



### SMART PLAN CORRIDOR INVENTORY

### KENDALL CORRIDOR

Prepared for

Miami-Dade Transportation Planning Organization



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#### 1. Introduction

The main objective of this report is to collect available demographic and socioeconomic data to prepare a preliminary inventory of the current land use along the Kendall SMART corridor.

The report also seeks to create a corridor inventory that establishes a complete picture of the existing conditions. Also, reviewed and documented in this report are the different planning initiatives implemented across the United States and in the Netherlands in order to identify guidelines, best practices, and tools that can be implemented in transit oriented developments in the Miami-Dade region.

#### 1.1. Background

In order to address the mobility needs throughout Miami-Dade County, the Miami-Dade Transportation Planning Organization (TPO) Governing Board approved the Strategic Miami Area Rapid Transit (SMART) Plan on April 21, 2016. The SMART Plan includes six (6) major rapid transit corridors (Figure 1).

The SMART Plan intends to advance six of the People's Transportation Plan rapid transit corridors, along with a network system of Bus Express Rapid Transit (BERT) service, in order to implement mass transit projects in Miami-Dade County. To ensure the SMART Plan moves forward, the TPO Governing Board directed the Miami-Dade TPO Executive Director to work with the TPO Fiscal Priorities Committee (FPC) to determine the costs and potential sources of funding for Project Development and Environment (PD&E) studies for the projects, and to also take all necessary steps to implement the SMART Plan<sup>1</sup>.

### 1.2. Project Limit

The study area for this report includes a ½ mile buffer extending beyond the Kendall Corridor. In some locations, the buffer is not exactly ½ mile due to the fact that the socioeconomic data used in this study and developed for the Southeast Regional Planning Model Version 7 (SERPM-V7) has been created using traffic analysis zones (TAZ) which do not exactly line up with the ½ mile buffer.

The corridor itself is a state-owned and maintained divided arterial running in the east-west direction in southern Miami-Dade County. Its designation is SR 94/Kendall Drive/SW 88 Street. The project limit of this study is the segment of Kendall Drive from SW 167 Avenue (MP 0.000) to US 1/SR 5/Federal Highway (MP 10.700) at the Dadeland North Metrorail Station. The length of the study area is approximately 10.7 miles. While the corridor is primarily urban, western areas are outside the Miami-Dade County Urban Development Boundary.

<sup>&</sup>lt;sup>1</sup> http://miamidadetpo.org/smartplan.asp



As reported in the Kendall PD&E – Traffic and Transit Data Collection Report, Kendall Drive is primarily a six-lane divided arterial roadway with a posted speed of 45 miles per hour (mph). The posted speed increases to 50 mph west of SW 167 Avenue. The section from east of SW 127 Avenue to the Homestead Extension of the Florida's Turnpike (HEFT) ramp terminal intersection is an eight-lane divided arterial roadway, while the section west of SW 162 Avenue is a four-lane divided arterial as shown in Figure 2 and Figure 3.

The study area of Kendall Drive has a total of 83 intersections, 38 are signalized and 45 unsignalized. There are three highway overpasses and one at-grade railroad crossing within the project limits. The Kendall Corridor also connects to several major transportation roadways, including Florida's Turnpike, SR 874/Don Shula Expressway, SR 826/Palmetto Expressway, and US 1. Kendall Drive provides access to several residential communities, major commercial centers, hospitals, and recreational facilities.

