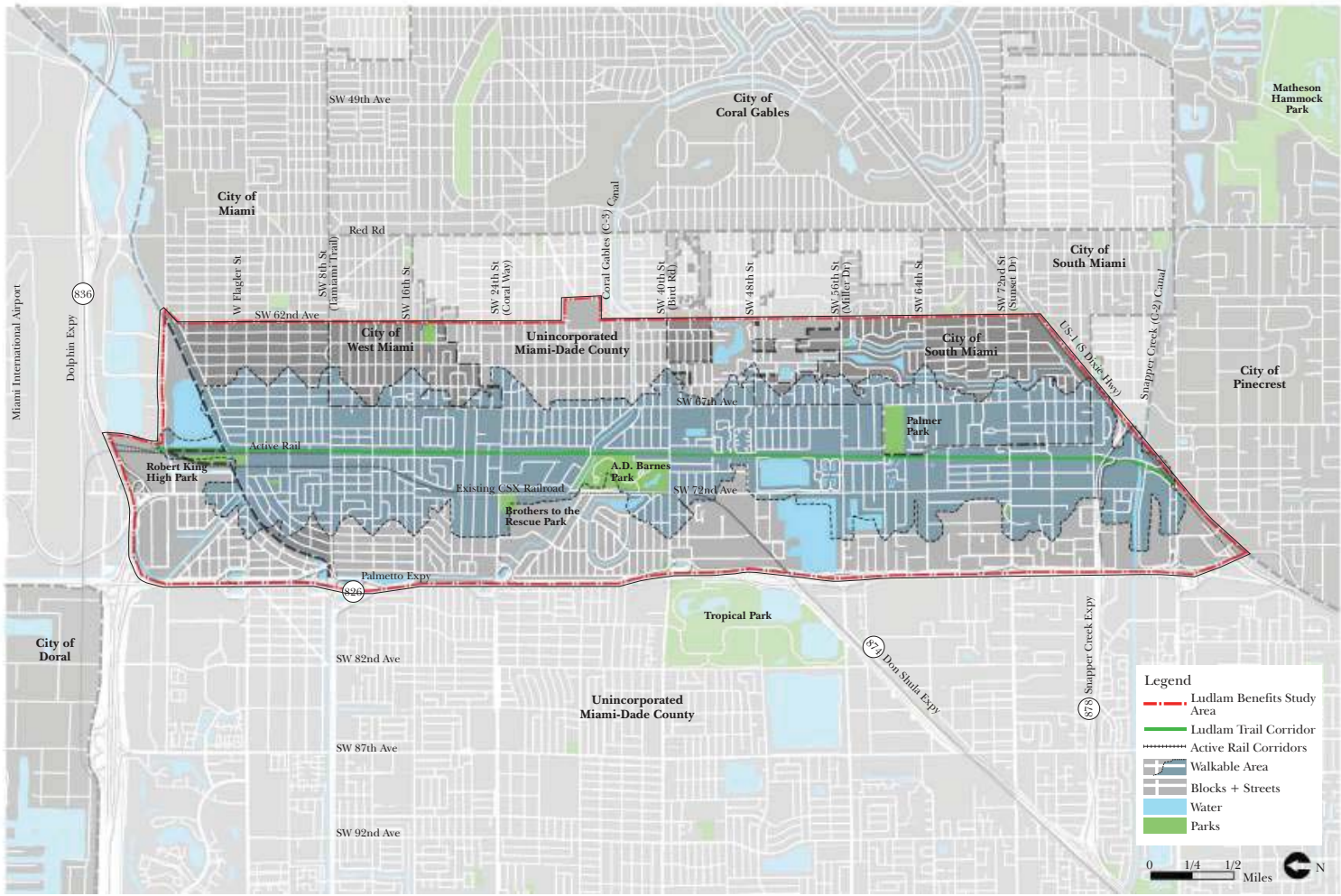
### SUMMARY OF FINDINGS

The development of Ludlam Trail would be consistent with the goals of both County and City bikeways and trail plans. Not only would the trail represent a step forward in building a County-wide bicycle and pedestrian network, it would be a major step to realizing many of the County's and City's goals of creating a more socially, environmentally, and economically sustainable community.



# Section One EXISTING CONDITIONS ANALYSIS

## 1.2 STUDY BOUNDARIES MAP



## STUDY BOUNDARIES MAP

To understand the existing conditions surrounding Ludlam Trail, two areas were defined: the Study Area and the Walkable Area. **The Ludlam Benefits Study Area is a non-jurisdictional area with boundaries generally defined by primary roadways which form barriers to safe pedestrian routes to the Ludlam Trail corridor.** These barriers are generally located within one (1) mile of the corridor and include the Palmetto Expressway (S.R. 826), South Dixie Highway (U.S. 1), SW 62nd Ave., Dolphin Expressway (S.R. 836), and NW 7th Ave. Most of these barriers are one mile or a twenty minute walk from the Ludlam Trail.

The Study Area boundary will be used in this analysis to provide a comprehensive view into the surrounding community. Demographic information for this area will be used throughout the document to provide baseline information and estimates.

The second geographical area used for this study is the Walkable Area. This area is identified by the blue shading on the map to the left. **The Walkable Area is defined as the area within 1/2 mile or ten (10) minutes walking or biking access of a proposed public access point to the trail, either a bisecting roadway or street end which abuts the Ludlam Trail corridor.** The ten (10) minutes walking distance is based on a 1995 study by the Federal Transit Administration which identified research completed by Richard Untermyer. Untermyer's research showed that Americans on average will walk 2,300 feet (roughly 1/2 miles) or ten (10) minutes to a destination. After a distance greater than 1/2 mile, the willingness to walk drops below ten percent. This amount varies based on accessibility to transit with more transit oriented areas experiencing a greater willingness by residents to walk longer distances.

**The Walkable Area will be used in identifying property assessment information and in the quantification of trail benefits.** The following existing conditions analysis section will use a series of maps which illustrate existing physical conditions of the Study Area and Walkable Area.



## Section One **EXISTING CONDITIONS ANALYSIS**

### 1.3 PHYSICAL CONDITIONS

The existing conditions analysis for the Ludlam Trail Case Study is a thorough understanding of the Study Area's current land use patterns, transportation patterns, built environment, parks and recreation venues, and cultural venues. A complete physical conditions summary is located on page 19.

### 1.3.1 EXISTING LAND USE

The existing land use pattern represents the actual use and development on the ground today. Key observations include:

- A majority of land use within the study area is single-family (80+%)
- There are four main east-west corridors that have a high concentration of non-residential land uses. These corridors are:
  - US Highway 1 (South Dixie Hwy.)
  - SW 40th St. (Bird Road)
  - SW 24th St. (Coral Way)
  - SW 8th St. (Tamiami Trail)
- Active industrial land uses are focused around the CSX corridor along SW 40th St. (Bird Rd.) and SW 72nd Ave.
- SW 67th Ave. between SW 8th St. (Tamiami Trail) and SW 24th St. (Coral Way) has a concentration of commercial and multi-family uses.

### 1.3.2 ZONING

The proposed Ludlam Trail includes two municipalities and zoning districts; the City of Miami and Miami-Dade County.










### Key Observations

- A majority of properties are zoned residential
- Zoning north of SW 40th St. (Bird Rd.) is generally more intense
- There are two main areas identified as industrial
  - SW 24th St. (Coral Way) at SW 72nd Ave.
  - SW 40th St. (Bird Rd.) at SW 72nd Ave.

### 1.3.1 STUDY AREA LAND USE MAP



Legend

-  Ludlam Benefits Study Area
  Streets + Highways
  Single Family Residential
  Commercial
  Industrial
-  Ludlam Trail Corridor
  Water
  Mobile Home
  Office
  Communications + Utilities
-  Active Rail Corridors
  Parks
  Multi-Family Residential
  Institutional

### 1.3.2 STUDY AREA ZONING MAP



### Legend

- |                            |                    |       |      |                          |                             |                          |                           |        |
|----------------------------|--------------------|-------|------|--------------------------|-----------------------------|--------------------------|---------------------------|--------|
| <b>Legend</b>              |                    |       |      | <b>Commercial Zoning</b> | <b>Institutional Zoning</b> | <b>Industrial Zoning</b> | <b>Residential Zoning</b> |        |
| Ludlam Benefits Study Area | Streets + Highways | BU-1A | C-2  | EU-M                     | IU-1                        | IU-C                     | R-1/R-2                   | RU-1   |
| Ludlam Trail Corridor      | Water              | BU-2  | DKUC | EU-S                     | IU-2                        | MU-5                     | R-3                       | RU-3/B |
| Active Rail Corridors      | AU                 | C-1   | EU-1 | GU/H/PL                  | IU-3                        | PR                       | RS-3                      |        |

0 1/4 1/2 Miles

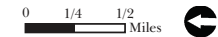
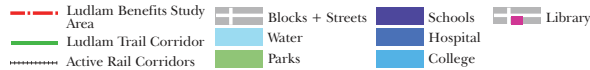


# Section One EXISTING CONDITIONS ANALYSIS

## 1.3.3 PARKS AND INSTITUTIONAL SITES MAP



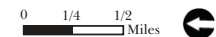
### Legend



## 1.3.4 COMMERCIAL PROPERTIES MAP



### Legend



## 1.3.3 PARKS AND INSTITUTIONAL SITES

Ludlam Trail has an opportunity to provide a critical link between many institutional land uses and existing parks. There are a number of institutional land uses adjacent to the trail including two elementary schools and two regional serving parks. Improving access to these uses with the proposed trail could reduce vehicle trips along the major arterials.

## 1.3.4 COMMERCIAL PROPERTIES

Commercial properties are primarily located along arterial roads which bisect the corridor. Of particular significance are the commercial properties located along West Flagler Street, SW 8th St. (Tamiami Trail), SW 24th St. (Coral Way), SW 40th St. (Bird Road), and around the Dadeland Mall. Commercial properties adjacent the Ludlam Trail corridor have the potential to see significant gains in retail sales and or property values due the presence of traffic associated with trail users.





## Section One EXISTING CONDITIONS ANALYSIS

### 1.3.5 EXISTING STREET NETWORK

The existing street network diagram to the right illustrates the public roadway system for the Study Area. Arterials/major collectors are spaced approximately every mile and connect to the Palmetto Expressway. In general, the arterials/major collectors are the only roadways that cross the Ludlam Trail corridor. The remaining street pattern is composed of locally serving two-lane streets that primarily access residential neighborhoods.

Historically the Ludlam rail corridor was a barrier to area connectivity and caused traffic to concentrate on the arterial roadways. The best, least-congested roadway networks are those where dead ends and cul-de-sacs are minimal, and every street contributes to the area's connectivity. By measuring the streets that actually help move traffic, it can provide insight into the system's strengths.

### 1.3.6 BLOCK PATTERN AND EFFECTIVE STREET NETWORK

The overall block pattern in the Study Area varies and includes a typical first tier suburban residential pattern north of SW 40th Street (Bird Road) and larger industrial blocks along the existing CSX railroad freight corridor. Consistent with its historic land use as a rail line, the Ludlam Trail corridor is lined with a super-block pattern.