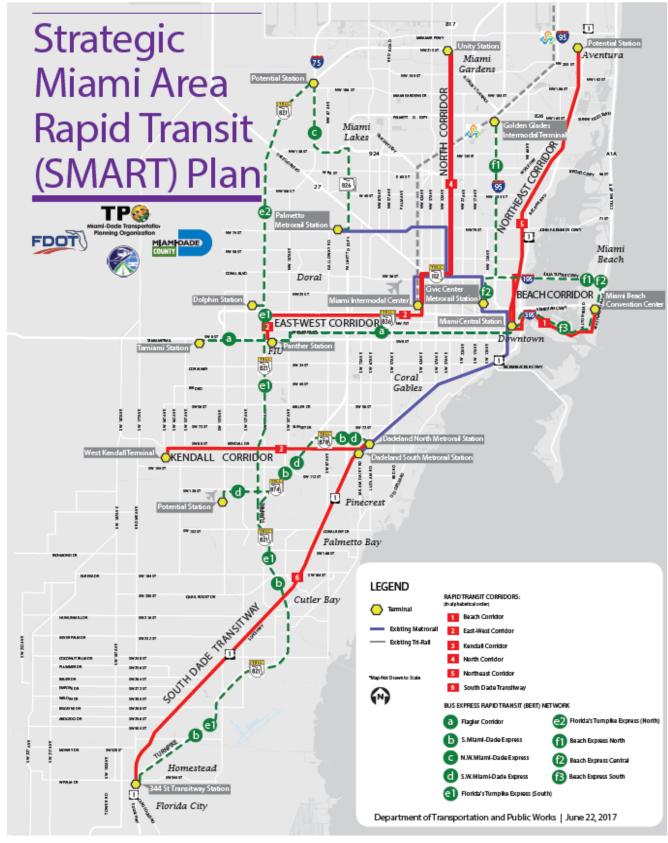


Figure 1 - SMART Plan Map



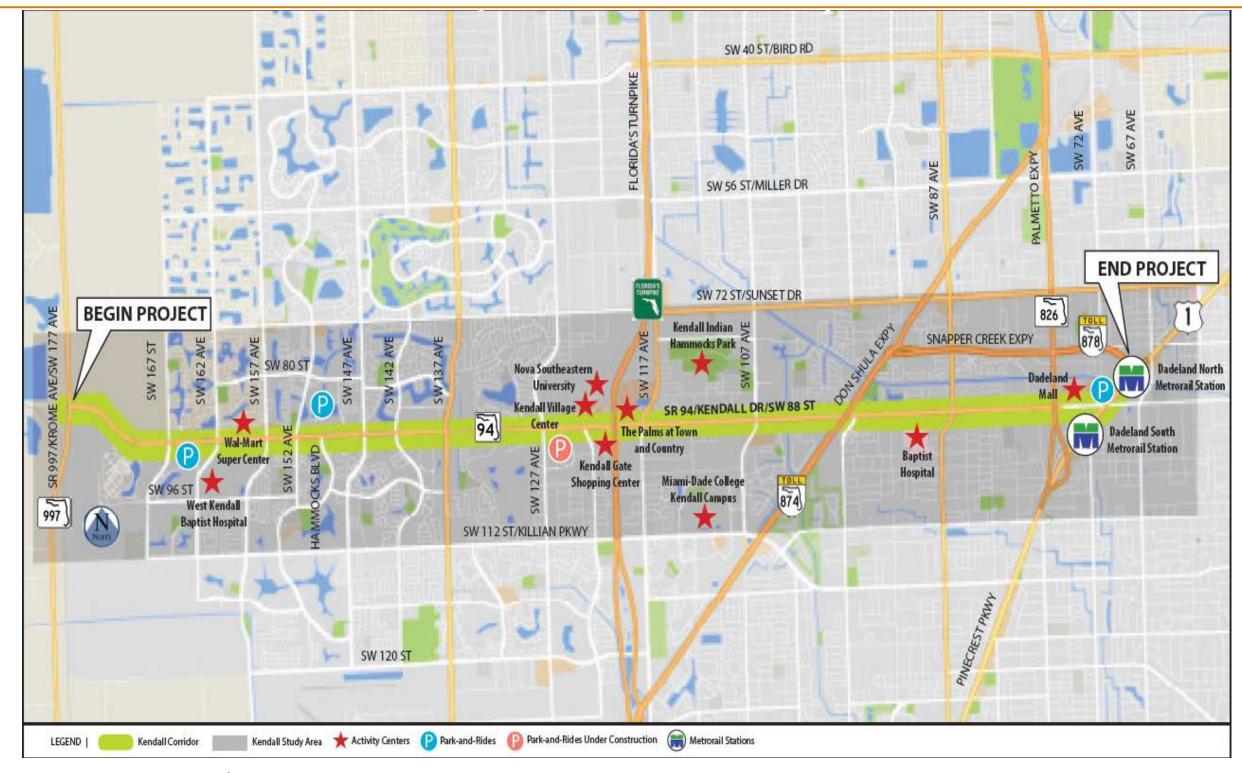


Figure 2 - Kendall Corridor Map<sup>2</sup>

<sup>&</sup>lt;sup>2</sup>http://www.fdotmiamidade.com/kendallrapidtransit.html



## **Existing Typical Sections** UNINCORPORATED MIAMI-DADE COUNTY Begin Project End Project 874 874 **PINECREST**

Figure 3 - Kendall Corridor Existing Typical Sections<sup>3</sup>

<sup>&</sup>lt;sup>3</sup>www.fdotmiamidade.com/pde-projects/pdf\_download/5830-Kendall\_KickOff\_Meeting\_Formal\_WebFinal-3.pdf



#### 2. Literature Review

### 2.1. Transportation and Land Use Planning Initiatives

Following is a listing of transit supportive strategies that were identified through regional and nationwide review of planning initiatives that focus on the transportation/land use connections and the implementation measures taken. The purpose of listing the information is to provide insight into lessons learned and to expose best practices with the intent to apply them to the SMART corridor studies. In all cases the sources are listed. Some parts are summarized, while the majority of the information is presented directly from the original report.

#### 2.1.1. Lessons Learned Regarding the Transit Accessibility and the Housing Market

The Department of Housing and Urban Development (HUD) Sustainable Communities Regional Planning Grant produced a Fair Housing and Equity Assessment (FHEA) as part of their final deliverables. Most of the data that is used in the FHEA is available from HUD or the Census and the same analyses could be beneficial for the Miami-Dade corridors. The FHEA made the recipient analyze the following component of their communities<sup>4</sup>:

- Segregated Areas and Areas of Increasing Diversity and/or Racial/Ethnic Integration