Superblocks can be defined as blocks with an edge length greater than 1,000 feet or area greater than 20 acres. Larger block sizes favor larger building footprints on contiguous portions of land; however, this is done at the expense of disrupted vehicular traffic flow and more cumbersome pedestrian and bicycle activity which is shown on the map to the right. Superblocks (shown in red) form barriers to accessing the Ludlam Trail corridor. These blocks generally consist of industrial, institutional or open space and have the ability over time to contribute to the overall connectivity of the area by increasing access to the trail and extending benefits to properties not currently associated with the trail.

### 1.3.5 EXISTING STREET NETWORK MAP



### 1.3.6 BLOCK PATTERNS AND EFFECTIVE STREET NETWORK MAP

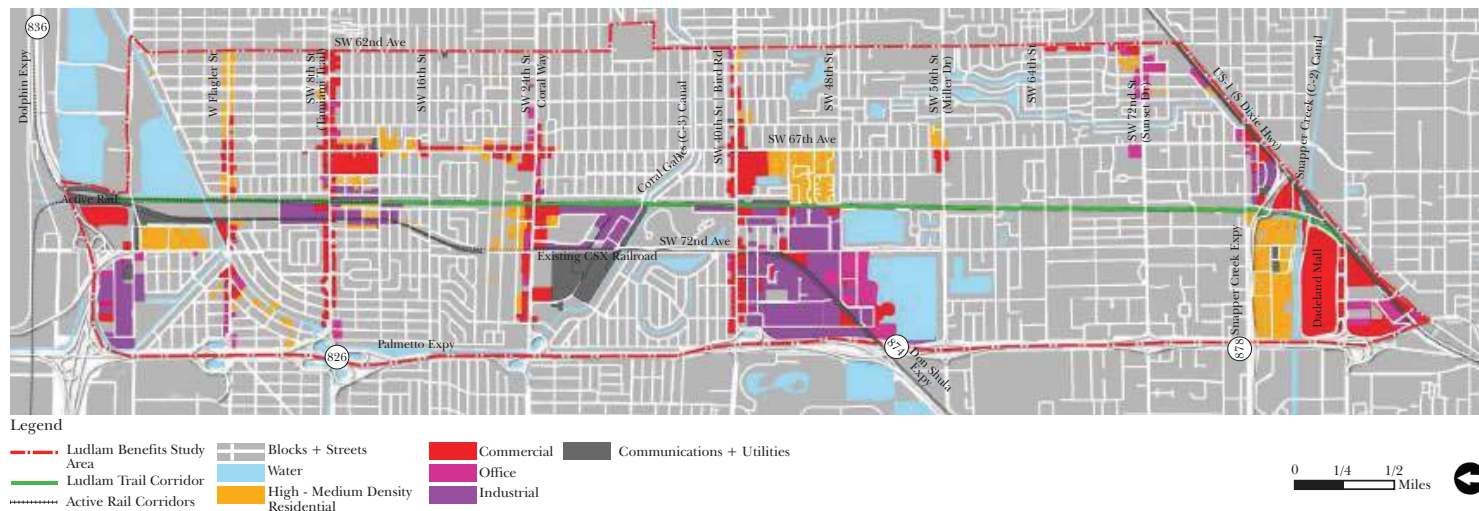


# Section One EXISTING CONDITIONS ANALYSIS

## 1.3.7 SINGLE FAMILY RESIDENTIAL AND INSTITUTIONAL AREAS MAP



## 1.3.8 HIGH DENSITY RESIDENTIAL AND COMMERCIAL AREAS MAP



## 1.3.7 SINGLE FAMILY RESIDENTIAL AND INSTITUTIONAL AREAS

Land uses classified as single family residential, institutional or open space should be preserved and enhanced through the development of the Ludlum Trail. Several pockets of single-family residential uses, particularly those highlighted to the left between SW 71st and 72nd Ave., are isolated within non-residential land uses. These single family residential parcels are currently surrounded by conflicting land uses but connections provided by the proposed Ludlum Trail would give these residents improved access to schools, parks and employment.

## 1.3.8 HIGH DENSITY RESIDENTIAL AND COMMERCIAL AREAS

A number of high density residential and commercial areas form a unique system along the Ludlum Trail corridor, characterized mostly by narrow bands running perpendicular to the corridor along arterial/major collector streets. Notable exceptions are clusters of these types of land uses found at SW 24th St. (Coral Way), SW 40th St. (Bird Road), and between SW 80th St. and the Dadeland Mall. Many of these areas form super blocks which do not currently share connections to the Ludlum Trail and have limited potential for future connections without the establishment of an interconnected street network.





# Section One EXISTING CONDITIONS ANALYSIS

## 1.3.9 VACANT AND UNDERUTILIZED LANDS

There are several large parcels along the Ludlam Trail corridor that are classified as vacant or are underutilized. **Underutilized parcels are classified as non-residential parcels where the improved value of land is less than 40% of the total value of the property.** A majority of the properties identified as either vacant or underutilized are industrial or commercial.

- There are approximately 200 acres vacant parcels within 1/2 mile of the Ludlam Trail corridor
- There are approximately 350 acres of underutilized parcels within 1/2 mile of the Ludlam Trail corridor
- The Dadeland Mall is currently the largest single group of properties which are underutilized due to its current assessment of \$0 in improvements to the land value
- The intersection of SW 24th Street (Coral Way) and SW 72nd Avenue and the intersection of West Flagler Street and SW 69th Avenue both have a high concentration of vacant and underutilized land

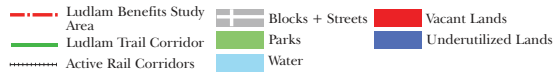
## 1.3.10 AREAS OF POTENTIAL CHANGE

Areas of potential change are areas which are either vacant, underutilized, commercial or industrial land uses, do not contain an interconnected street network, or are all the above. The parcels highlighted on the map to the right are those which have a potential to change either through development or redevelopment with an emphasis on providing access to the Ludlam Trail. Large parcels may not experience change solely due the presence of the trail, however, each site has the ability to provide an interconnected network of streets and pedestrian circulation, open space, affordable housing and employment opportunities. These areas of potential change will be addressed in greater detail in Section Two of this report.

### 1.3.9 VACANT AND UNDERUTILIZED LANDS



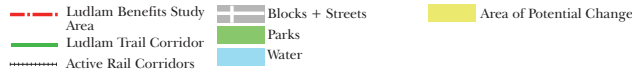
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### 1.3.10 AREAS OF POTENTIAL CHANGE



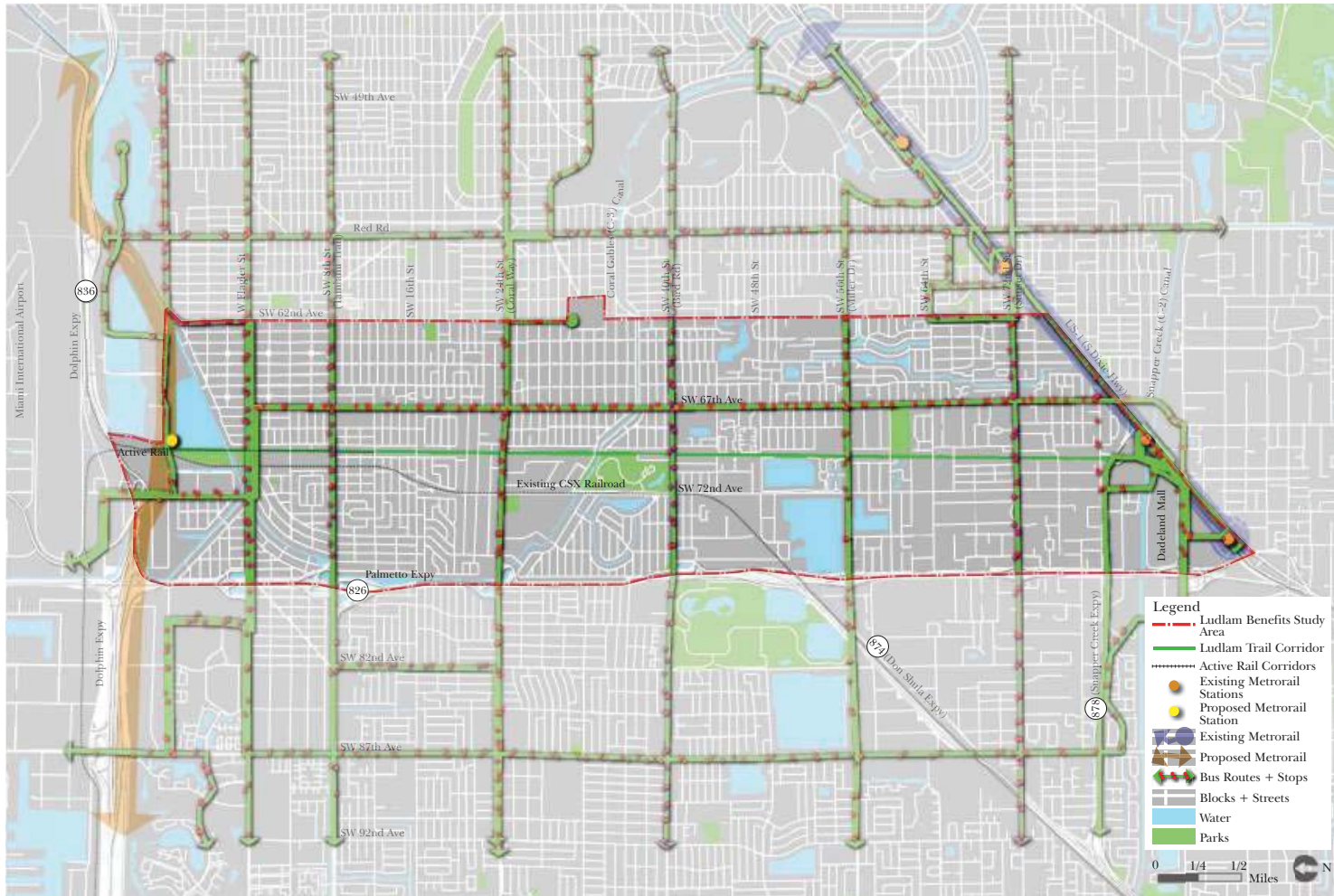
Legend





# Section One EXISTING CONDITIONS ANALYSIS

## 1.3.11 TRANSIT SYSTEM MAP



## 1.3.11 TRANSIT NETWORK

The map to the left highlights the existing and proposed transit network within the Study Area. This includes all mapped Miami-Dade County Transit bus routes and bus stop locations, along with all existing and proposed Metrorail routes and stations.

A total of ten (10) bus routes, denoted by colored arrows, bisect the Study Area east to west while only one route, along SW 67th Ave. (Ludlum Road) provides north to south service. The Dadeland South Bus Station is the terminal for most busses serving Southwest Miami-Dade County via the Busway, while the Dadeland North Bus Station is the terminal for several routes serving western Miami-Dade County. The two Metrorail routes, either existing or proposed, are located at the extreme northern and southern areas of the Ludlum Trail corridor with the trail providing direct access to both routes. Ludlum Trail will be a critical route choice for residents traveling either north or south within the Study Area.

A person's decision regarding whether to utilize transit or some other single occupant vehicle mode of transportation to work is usually driven by three primary factors:

- **Convenience** – Is the transit option accessible and reliable? Most people are willing to walk 5 to 10 minutes to reliable and frequent transit service, as discussed on page nine (9). Anything that can be done to expand the number of people within walking parameters (or, sometimes, within biking distance) will increase ridership.
- **Travel Time** – More time competitive transit modes (rail, rapid bus, etc.) tend to be more attractive. For bus service, the frequency and reliability of service at a given stop is a significant factor.
- **Cost** – The price of an automobile, motor fuel and parking is a major element in people's decision making. Those who cannot afford an automobile are, of course, largely transit and walk dependent. Among those who have an automobile, transit ridership rises significantly as motor fuel costs and parking costs rise.

Ludlum Trail can improve the convenience to and travel time from mass transit, therefore increasing the likelihood that a person will decide to use mass transit.

## Section One EXISTING CONDITIONS ANALYSIS

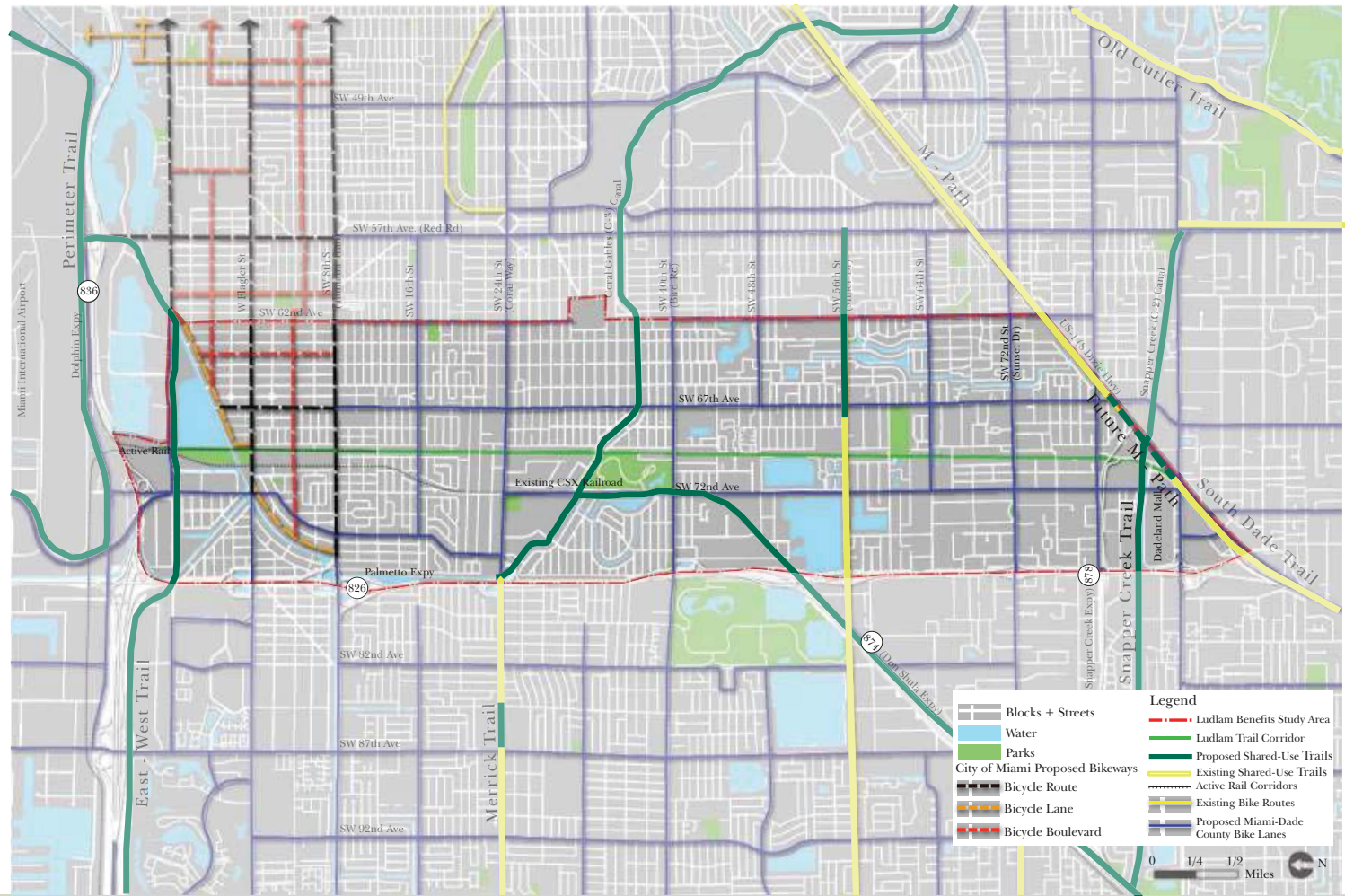
### 1.3.12 BIKEWAY SYSTEM

The map to the right highlights the existing and proposed bikeway systems within the Ludlam Trail Study Area. This includes all existing and proposed on- and off-street shared-use bicycle routes per the Miami-Dade County Bike and Pedestrian Plan Update and the City of Miami Bicycle Master Plan. This network of existing and proposed bicycle routes will be used in later sections of this report to determine accessibility and service areas.

Both master plans identify Ludlam Trail as a greenway or non-motorized shared-use bicycle facility. The Miami Bicycle Master Plan includes the development of bicycle boulevards and on-street bicycle lanes while the Miami-Dade County Bike and Pedestrian Plan Update consists primarily of on-street bicycle lanes. In both cases, Ludlam Trail would be the only north/south bicycle route between SW 57th Ave. (Red Road) and SW 97th Ave.

This bikeway system data will be used in later sections of this study to identify the benefits to area cyclists from the development of Ludlam Trail.

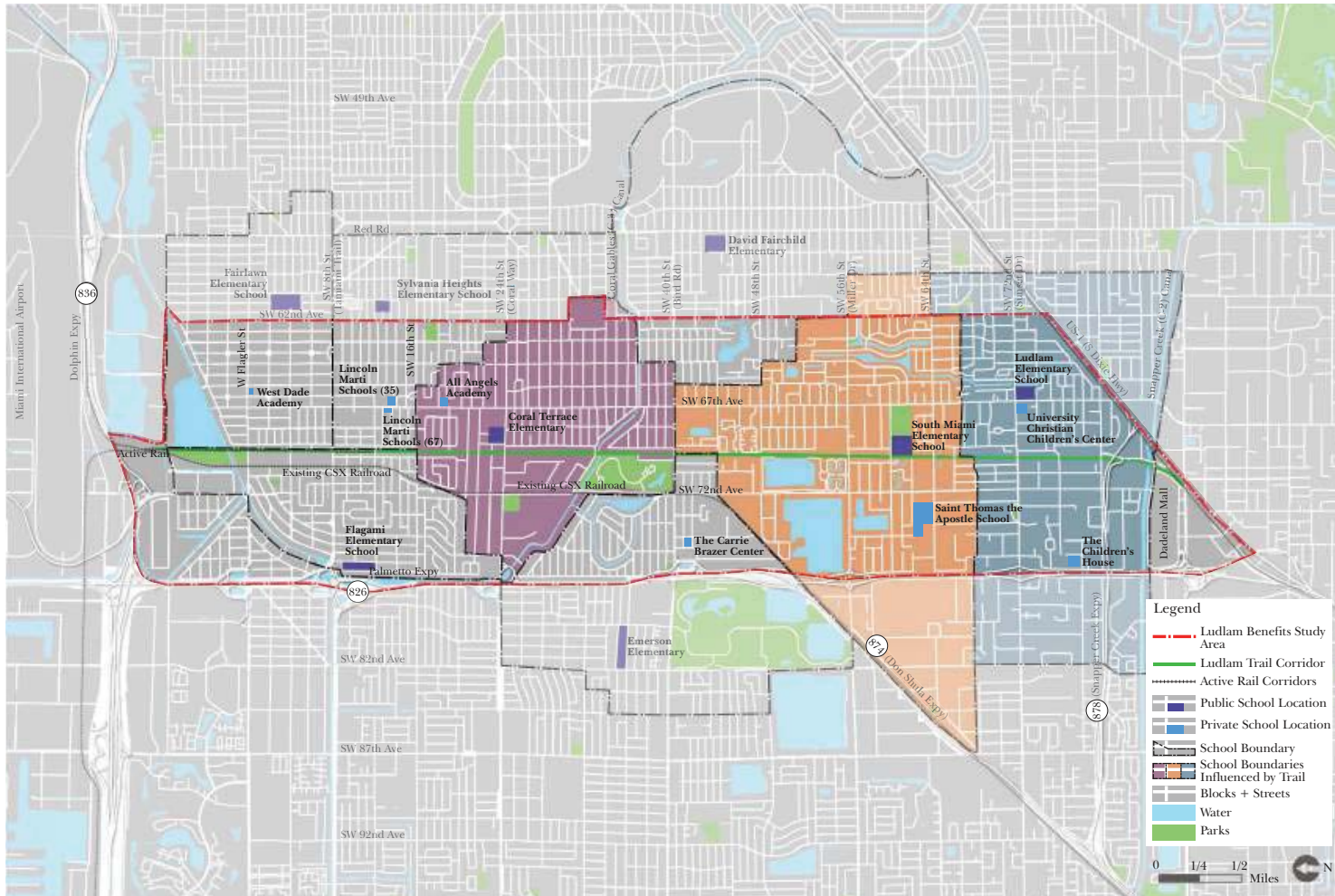
### 1.3.12 BIKEWAY SYSTEM





## Section One EXISTING CONDITIONS ANALYSIS

### 1.3.13 ELEMENTARY SCHOOLS + ATTENDANCE AREAS



### 1.3.13 ELEMENTARY SCHOOL BOUNDARIES

Three schools; Coral Terrace Elementary School; South Miami Elementary School; and Ludlam Elementary School all have attendance areas that span across Ludlam Trail. Attendance areas which span the Ludlam Trail corridor require students to cross the corridor using the existing street network highlighted in map 1.3.5.

The development of Ludlam Trail could provide a safe route to school corridor for all three elementary schools, see map to the left. Additionally, the presence of Ludlam Trail as a safe route to school would allow existing schools to move boundaries due to attendance shifts. The Ludlam Trail Design Guidelines and Standards Study identifies the need for increased safety and traffic techniques to encourage the use of the trail as a route to school. The attendance areas shown on this map will be used in later sections of the study to identify the number of children who will benefit from the Ludlam Trail as a safe alternative transportation route to school.

Private schools are shown on the following page, however, most private attendance boundaries are not defined using the same methods as Miami-Dade County Public Schools. In addition, individual private school enrollments are not significant within the Ludlam Study Area. In all cases, private schools should be identified as all students stand to benefit from the presence of a trail.