- Racially & Ethnically Concentrated Areas of Poverty (RCAPs and ECAPs)
- Access to Existing Areas of High Opportunity
- Major Public Investments
- Fair Housing Issues, Services, and Activities

The FHEA provided a historical and cultural context for current fair housing challenges, and highlighted the legacy of land-use decisions, investments, and policies that may have limited or enhanced opportunity for different parts of the region.

Community engagement was a key aspect of the FHEA process and in many cases, resulted in crucial insights about barriers to opportunity that would not otherwise have been captured in the analysis. It also brought often underrepresented groups to the decision-making table and built capacity for sustained engagement in local planning processes.

The tool helped diverse stakeholders create a comprehensive picture of the housing, infrastructure, and employment dynamics that shape opportunity in the region, and the findings informed the final regional plan as well as the decisions about implementation and investment that followed. Following are changes to the transit services and the development of tools that could be applicable to the SMART Plan Corridors.

<sup>&</sup>lt;sup>4</sup> https://portal.hud.gov/hudportal/documents/huddoc?id=HUDFHEAProSumCaseStud.pdf



Regions that have completed an FHEA have:

#### **Altered Transit Routes and Level of Service to Expand Access**

Baltimore, Maryland: Baltimore's Opportunity Collaborative is working with the Maryland Transit Administration (MTA) to strengthen connections between opportunity areas, affordable housing, and employment centers.

Lane County, Oregon: The Lane County Regional Transit Agency is now working to address scheduling and routes to better serve low income transit-dependent households based on FHEA data and findings.