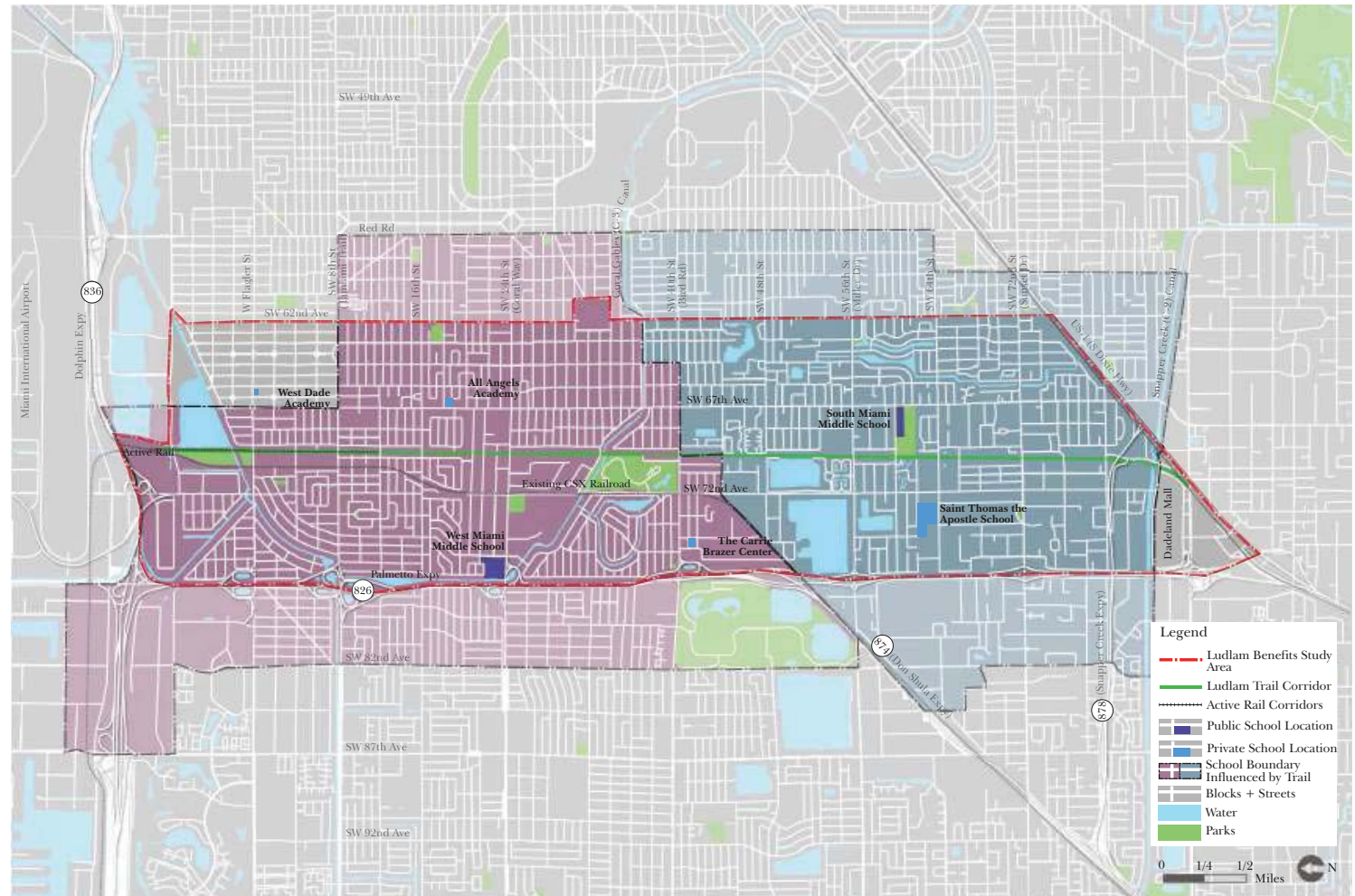


## Section One EXISTING CONDITIONS ANALYSIS

### 1.3.14 MIDDLE SCHOOL BOUNDARIES

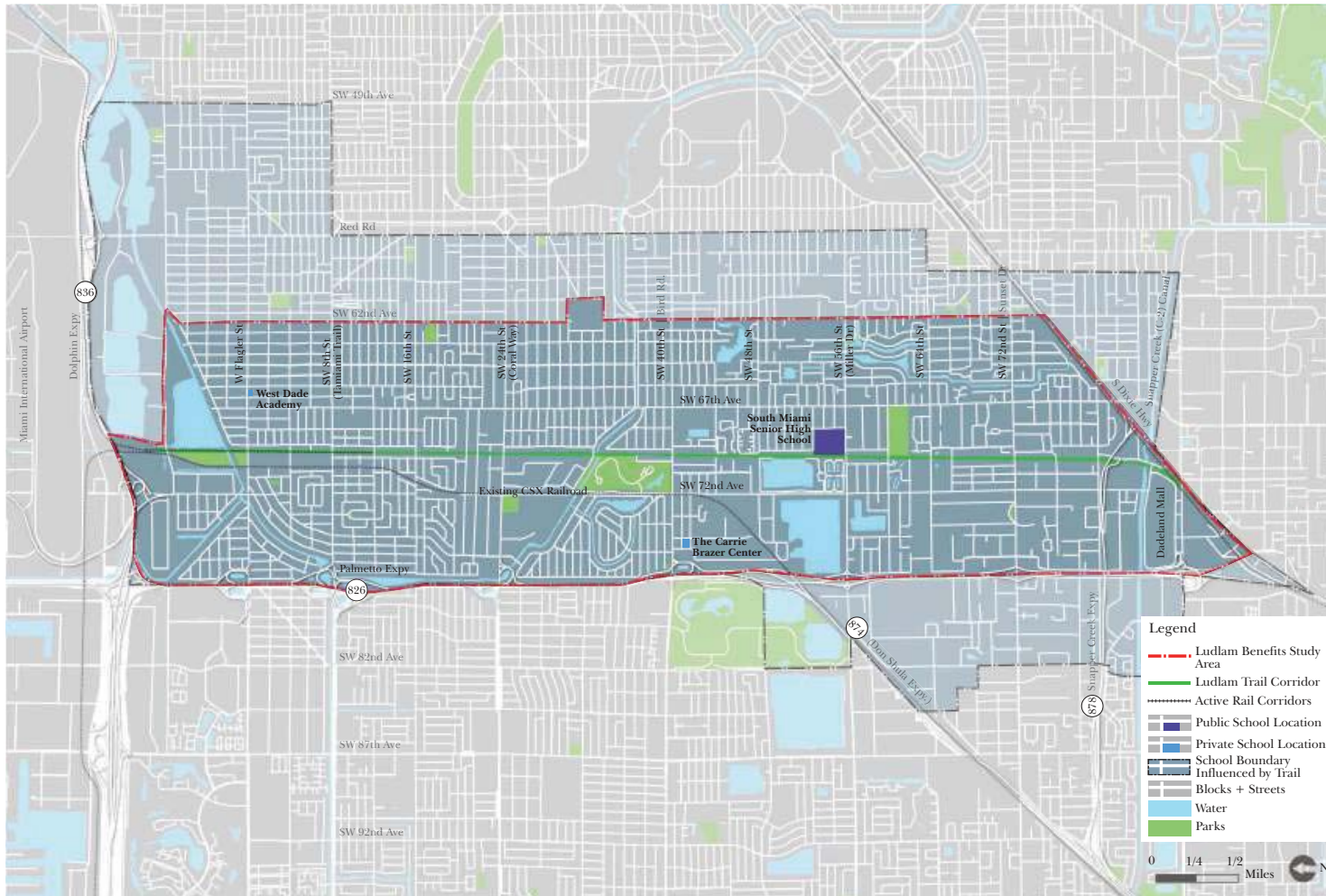
The map to the right identifies the location of middle schools and their attendance areas within the Ludlam Trail Study Area. Both South Miami Middle School and West Miami Middle School serve populations on both sides of the corridor. As stated for the elementary schools, the development of Ludlam Trail could provide a safe route for students to walk or bicycle to school.

### 1.3.14 MIDDLE SCHOOLS + ATTENDANCE AREAS



# Section One EXISTING CONDITIONS ANALYSIS

## 1.3.15 HIGH SCHOOL + CATCHMENT AREA MAP



## 1.3.15 HIGH SCHOOL BOUNDARY

The map to the left identifies one existing high school with an attendance boundary which covers the entire Study Area. Located immediately adjacent to the Ludlam Trail corridor, South Miami Senior High School serves as the typical school connection example for the Ludlam Trail Design Guidelines and Standards Study. An increase in students either walking or biking to school would relieve traffic congestion in the vicinity.

This data will be used to identify the potential social, environmental, and economic benefits area residents would experience from the development of Ludlam Trail as a safe route to school.

## 1.3 PHYSICAL CONDITIONS SUMMARY:

Through a thorough understanding of current land use patterns, transportation patterns, built environment, parks and recreation venues, and cultural venues the following items have been identified:

- Areas of commercial activity are primarily located perpendicular to the corridor and are located along arterial or collector streets
- Large areas of single family residential land uses exist adjacent to the corridor
- Block patterns adjacent to the corridor consist primarily of 'super blocks' which limit access to the corridor
- Two large areas consisting of commercial and medium to high density residential land uses with large vacant or underutilized parcel exist near SW 24th St. (Coral Way) and SW 40th St. (Bird Road)
- Ludlam Trail will serve as a major north/south route connection for multiple bus routes and pedestrian access route to two major Metrorail Stations
- Existing and proposed bike master plans identify Ludlam as a key off-road/greenway route.

Multiple school boundaries extend to either side of the Ludlam Trail corridor and could benefit from a safe route for students to travel to school



# Section One EXISTING CONDITIONS ANALYSIS

## 1.4 DEMOGRAPHIC SUMMARY

The demographic overview is intended to place the Ludlam Trail Walkable Area and Study Area in a comparative context to see how these areas are performing against both a county-wide and national average. The demographic overview indicates the following important aspects of the population of the Ludlam Trail Study Area and Walkable Area:

- The slight population decline for the Walkable Area and Study Area indicates the need for an intervention to improve overall livability of the area and economic competitiveness.
- The slight decline in household growth within the Walkable Area and the Study Area indicates a shrinking household size
- The lack of extreme growth or decline indicates that the projected population estimates used will provide current information and will not contain extreme variables.
- The Study Area and Walkable Area contain an older population with potentially an increased need for social services or health-related care.
- The Study Area and Walkable Area have a higher than County average for Hispanic population
- Enhanced walkability and area amenities could assist groups already in the area as well as potentially attract a greater number of families and young professionals

## 1.4 DEMOGRAPHIC OVERVIEW

In order to better understand the competitive context of the area around Ludlam Trail, AECOM conducted a demographic analysis overview by gathering and examining data and information on the existing conditions of the population within the Walkable Area, or the area within a half-mile (1/2) access of the trail as shown on page 9, and how this area intersects and compares with the surrounding region. This assessment includes both quantitative and qualitative information, from pictures and observations made during the tour of the Walkable Area to extensive demographic data from multiple sources.

AECOM gathered quantitative data from various public and private sources, including GIS shapefiles and parcel data from Miami-Dade County and data from third-party data providers including private sources such as ESRI, Woods & Poole, and CoStar Property and public sources such as the U.S. Census Bureau, and the U.S. Bureau of Labor Statistics. A full set of tables with all data reviewed is located in Appendix A.

### POPULATION AND HOUSEHOLDS

Population and household growth are analyzed in market analyses, economic impact studies, and other land use economics studies for a few reasons. First, the growth or decline in population can indicate an area's relative economic condition. If an area is losing population rapidly, it can signal other economic forces at work that need to be identified. A small population decline can indicate the need for particular interventions to improve overall livability of an area. On the other hand, population growth can be the mark of a successful, growing community. Growth in households mean growing users of government services, but also as a "purchasing unit," can mean the need for additional retail and services in an area as supply follows demand.

For the initial demographic overview, AECOM examined the half-mile Ludlam Trail Walkable Area (users within a half-mile walking distance), the Study Area (which is slightly larger), Miami-Dade County, and the United States. The Miami-Dade County and United States data can place the Ludlam Trail Walkable Area and Study Area in a comparative context to see how they are performing against both a county-wide and national average.

### Population in the Ludlam Trail and Comparative Areas, 2000-2014

	Population			00-'09 CAGR /1	09-'14 CAGR /1
	2000	2009	2014		
Walkable Area	32,288	32,152	32,089	-0.05%	-0.04%
Study Area	52,680	52,240	52,116	-0.09%	-0.05%
Miami-Dade	2,232,351	2,442,161	2,522,409	1.00%	0.65%
USA	278,049,507	306,109,789	320,322,004	1.07%	0.91%

1/ Compound Annual Growth Rate—A way of expressing the average annual growth, if the same growth were to happen every year in the time period.

Source: ESRI Business Analyst, 2009; AECOM 2010.

Population in the Ludlam Trail Walkable Area and the Study Area are staying steady; there has been a slight decrease between 2000 and 2009 of approximately five-tenths of a percent, a trend expected to continue in the coming five years, according to projections by ESRI. By comparison, Miami-Dade County grew by approximately one percent annually from 2000 to 2009. This is comparable to the U.S. population growth during the same period (1.07 percent growth in population annually). The lack of growth and extreme decline indicates that the projected population estimates used will provide current information and will not contain extreme variables.

Household growth occurred in a pattern similar to population, though in the 2000 to 2009 period, the number of households in the Ludlam Trail Walkable Area and Study Area shrank more slowly than population. This could indicate a shrinking household size. Average household size (as determined by dividing population by number of households) in the Ludlam Trail Walkable Area is 2.66, which is the same as the U.S. average. The Study Area and Miami-Dade County's household sizes are larger than average, at 2.83 and 2.93 respectively.

### AGE

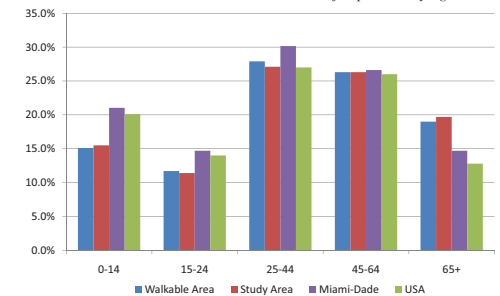
Age is an important characteristic to determine the types of services needed, both in terms of retail services and government services. However, the age profile of an area can also potentially determine the future characteristics of an area and the types of housing and other real estate products needed to meet the future demand. For example, a large number of young children will necessitate schools, businesses catering to families, day care, and homes to accommodate families, while a large elderly population will likely need new healthcare options, retirement housing, and related social services.

The Ludlam Trail Walkable Area and Study Area's age profiles are significantly older than Miami-Dade County and the U.S. The median age in 2009 was 41.6 in the Ludlam Trail Walkable Area and 42.2 in the Study Area, compared to 36.8 in Miami-Dade County and 36.9 in the U.S.

The Influence and Study areas have a larger proportion of population in the 65+ age range, and fewer children under the age of 14 than

Miami-Dade County and the U.S. This could indicate the need for additional retirement options so that these residents may remain in the area as they age. Additionally, it is possible that the housing product types in some of the area are not appropriate for families with small children and appeal more to those with smaller household sizes; singles and couples of working age, empty nesters, and those of retirement age. Enhanced walkability and area amenities could assist groups already in the area as well as potentially attract a greater number of families and young professionals.

Share of Population by Age, 2009



Source: ESRI, AECOM 2010

### RACE AND ETHNICITY

Race and ethnicity data characterize how areas are changing, and businesses who cater to particular populations are very interested in this characteristic as a component of the area's overall suitability for their businesses. Furthermore, diversity is increasingly being used to measure an area's ability to embrace new ideas and be interesting places to live, attracting additional new residents with its vibrancy.



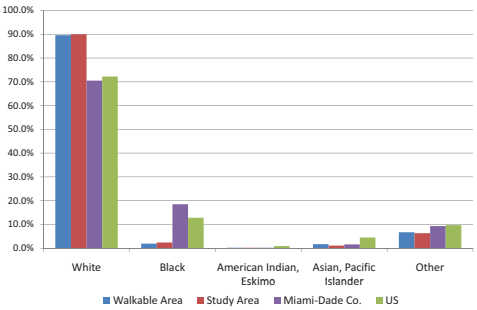
# Section One EXISTING CONDITIONS ANALYSIS

Miami-Dade County is of course known to be a very diverse place, with residents of a Hispanic origin contributing widely to the culture. It should be noted that Hispanic origin is a separate characteristic to race; those identifying as being of Hispanic origin can belong to any race.

The Walkable Area and Study Areas are mostly white, with approximately ninety (90%) percent of the population in that category. This is higher than in the U.S. or Miami-Dade as a whole, which have a 70 and 72 percent white population respectively.

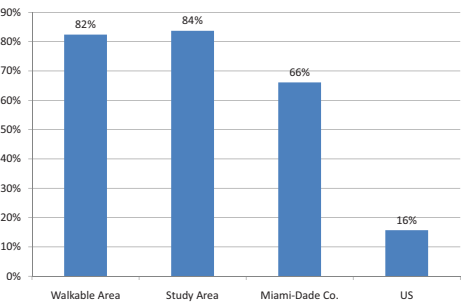
While the Ludlam Trail Walkable Area and Study Area have a mostly-white population, this belies its diversity. As in Miami-Dade County, those identified as being of Hispanic origin play a prominent role in the population of the two areas, with 82 and 84 percent of persons in the Ludlam Trail Walkable and Study Areas claiming Hispanic heritage, respectively. This is higher than Miami-Dade which has 66 percent of its population identifying as such. Therefore, although the Walkable Area and Study Area are diverse in race and ethnicity, these areas are not as diverse as Miami-Dade County overall. This may make the area less attractive to businesses which are looking for diverse and vibrant communities. This lack of diversity as compared to the County overall may be contributed to the lack of housing product options which are appropriate for families.

Racial Composition of Population, 2009



Source: ESRI, AECOM 2010

Percent of Population of Hispanic Origin, 2009



Source: ESRI, AECOM 2010

## SUMMARY OF FINDINGS

Demographically, the population surrounding Ludlam Trail is stable in terms of growth, however businesses are more attracted to growing communities. Residents within the Walkable Area and the Study Area are older than state and County averages, and there are fewer children per capita. Enhanced walkability and area amenities could assist groups already in the area as well as potentially attract a greater number of families and young professionals. In terms of racial and ethnic diversity, the corridor's population is less diverse than Miami-Dade County and may lead to a lack of interest from businesses looking for diverse, vibrant communities.

Population and household figures developed during the demographic overview will be used for estimating potential benefits associated with the construction of Ludlam Trail. Earlier studies on of the corridor have provided population figures, however, for all purposes associated with this report, the population and household estimates stated during this demographic overview will be used for estimating benefits.



# Section One EXISTING CONDITIONS ANALYSIS

## 1.5 BASELINE ECONOMIC ASSESSMENT OVERALL SUMMARY

The Baseline Assessment identified the following important aspects of the population of the Ludlam Trail Study Area and Walkable Area:

- The southern and eastern portions of the corridor includes areas of high household income which supports more services and retail activities.
- Income is growing across the Study Area which translates into additional need for retail and services
- A high proportion of employment in retail indicates a need to introduce diversity in employment with an increased need in flexible office space.
- The area has a higher than County average of 55% owner-occupied households creating a more stable retail and residential market
- Extremely low vacancy rates for industrial and retail spaces within the Study Area may suggest either stagnation or under-supply of the market

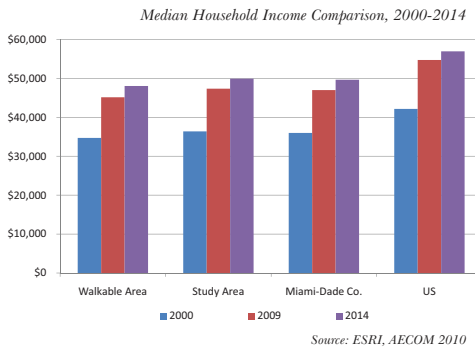
## 1.5 BASELINE ECONOMIC ASSESSMENT

AECOM researched multiple sources of economic and real estate data to assess the existing economic conditions within the Ludlam Trail Study Area and Walkable Area. A baseline assessment will be conducted for two reasons; first to establish a baseline report of existing economic conditions which can be referenced in future studies of the economic impact from the development of the Ludlam Trail; and secondly, to provide baseline information to estimate the future economic impacts from the development of Ludlam Trail.

AECOM gathered quantitative data from various public and private sources, including GIS shapefiles and parcel data from Miami-Dade County and data from third-party data providers including private sources such as ESRI, Woods & Poole, and CoStar Property and public sources such as the U.S. Census Bureau, and the U.S. Bureau of Labor Statistics. A full set of tables with all data reviewed is located in Appendix B.

### HOUSEHOLD INCOME CHARACTERISTICS

In addition to the number of residents and households in an area, household income is one of the most important characteristics businesses (particularly retail businesses) use in identifying sites because it indicates the ability of the population to buy services. The Ludlam Trail Walkable Area and Study Area's median household incomes (\$45,000 and \$47,000 respectively in 2009) are on par with Miami-Dade (\$46,500) but lower than the U.S. (\$55,000).



The Study Area has experienced an approximate 30 percent increase in income from 2000 to 2009, at an average annual rate of just over 3 percent. This suggests that each area had approximately a 0.6 annual percentage increase in real income (over and above the estimated 2.78 percent inflation over the same period).

Overall, the area around Ludlam Trail is middle income. It is evident from mapping income by Census block group that incomes vary widely throughout the study areas (see map below). There are block groups in the southern part of the Study Area with a median household income of over \$100,000 per year, while there are adjacent block groups with median household incomes of under \$30,000. The proximity of the southern part of the Study Area to additional areas of high median household incomes near Coral Gables and Pinecrest, is also likely to support greater retail and services in that part, and land use patterns seem to suggest this has manifested itself already (for example, Dadeland Mall).

AECOM also examined the distribution of households by household income. The approximate 12,000 households in the Ludlam Trail Walkable Area have been becoming more affluent.

Median Household Income by Census Block Group, 2009



Source: ESRI, AECOM 2010

From 2000 to 2009, the number of households earning under \$50,000 decreased while the number earning more than \$50,000 increased. This suggests that in the future, households in the area will have greater purchasing power and will therefore be better able to support additional retail and services.

### EMPLOYMENT

Incomes, of course, are clearly tied to employment. In the Study Area, 63 percent of employed persons over the age of 16 are white collar employees, 18 percent employed in services, and 19 percent blue collar employees. Just under half of all employed persons in the Study Area are employed in services industries. These industries include everything from education to accommodations and food services. The next largest category is retail, with 11 percent of all employed persons working in retail establishments.