#### **Revised their Transportation Funding Formula to Reflect Equity Priorities**

Minneapolis-St. Paul, Minnesota: The Metropolitan Council changed their federal transportation funding formula for the first time in over 20 years to prioritize projects that provide benefits for vulnerable populations and those in racially concentrated areas of poverty. The new equity criteria will affect about \$150 million in federal transportation funds.

#### Passed Legislation to Institutionalize Equity Lens in Local Decisions Making

Madison, Wisconsin: The City of Madison passed a resolution authorizing a participatory budgeting pilot program due to findings in the FHEA and is also developing an Equity Impact Model to assess the potential impacts of government plans and decisions.

#### **Developed Sophisticated Opportunity Mapping Tools**

Baltimore, Maryland: The National Center for Smart Growth at the University of Maryland worked with the Opportunity Collaborative to create a regional opportunity mapping analysis for Baltimore, which included a composite opportunity index derived from selected social and economic indicators (i.e. education, public health and safety, employment, etc.).

#### **Trained other Municipalities on Effective Public Engagement Strategies**

Lane County, Oregon: Towns throughout Oregon are now seeking training on the strategies developed through the Livability Lane process for engaging Hispanics and other marginalized communities. The Eugene City Council recently used these strategies to reach out to the Hispanic community for their Parks and Open Space Planning Process after the Livability Lane project demonstrated that Hispanics often feel excluded from Eugene's parks.

### Expanded the Charter of Metropolitan Planning Organization to Include Workforce Development Responsibilities

Baltimore, Maryland: The Maryland state legislature expanded the charter of the Baltimore Metropolitan Council to include both housing and workforce development responsibilities in response to the issues raised by the FHEA and the Regional Plan.



#### 2.1.2. Lessons Learned with Transit Oriented Development (TOD)

The Federal Transit Agency held listening sessions around the country to learn about what has worked and what has not worked in starting up transit oriented developments. They documented their findings which are summarized below<sup>5</sup>.

#### **Definition of TOD**

- A neighborhood or community centered around a transit station.
- A place with enough density of people and activities to use the transit station to access a variety of daily activities.
- An area which includes a mix of uses, including residential, retail, and commercial, within easy walking distance of the transit station.
- A station and a neighborhood which have good service, including good connections with other transportation such as neighborhood buses and bicycle trails.
- An area with a station surrounded by a street network which is walkable and attractive to pedestrians and bicyclist, transit riders, and bicyclists.

#### Benefits of a TOD

- A better fit of the transit service into the neighborhood.
- More people using the transit system for everyday activities.
- A more pedestrian-friendly, human-scale community that is safe, relaxing, and attractive.
- A healthier, cleaner environment as more people walk and bicycle and take public transportation.
- Preservation of farmland and green space as people use less land to live, work, and play.

#### **Identified Barriers**

- Few firms that finance development are familiar with TOD, as such with fewer bankers, financing is more expensive and harder to come by.
- TOD is design-intensive, often requiring land assembly, landscaping, and plans for supportive infrastructure such as roads or bike trails. These factors raise startup costs.
- Structured parking, and the amount of parking required per residence or per office, often raise the cost of TOD or delay implementation.
- TOD often requires holding developed property for longer terms than single-use development that is, for seven or ten years, as opposed to five, making it harder to turn a quick profit.

<sup>&</sup>lt;sup>5</sup> TOD Lessons Learned Results for FTA's Listening Sessions with Developers, Bankers, and Transit Agencies on Transit Oriented Development, U.S. Department of Transportation Federal Transit Administration, December 2005

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- Because the attractiveness of riding on and living near transit depends on the number and variety of destinations that are reachable by transit, a limited transit network limits the appeal of TOD.
- Some question transit's ability to generate new economic activity, rather than simply relocate economic growth that would occur elsewhere. This makes it difficult for elected officials to maintain the long-term perspective necessary to support a transit investment that takes ten years or more to complete.
- Neighbors often oppose high-density development near their community and it may be difficult to convince neighbors to rezone nearby land for the densities needed.