The employment of residents in retail correlates to the same percentage of retail businesses. This is twice the share of jobs that Miami-Dade County had in retail in 2009 (10 percent), according to data from Woods and Poole, and is a result of the presence of Dadeland Mall.

The current employment profile of the area indicates that the area is not a primary employment center. While it does have substantial commercial real estate, which was observed in the field as well as in the data, it is mostly retail or services. Retail jobs do not have the same amount of impact that office employment might have with higher wage jobs and additional economic linkages. Further diversification of the area can occur over time as uses convert or additional density occurs in the existing commercial areas. An increase in population diversity may help the area become more diverse through employment.

### REAL ESTATE OVERVIEW

To gauge the Study Area's relative position in the regional real estate markets, AECOM evaluated published data on historic performance and other factors as available. This preliminary data provided a contextual framework to color and inform later data collection and analysis on the

## Section One EXISTING CONDITIONS ANALYSIS

Ludlam Trail Walkable Area and the benefits analysis that followed. The full data on the commercial markets are located in Appendix B. Following are summary points about each land use.

### Residential:

Study area residents live in 19,385 housing units, 55 percent of which are owner-occupied, 40 percent renter-occupied, and 5 percent of which are vacant. The Study Area has 2.07 percent of Miami-Dade County housing units. The Study Area has a higher percentage of owner-occupied housing units (55 percent) versus Miami-Dade County (51 percent). The share of owner-occupied housing is expected to increase in both areas through 2014, according to ESRI's projections.

### Office:

Though not a core office location like Miami's financial district, the Study Area has nearly 2 million square feet of office space. The majority of space in the Study Area (64 percent) is considered "Class B" meaning that it is not a premium office location with high end finishes.

Space in the Study Area rents for an average of approximately \$30 per square foot, which is similar to Miami-Dade County as a whole, but higher than the submarkets in which it resides. (The trail corridor runs through three of CoStar's office submarkets: Kendall, West Miami, and Miami Airport. Data from these areas are used as points of comparison to compare to the Study Area in the data tables.)

- Kendall submarket has 11 million square feet of office space that rents for an average of \$27 per square foot. There are just under 4,000 square feet under construction in this submarket, and they are to be located in the part of this submarket located in the Ludlam Trail Study Area.
- West Miami submarket has a total of 3.5 million square feet of office space. With under 3 percent vacancy, it has the lowest direct vacancy rate of any area examined. Space rents for approximately \$26 per square foot.
- Miami Airport submarket is the largest of any examined. It has 17.4 million square feet of office space and has a high vacancy rate of approximately 16 percent. A and B Class space has the higher vacancy rates approaching 20 percent. About one-third of all the submarket's space is class A.

Overall, Miami-Dade County has seen increasing vacancy rates, which has essentially followed economic conditions across the nation. Analysis: Office space development is not seen as a driving force for the Ludlam Trail Study Area's redevelopment due to its sub-standard market size.

### Industrial:

Though many areas along the Ludlam Trail corridor appear industrial, the Study Area contains 4.6 million square feet of industrial space which accounts for only 2 percent of Miami-Dade County's overall market. In addition, the Study Area's vacancy rate is extremely low, under 1 percent. Extremely low vacancy rates can actually be problematic from an economic development perspective, if space is not available to recruit new workplaces.

Industrial space in the Study Area currently has an average rental rate of \$16 per square foot, which is approximately twice that of Miami-Dade County. The difference in rental rates may be a reflection of industrial space being used for flexible office space which typically rents for a higher price than large warehouse space.

Industrial space/flexible office space development could be a catalyst for redevelopment of the Ludlam Trail Study Area due to its extremely low vacancy rate.

### Retail:

As documented in the employment section, retail is a dominant use in the Study Area, however most of these properties do not directly abut the trail corridor. There is 3.6 million square feet of retail space in the Study Area, with an average rental price of \$25.75 per square foot. This rate is likely driven higher by the presence of the Dadeland Mall and surrounding retail. Other smaller centers along the corridor likely rent for much lower rates.

The Study Area has an extremely low vacancy rate of just over one (1) percent. A typical frictional vacancy rate allows tenants to move in and out can range from 5 to 7 percent in a healthy market (as seen in the Miami-Dade market overall and in the Kendall submarket). Lower vacancy rates can indicate market stagnation or an under supply of space. According to CoStar data, there have been no new deliveries in the Study Area of retail space.

Seventy-seven (77) percent of the Study Area retail space is contained in shopping centers. By comparison, Miami-Dade retail space is approximately split equally between shopping center space

and other retail space (which can include freestanding "box" stores, downtown retail in buildings, and other types of retail buildings). The Ludlam Trail Study Area could see development of "Big Box" retail space, generally associated with low density areas, as large vacant properties exist adjacent to the corridor.

Parcels by Total Value, Ludlam Trail Walkable Area, 2009



Source: ESRI, AECOM 2010

## 1.5 BASELINE ECONOMIC ASSESSMENT

The Baseline Assessment for the Ludlam Trail Study Area identified the following important characteristics of the market:

- The Study Area has twice the number of person employed in Retail as the rest of Miami-Dade County due to the presence of the Dadeland Mall
- There is a higher than County average of owner-occupied households (55% versus 51% respectively)
- Highest office vacancy rate is located within the Miami Airport market with near the north terminus of the corridor and has a 20% vacancy rate.
- The Study Area is primarily a Class B office space market
- Industrial space within the Study Area currently enjoys a 1% vacancy rate which can be problematic in encouraging near business to locate within the area
- Retail vacancy rate is just over 1% which may suggest stagnation or an under-supply of space (5-7% vacancy is encouraged)



# Section One EXISTING CONDITIONS ANALYSIS

## 1.5 BASELINE ECONOMIC ASSESSMENT (CONTINUED)

The Baseline Assessment for the Ludlam Trail Study Area identified the following important characteristics of the market:

- The Study Area has a total assessed value of \$6.34 billion
- The average per parcel assessed value is \$455,000
- Within the Walkable Area, average per parcel assessed values increase to \$539,000 per parcel due to larger lots and a higher percentage of commercial properties.
- 14% of properties within the Walkable Area are commercial versus 10% for the Study Area
- Improvements to property values will have a larger dollar total for Miami-Dade County versus other jurisdictions due to 75% of all assessed property value being within unincorporated areas.

The following baseline assessment information will be utilized in formulating economic and social benefits based on the development of Ludlam Trail.

According to property tax records from Miami-Dade County, the Study Area as a whole has 13,934 parcels, valued at \$7.5 billion, with an assessed value for property tax purposes of \$6.34 billion. This gives an average per parcel assessed value for tax purposes of \$455,000

Property values in the Ludlam Trail Walkable Area are valued slightly higher with a per parcel assessed value of \$539,000. This may be due to larger overall parcel sizes or types of uses within the Walkable Area (i.e. commercial rather than residential).

The total values (including land plus improvements and not necessarily taxable value) are mapped by parcel for the Ludlam Trail Walkable Area in the map on the previous page.

The Study Area and Ludlam Trail Walkable Area contain five different taxing jurisdictions: the Cities of Miami, West Miami, and South Miami; the Village of Pinecrest; and Unincorporated Miami-Dade County. Each jurisdiction has different property tax millage rates, which will be taken into consideration when estimating potential tax revenue increases in Section Three of this report. The following are breakdowns of property value totals by jurisdiction:

**City of Miami:** 1,316 of the Ludlam Trail Walkable Area parcels and 795 of the remaining Study Area parcels are in the City of Miami, with a total value of \$437 million and \$237 million respectively. The assessed values on these same parcels total \$480 million. The parcels encompass a total of 392 acres of land.

**Village of Pinecrest:** 101 of the Ludlam Trail Walkable Area parcels are in the Village of Pinecrest, with a total value of \$150 million and an assessed value of \$143 million. There are no parcels in the remainder of the Study Area in this jurisdiction. The total acreage represented by these parcels is 56 acres.

**City of South Miami:** 822 of the Ludlam Trail Walkable Area parcels and 1,055 of the remaining Study Area parcels are in the City of South Miami, with a total value of \$322 million and \$533 million respectively and assessed values of \$232 and \$439 million, respectively.

**City of West Miami:** 459 of the Ludlam Trail Walkable Area parcels and 580 of the remaining Study Area parcels are in the City of West Miami, on a total of 201 acres, with a total value of \$169.5 million and \$149.9 million, respectively, and an assessed value of \$147 and \$109 million, respectively.

**Unincorporated Miami-Dade County:** Outside of the above jurisdictions are the remaining 8,806 parcels, 4,960 in the Ludlam Trail Walkable Area and 3,846 in the remaining Study Area. These parcels have a total value of \$5.5 billion, with most of this value (\$3.6 billion) in the Ludlam Trail Walkable Area and \$1.8 billion in the remainder of the Study Area. The total assessed value of these parcels is \$4.8 billion.

Overall Profile of Ludlam Trail Walkable Area and Study Area Parcels, Acres, Total Value, and Assessed Value by Jurisdiction, 2009. Net Study Area is the Study Area less the Walkable Area

Miami	Parcels	Acres	Total Value	Assessed Value
Walkable Area	1,316	247	\$437,345,369	\$321,603,376
Net Study Area	795	145	\$236,996,997	\$158,096,472
<b>Total</b>	<b>2,111</b>	<b>392</b>	<b>\$674,342,366</b>	<b>\$479,699,848</b>
<b>Pinecrest</b>				
Walkable Area	101	56	\$150,049,620	\$142,803,230
Net Study Area	-	-	\$0	\$0
<b>Total</b>	<b>101</b>	<b>56</b>	<b>\$150,049,620</b>	<b>\$142,803,230</b>
<b>South Miami</b>				
Walkable Area	822	306	\$321,952,267	\$232,386,727
Net Study Area	1,055	275	\$533,010,134	\$438,941,884
<b>Total</b>	<b>1,877</b>	<b>581</b>	<b>\$854,962,401</b>	<b>\$671,328,611</b>
<b>West Miami</b>				
Walkable Area	459	91	\$169,451,287	\$146,794,918
Net Study Area	580	110	\$149,864,299	\$109,448,052
<b>Total</b>	<b>1,039</b>	<b>201</b>	<b>\$319,315,586</b>	<b>\$256,242,970</b>
<b>Unincorp.</b>				
Walkable Area	4,960	1,801	\$3,630,961,094	\$3,281,965,116
Net Study Area	3,846	1,143	\$1,822,253,942	\$1,512,764,442
<b>Total</b>	<b>8,806</b>	<b>2,943</b>	<b>\$5,453,215,036</b>	<b>\$4,794,729,558</b>
<b>TOTAL</b>				
Walkable Area	7,658	2,500	\$4,709,759,637	\$4,125,553,367
Net Study Area	6,276	1,673	\$2,742,125,372	\$2,219,250,850
<b>TOTAL</b>	<b>13,934</b>	<b>4,172</b>	<b>\$7,451,885,009</b>	<b>\$6,344,804,217</b>

Source: Miami-Dade County; AECOM, 2010.

Assessed Value of Parcels in the Ludlam Trail Walkable Area by Jurisdiction and Use

	Miami	Pinecrest	South Miami	West Miami	Unincorp.	Total
SF Residential	\$187,095,375	\$16,342,983	\$184,563,958	\$52,030,017	\$692,282,739	\$1,132,315,072
MF Residential	\$27,668,179	\$45,950,065	\$21,601,967	\$44,377,871	\$321,049,518	\$460,647,600
Mobile Home					\$1,416,929	\$1,416,929
Retail	\$47,390,238	\$24,103,526	\$5,091,198	\$14,639,438	\$236,382,150	\$327,606,550
Office	\$4,084,951	\$46,606,147	\$2,469,992	\$8,282,289	\$56,343,538	\$117,786,917
Industrial	\$19,577,403	\$3,146,969		\$1,665,486	\$156,158,944	\$180,548,802
Other Taxable	\$20,322,197	\$5,200,764	\$582,941	\$18,255,344	\$1,473,898,759	\$1,518,260,005
Land	\$3,530,767	\$1,452,776	\$2,056,825	\$2,524,821	\$145,456,933	\$155,022,122
Institutional	\$10,937,502		\$16,019,846	\$3,934,478	\$180,065,276	\$210,957,102
Transportation	\$996,764			\$1,085,174	\$18,910,330	\$20,992,268
<b>Total</b>	<b>\$321,603,376</b>	<b>\$142,803,230</b>	<b>\$232,386,727</b>	<b>\$146,794,918</b>	<b>\$3,281,965,116</b>	<b>\$4,125,553,367</b>

Source: Miami-Dade County GIS; AECOM, 2010

# Section One EXISTING CONDITIONS ANALYSIS

## 1.6 EXISTING CONDITIONS ANALYSIS SUMMARY

In order to estimate the potential benefits of Ludlam Trail, it is essential to understand the area's existing conditions. AECOM reviewed pertinent planning documents; analyzed the physical conditions of the Study Area; examined the area's demographics; and conducted an economic assessment to provide a baseline for future analysis. Following are important findings for each task completed:

### REVIEW OF PLANNING DOCUMENTS

The construction of Ludlam Trail is not only consistent with Miami-Dade County and City of Miami Park Master Plan and Bicycle Master Plan, but it would be a major step to realizing many of the community's stated goals of creating a more connected and sustainable place to live, work, and play.

Multiple planning documents were reviewed in order to ensure a coordinated effort to document potential benefits related to the construction of Ludlam Trail. These planning documents share the common theme of making Miami-Dade County a more socially, environmentally, and economically sustainable place. The development of Ludlam Trail is a direct implementation of these goals, summarized by Miami-Dade County Parks and Open Spaces System Master Plan's goals for bikeways, greenways and trails:

- An interconnected system that provides transportation alternatives and reduces traffic congestion
- Creation of new recreational opportunities
- Increased property values
- Protection of natural resources
- Encouragement of tourism and business development

### PHYSICAL CONDITIONS

The AECOM team analyzed current land use patterns, transportation patterns, the built environment, parks and recreation venues, and cultural venues. The Study Area is primarily residential, but has a notable presence of commercial and industrial properties located in parallel bands in perpendicular orientation to the trail. Due to the trail's history as an active railway, the corridor still has a number of broken links in the surrounding roadway network.

This has also affected land uses near the trail, particularly in the presence of superblocks, and some large tracks of vacant or underutilized land. As such, the construction of Ludlam Trail could be a powerful redevelopment tool to reconnect the transportation networks and attract investment into nearby vacant parcels. Over a period of time, the trail will also provide opportunities to strengthen linkages between residents and their schools, parks, and local commercial corridors.

### DEMOGRAPHIC OVERVIEW

Demographic overviews allow for a understanding of where the direction the current population trends are headed. Important aspects of the population of the Ludlam Trail Study Area and Walkable Area include to following:

- The slight population decline for the Walkable Area and Study Area indicates the need for an intervention to improve overall livability of the area.
- The slight decline in household growth within the Walkable Area and the Study Area indicates a shrinking household size.
- The Study Area and Walkable Area contain an older population with potentially an increase need for social services or health-related care.
- The Study Area and Walkable Area have a higher than County average for Hispanic population
- Enhanced walkability and area amenities could assist groups already in the area as well as potentially attract a greater number of families and young professionals.

The population surrounding Ludlam Trail is largely stable in terms of growth. Residents within the Walkable Area and the Study Area are slightly older than state and County averages, and there are fewer children per capita. In terms of racial and ethnic diversity, the corridor's population is predominantly white and many identify themselves as Hispanic.

### ECONOMIC CONDITIONS

A baseline economic assessment of current conditions was conducted by the AECOM team. The baseline economic assessment identified the following important aspects of the population of the Ludlam Trail Study Area and Walkable Area:

- The southern and eastern portions of the corridor includes areas of high household income which supports more services and retail activities.
- Income is growing across the Study Area which translates into additional need for retail and services
- A high proportion of employment in retail indicates a need to introduce diversity in employment with an increased need in flexible office space.
- The area has a higher than County average of 55% owner-occupied households creating a more stable retail and residential market
- Extremely low vacancy rates for industrial and retail spaces within the Study Area may suggest either stagnation or under-supply of the market

In the next section, the research data and analysis completed for the existing conditions will be used to identify potential opportunities for Ludlam Trail to incorporate the guiding documents stated goals, shown on page 6.



Winter Garden, Florida (West Orange Trail)



Dunedin, Florida (Frd E. Marquis Pinellas Trail)



Killarney Station, West Orange Trail

## *Section Two:* **SCENARIO DEVELOPMENT**



*“Greenways and trails offer a new way of looking at how a community’s cultural, historic, recreational and conservation needs fit into an overall picture that also includes economic growth. With their emphasis on connections, greenways and trails allow community leaders to consider how existing parks and open spaces can become part of a network of green that supports wildlife, pleases people, and attracts tourists and clean industry.”*

OFFICE of GREENWAYS and TRAILS, FLORIDA DEPT of ENVIRONMENTAL PROTECTION,  
Thinking Green: A Guide to the Benefits and Costs of Greenways and Trails, 1998



Ludlam Trail at Snapper Creek (C-2) Canal looking northwest

## Section Two SCENARIO DEVELOPMENT

### 2.1 OPPORTUNITIES AND CONSTRAINTS SUMMARY

Through the vision of Ludlam Trail as a non-motorized, shared-use trail and linear park, many opportunities exist for positive impacts to the surrounding neighborhoods. These opportunities fall under three broad categories and include social, environmental, and economic opportunities. Each opportunity for positive impact from the development of Ludlam Trail can be traced back to a guiding document as shown in the Goals Matrix found in section 1.1 of the study.

#### 2.1.1 SOCIAL GOALS OPPORTUNITIES

Social goals are wide ranging and include topics from healthy lifestyles to accessibility and education. Based on the development of Ludlam Trail, the surrounding neighborhoods stand to achieve several community based goals by having better access to recreation opportunities, preservation of cultural and historically significant areas, and better access to the community at large without the need of a vehicle. Quantifiable social benefits, which will be addressed in Section Three of this study, include increases in access to area amenities, number of people engaged in regular physical activity, and the amount of calories burned from greater levels of physical activity.

### 2.1 OPPORTUNITIES AND CONSTRAINTS

The vision for Ludlam Trail is a 6.2 mile long non-motorized, shared-use trail that serves local residents as well as visitors, commuters, and a wide variety of users throughout the County. It is anticipated that the trail will be used to walk, bike, run and skate for fun and exercise; to access transit; to go shopping; and to commute to and from home, school and work.

In addition to providing new recreation and transportation opportunities, it is also anticipated that development of the Ludlam Trail will generate opportunities to provide a wide variety of social, environmental and economic benefits for County residents. Many of these benefits are community based goals outlined by guiding documents as shown in Section 1.1 of this study. These benefits include the following:

#### Social Benefits

- Healthy Lifestyles
- Public Safety
- Affordable Housing
- Education
- Accessibility
- Cultural/ Historical Resource Preservation

#### Environmental Benefits

- Reduced Vehicle Trips/ Miles
- Decrease Use of Fossil Fuels
- Clean Air and Water
- Reduction in Greenhouse Gases, Climate Changes
- Enhance Biodiversity

#### Economic Benefits

- Improve Mobility/ Connectivity
- Stabilize/ Increase Property Values
- Increase Tax Revenue
- Redevelopment of Existing Properties
- New Jobs

Several potential constraints exist along the Ludlam Trail corridor which could limit benefits typically associated with the development of trails and greenways. The primary constraint is the existing street network and block pattern. Access is planned from every public right-of-way adjacent to the corridor, however, additional access points would necessitate the redevelopment of private property which may not occur or be directly linked to the presence of

the trail. Benefits identified with the development of Ludlam Trail will identify only those which would occur directly from the development of the trail.

This section identifies and illustrates opportunities to achieve each goal and demonstrates that the development Ludlam Trail is an important step in the County's sustainability goals to be a more livable community. Following are detailed descriptions of social, environmental, and economic opportunities.

#### 2.1.1 SOCIAL OPPORTUNITIES

##### HEALTHY LIFESTYLES

Construction of the Ludlam Trail will help Miami-Dade County advance many of its social goals. Currently the existing, abandoned railroad corridor acts as a barrier and deterrent to social interaction along the corridor. Fences and walls have been constructed for security, and many areas are overgrown and strewn with trash. Due to the presence of the fences and walls, the corridor lacks natural surveillance by adjacent residences, which is commonly referred to as "eyes on the trail." Having a lack of natural surveillance creates a greater opportunity for crime, vandalism and other undesirable behavior.

Experience from other similar trails throughout the country, such as the Fred E. Marquis Pinellas Trail, indicates that development of Ludlam Trail would reverse this condition. Residents and business-owners will remove walls and fences to gain access gates to the trail. The corridor will become regularly monitored and maintained, and the trail will serve as the social center of the community. Residents will use the trail for daily exercise, often with friends or relatives, which will significantly advance the County's goal of promoting healthy lifestyles.



Activity along the Fred Marquis Pinellas Trail increases the community's physical activity levels and promotes a healthy lifestyle

Potential quantifiable benefits associated with healthy lifestyles would be an increase in the number of people receiving regular physical activity and additional calories burned.

##### PUBLIC SAFETY

Development of Ludlam Trail will also advance the goal to increase public safety. First, construction and maintenance of the trail will activate the corridor, serving as a deterrent to crime and illicit activities. Second, residents will be able to walk and bike along the trail rather than along busy streets. Where there is adequate space, the trail could also provide safe locations for recreational activities and facilities such as picnic areas, exercise stations, community gardens and playgrounds, all of which contribute to the goals of public safety, neighborhood stabilization and sociability. Paths can make a community more social interactive by those who bike, walking and roller-blade whereas people in cars are insulated from the outside world by distance, speed and windows.

##### AFFORDABLE HOUSING

Although typically not a direct impact from the development of trail, nonetheless, the construction of Ludlam Trail may be the catalyst for the development or redevelopment of vacant and/or underutilized properties along the corridor. These sites may provide needed new types of housing for a growing senior population and help attract families with the development of multiple housing types with direct access to the trail.