#### **Promoting TOD**

- Proactive Planning
- Local and regional entities must invest in community outreach and a master plan a signal to the development community that the public is eager for TOD. Participants stressed the need to take time to do the planning process right.
- Focus on Mixed-Use Development
- Building commercial, employment, and entertainment centers near transit stops provides an opportunity to increase the number and quality of destinations reachable by the transit network.

#### **Land Assembly**

- Preserve and assemble parcels around transit stations to facilitate eventual development.
- Public Funding
- TOD projects may be encouraged if site preparation and related startup costs are partially financed with Federal, State and local funds as part of a transit project as allowed by Federal Transit laws (Section 5302).
- One Size Doesn't Fit All. Each station's development requirements may be different, as each town or each neighborhood is different.
- Prepare For What You Need. Conduct a market analysis, then request the zoning changes to meet the market.
- Timing is Key. Current property values may be based on a lower capacity, non-transit use
   make sure the property is ready for TOD.
- Placemaking Matters. Many are willing to pay a higher market rate if improvements are visible in the environment and streetscape, such as with trees, sidewalks, lighting, etc.



## **2.1.3.** Guidelines for Getting to Smart Growth, 100 Policies for Implementation, International City/County Management Association

This report outlines smart growth principles and lists 100 policies for implementation<sup>6</sup>. It highlights and describes techniques to help policy makers put the ten smart growth principles into practice. Following is a listing of the principles and the policies.

#### 1. Mixed land uses

- a. Provide incentives through state funds to encourage residents to live near where they work.
- b. Adopt smart growth codes to parallel existing conventional development codes.
- c. Use innovative zoning tools to encourage mixed-use communities and buildings.
- d. Facilitate financing of mixed-use properties.
- e. Zone areas by building type, not by use. Use flex zoning to allow developers to easily supply space in response to market demands.
- f. Convert declining shopping malls and strip commercial streets into mixed-use developments.
- g. Provide examples of mixed-use development at scales that are appropriate to your community.
- h. Create opportunities to retrofit single use commercial and retail developments into walkable, mixed use communities.
- i. Reward communities that create a balance between jobs and housing.

#### 2. Take advantage of compact building design

- a. Use public meetings about development options to educate community members on density and compact building options.
- b. Ensure ready access to open space in compactly developed places.
- c. Encourage developers to reduce off-street surface parking.
- d. Match building scale to street type in zoning and permit approval processes.
- e. Establish model state-level design standards and codes to encourage compact building design that can be adopted by local communities.
- f. Use density bonuses to encourage developers to increase floor-to-area ratio (FAR).
- g. Ensure a sense of privacy through the design of homes and yards.
- h. Employ a design review board to ensure that compact buildings reflect desirable design standards.
- i. Offer incentives that encourage local communities to increase density.
- j. Support regional planning efforts to encourage compact communities.

<sup>&</sup>lt;sup>6</sup> https://www.epa.gov/sites/production/files/2014-01/documents/gettosg.pdf

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#### 3. Create a range of housing opportunities and choices

- a. Enact an inclusionary zoning ordinance for new housing developments.
- b. Provide homebuyer assistance through support to community land trusts.
- c. Revise zoning and building codes to permit a wider variety of housing types.
- d. Plan and zone for affordable and manufactured housing development in rural areas.
- e. Educate developers of multi-family housing units and nonprofits on the use of limited equity (or equity restriction) components.
- f. Educate realtors, lenders, and home buyers on the use of resource-efficient mortgages.
- g. Implement a program to identify and dispose of vacant and abandoned buildings.
- h. Adopt special rehabilitation building codes to regulate the renovation of existing structures.
- i. Enlist local jurisdictions in implementing a regional fair-share housing allocation plan across metropolitan areas.
- j. Give priority to smart growth projects and programs that foster smart growth in the allocation of federal housing and community development block grant (and other) funds.