##### EDUCATION

The Ludlam Trail will provide tremendous opportunities to advance educational goals as well; South Miami Senior High School, South Miami Middle School and South Miami Elementary School are all located within the "heart" of the corridor north and south of Miller Road, and could use the trail to enhance their curriculum; Coral Terrace Elementary School is also near the corridor. An interactive "Trail Curriculum" could focus on fitness, math, science, history, reading and the environment. Mile markers, exercise stations, reading clues, math puzzles, history lessons, wildlife stations and other features or points of interest could be integrated into the pavement, signs and exhibits along the corridor. Community gardens which could be maintained by the schools or other institutions are additional opportunities. Virtual experiences such as pod casts, on-line lessons and fitness programs could add another dimension to the corridor experience.



## Section Two SCENARIO DEVELOPMENT

### ACCESSIBILITY

Perhaps the greatest social opportunity along the trail corridor is to advance Miami-Dade County's goal of increased "accessibility". At the local level, the Trail will provide access to schools, parks (such as Palmer Park, A.D. Barnes Park and Robert King High Park), jobs and shopping for the thousands of residents who live near the corridor. The presence of the trail might increase school participation in the Safe Routes to Schools program. From a regional perspective, the Ludlam Trail corridor is a vital link in the County's overall transportation network, connecting to the Metrorail Dadeland North Station to the south; the proposed Orange Line Metrorail NW 7th Station to the north; and to other planned trails including the M-Path Extension, South Dade Trail, Snapper Creek Trail, East/West Trail, and Merrick Trail as shown in the previous section of this study. Development of the Ludlam Trail link could eventually enhance accessibility opportunities for hundreds of thousands of Miami-Dade residents and visitors.

The study will identify an increased service area and estimate for the number of residents that gain access to transit, school and parks throughout the Ludlam Trail Study Area.

### CULTURAL / HISTORIC PRESERVATION

The Ludlam Trail corridor also provides a unique opportunity to create a sense of place for the community by "telling the story" of different cultures, historical events, civic leaders, natural and historic sites and other significant events, people and places in Miami-Dade County. Public art and exhibits, including integrated trail design (pavement, furnishings, shelters and other trail elements), can be used to interpret the stories. Similar to the educational initiative, on-line and virtual interpretation can further enrich the corridor experience.



Examples of Educational Signs approved for Miami-Dade County trails

### 2.1.2 ENVIRONMENTAL OPPORTUNITIES

#### REDUCE VEHICLE TRIPS / DECREASE USE OF FOSSIL FUELS

The Ludlam Trail corridor provides numerous opportunities to advance the County's environmental goals. The most obvious opportunity is to reduce the number of vehicle miles traveled (VMTs), vehicle daily trips (VDTs), and the use of fossil fuels; the more people walk, bike or skate to school and work, the fewer vehicles will be on the roads. This also helps to advance the goal of cleaner air. Once the trail is developed, the County may wish to conduct a "leave your car behind" campaign to encourage community residents to try alternative modes of transportation, and to keep track of reductions in VMTs and fuel use. This study will estimate the anticipated reduction in VDTs and associated VMTs in the Study Area as a result of the development of Ludlam Trail.

#### CLEAN AIR & WATER

Of the approximately seventy-two (72) acres within the trail right-of-way, only twelve (12) acres will be used for trail amenities; this leaves approximately sixty (60) acres that can be used to increase air quality, biodiversity, shade, and stormwater treatment.

Cleaning up the corridor and planting native vegetation will also contribute to the goal of cleaner water. Nutrient-rich stormwater run-off from adjacent properties will be filtered by the vegetation, helping to remove pollutants from the water before it filters down into the aquifer. Environmental benefits such as air pollution reductions will be estimated as part of the study.

#### REDUCTION IN GREENHOUSE GASES, CLIMATE CHANGES

Reduction in greenhouse gases may be realized through the reduction of VDTs within the Study Area. The number of miles saved will grow as people utilize the trail to commute to work or school, run errands, travel to Dadeland Mall, or visit others along the trail corridor. This will lead to a significant reduction in greenhouse gases from the Study Area. In addition, through the development of Ludlam Trail, over a thousand canopy trees will be planted. These trees will sequester tons of greenhouse gases that would have otherwise remained in the atmosphere contributing to global warming.

#### ENHANCE BIODIVERSITY

Biodiversity can be increased by replanting the corridor with native plants. Historically the majority of the Ludlam Trail corridor was part of the Pine Rockland and Tropical Hardwood

Hammock ecological communities once common to south Florida, but significantly reduced through conversion to housing and agriculture. The Pine Rockland ecological community, consisting of predominantly slash pine and native grasses and shrubs, is considered endangered and has been assigned the highest ranking of globally imperiled by the Florida Natural Areas Inventory. The Tropical Hardwood Hammock ecological community is also present in the area and is monitored by the Florida Natural Areas Inventory. It is considered by the Florida Fish and Wildlife Commission (FWC) as a rare and 'declining' habitat and consists of predominantly live oak, wild-tamarind, and a wide variety of native shrubs and groundcovers.

Many of these plant species could be re-introduced to the corridor, increasing wildlife habitat and biodiversity. Native plantings will create shade and absorb carbon, helping to slow the rate of climate change. The use of native plants will also reduce the need for irrigation and mowing, furthering the County's environmental goals to reduce the use of potable water and fossil fuels. Although the environmental conditions have been degraded by development and mimicking the natural fire cycle with prescribed burning may not be utilized in such an urban area, native plantings and select non-native species can be combined to form a holistic and biologically diverse landscape.

A.D. Barnes Park, which is located adjacent to the corridor north of SW 40th St. (Bird Road), contains natural areas that are utilized by many species of tropical migrant birds. The park is listed on the South Florida section of the Great Florida Birding Trail by the Florida Fish and Wildlife Commission and is listed as a birding location by the local chapter of the National Audubon Society, Tropical Audubon on their website. Increased tree canopy within the approximately seventy-two (72) acre corridor could become an extension of the natural areas found within A.D. Barnes Park and increase access to thousands of new park users and visitors.



Invasive species with Ludlam Trail Corridor as seen from SW 64th St. looking south

### 2.1.2 ENVIRONMENTAL OPPORTUNITIES

Environmental goals, which can be achieved by the development of Ludlam Trail, are unique to open spaces and greenways. Ludlam Trail will provide the opportunity to reduce the use of fossil fuels and vehicle trips made while still providing enhanced biodiversity. While reducing vehicle trips, the over sixty acres of new open green space will also provide cleaner water, improve air quality, and create the opportunity for trail users to enjoy native plant species of the Pine Rockland and Tropical Hardwood Hammock ecological communities. Environmental benefits which will be addressed in Section Three of this report include reductions in vehicle trips, miles traveled, greenhouse gases, and estimated values of pollution control.



## Section Two SCENARIO DEVELOPMENT

### 2.1.3 ECONOMIC GOALS

Economic goals have been well documented in such guiding planning documents as the Miami-Dade County Comprehensive Development Master Plan, Miami-Dade County Parks and Open Spaces System Master Plan and Miami 21 Code. Based on comparable research collected from within the state of Florida and from around the Country, positive economic impacts can be expected which can help stabilize or increase property values within a half (1/2) mile of the Ludlum Trail Corridor, create new jobs through the establishment of new trail oriented businesses and increase tax revenue for reinvestment into the community.

### 2.1.3 ECONOMIC OPPORTUNITIES

#### IMPROVE MOBILITY/ CONNECTIVITY

There are numerous opportunities throughout the corridor for Miami-Dade County to advance its economic goals. First and foremost, the corridor will increase mobility and connectivity as discussed in the 2.1.1 Social Opportunities section, which can have a significant impact on employers' access to Miami-Dade County's workforce. Major commercial activity centers such as the Dadeland Mall and Bird Ludlum Center on SW 40th St. (Bird Road) will benefit from improved access for both employees and shoppers. The increased connectivity and trail traffic associated with the Ludlum Trail will be quantified in section three of the study by estimating additional retail space and tax revenue generation supported by trail users.

#### STABILIZE/ INCREASE PROPERTY VALUES AND INCREASE TAX REVENUE

Second, there are numerous opportunities to meet the County's goal of stabilizing or increasing the values of adjacent residential properties. The values of single family homes adjacent to the trail will increase when the abandoned and neglected railroad corridor is replaced by an active, well-maintained and aesthetically pleasing linear park and trail. Residents of condominiums such as the Towers of Dadeland (by the Metrorail Dadeland North Station) and the Futura Gables (south of Coral Way/ SW 24th St) will benefit from access to the trail for both recreation and transportation, which will increase the re-sale and rental value of the units. Additionally, the trail may serve as a catalyst for the redevelopment of substandard housing, such as the declining mobile home park directly south of SW 8th St. (Tamiami Trail) and north of SW 12th St. By increasing property values, additional



Mobile home park located at SW 12th St. and Ludlum Trail Corridor

tax revenue will be available to the various jurisdictions. The study will estimate the potential property increase and associated tax revenue increase per jurisdiction for the Study Area linked to the development of Ludlum Trail. Currently, FEC is not paying property tax on the corridor, which means there would be no loss of tax revenue income from existing sources.

#### REDEVELOPMENT OF EXISTING PROPERTIES

There are also opportunities for enhancement and/or redevelopment of commercial properties, which are underutilized. Many of these properties are located at the intersections of the trail and major commercial roads. For commercial properties not directly adjacent to the trail, signs and kiosks could direct trail users to nearby businesses for food, beverages, supplies, and shopping, such as the small sandwich shop in the commercial district on Miller Road east of the trail corridor.



Sandwich shop located on SW 56th St. (Miller Drive) within five hundred feet of the corridor

Section Two of the study identifies in greater detail the potential for properties either adjacent or within 1/2 mile of the corridor that could experience change associated with the construction of Ludlum Trail.



Under utilized commercial space located on SW 24th St. (Coral Way) and adjacent to the corridor

#### NEW JOBS

Commercial properties directly adjacent to the trail could be repositioned and revitalized to meet the specific needs of trail users. Trails in other similar communities, such as the West Orange Trail documented in the Ludlum Trail Design Guidelines and Standards report, have generated the need for outdoor cafes, coffee shops, restaurants, ice cream shops, bicycle and skate rental and repair shops, and other trail-related uses. The under-utilized shops directly adjacent to the corridor in the Coral Plaza on SW 24th St. for example, could be redeveloped to meet the needs of trail users. Trail users will spend money on trail related items, such as bike rental, creating the need for additional retail space and jobs.

The trail corridor could also be used as a special events and festival venue by the County, furthering its goals of new job creation and increased revenues. Fun runs, art shows, food and wine festivals and native plant sales are just a few of the special events that could be hosted along the corridor.



Section Two SCENARIO DEVELOPMENT



**2.2 OVERALL SCENARIO PLAN**

Scenario development is an anticipatory planning tool commonly used for complex problems. Although many of the elements for the case study have been researched and analyzed, some factors remain partially unexplored. The scenario plan developed as part of this case study takes into consideration all research and analysis data with a goal of improving present-day choices.

**Legend**

- Green line: Lulliam Trail Corridor
- Black line: Existing Railroad to Remain
- Black line with cross-ticks: Walkable Area (1/2 Mile Service Area)
- Black line: Mass Network
- Blue line: Schools
- Green line: Parks
- Red line: Pedestrian Access Routes
- Blue line: Public Access
- Red line: Direct Benefits Parcel
- Yellow line: Indirect Benefits Multiple Parcel
- Blue line: Indirect Benefits Unique Parcel

**CONTEXT MAP**