#### 4. Create walkable neighborhoods

- a. Provide grants or other financial assistance to local communities to retrofit existing streets and sidewalks to promote more walkable communities.
- b. Concentrate critical services near homes, jobs, and transit.
- c. Require building design that makes commercial areas more walkable.
- d. Adopt design standards for streets that ensure safety and mobility for pedestrian and non-motorized modes of transport.
- e. Adopt design standards for sidewalks.
- f. Require traffic-calming techniques where traffic speed through residential and urban neighborhoods is excessive.
- g. Beautify and maintain existing and future walkways.
- h. Provide Americans with disabilities easy access to sidewalks, streets, parks, and other public and private services.
- i. Connect walkways, parking lots, greenways, and developments.
- j. Identify economic opportunities that stimulate pedestrian activity.

#### 5. Foster distinctive, attractive communities with a strong sense of place

- a. Modify state funding processes and school siting standards to preserve neighborhood schools and build new schools to a "community level."
- b. Create a state tax credit to encourage adaptive reuse of historic or architecturally significant buildings.

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- c. Plant trees throughout communities, and preserve existing trees during new construction.
- d. Create active and secure open spaces.
- e. Simplify and expedite permitting regulations to allow vendors to offer sidewalk service.
- f. Create special improvement districts for focused investment.
- g. Define communities and neighborhoods with visual cues.
- h. Preserve scenic vistas through the appropriate location of telecommunication towers, and improved control of billboards.
- i. Create opportunities for community interaction.
- j. Enact clear design guidelines so that streets, buildings, and public spaces work together to create a sense of place.
- 6. Preserve open space, farmland, natural beauty, and critical environmental areas
  - a. Use transfer of development rights (TDR), purchase of development rights (PDR) and other market mechanisms to conserve private lands.
  - b. Coordinate and link local, state, and federal planning on land conservation and development.
  - c. Expand use of innovative financing tools to facilitate open space acquisition and preservation.
  - d. Employ regional development strategies that better protect and preserve open space in edge areas.
  - e. Adopt a green infrastructure plan.
  - f. Create a network of trails and greenways.
  - g. Design and implement an information-gathering and education program.
  - h. Design and implement zoning tools that preserve open space.
  - i. Provide mechanisms for preserving working lands.
  - j. Partner with nongovernmental organizations to acquire and protect land.
- 7. Strengthen and direct development towards existing communities
  - a. Strengthen the state or local brownfields program.
  - b. Adopt a "fix-it-first" policy that sets priorities for upgrading existing facilities.
  - c. Institute regional tax base sharing to limit regional competition and to support schools and infrastructure throughout the region.
  - d. Use the split-rate property tax to encourage development on vacant or blighted pieces of land in existing communities.
  - e. Locate civic buildings in existing communities rather than in greenfield areas.
  - f. Conduct an "infill checkup" to evaluate and prioritize infill and brownfield sites for redevelopment.

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- g. Facilitate programs to encourage home renovation and rehabilitation in existing neighborhoods.
- h. Support community-based organizations involved in revitalizing neighborhoods.
- i. Create economic incentives for businesses and home owners to locate in areas with existing infrastructure.
- j. Modify average cost-pricing practices in utilities to better account for costs of expanding infrastructure in greenfield areas.
- 8. Provide a variety of transportation choices
  - a. Finance and provide incentives for multimodal transportation systems that include supportive land use and development.
  - b. Modify roadway level-of-service standards in areas served by transit.
  - c. Plan and permit road networks of neighborhood scaled streets (generally two or four lanes) with high levels of connectivity and short blocks.
  - d. Connect transportation modes to one another.
  - e. Zone for concentrated activity centers around transit service.
  - f. Require sidewalks in all new developments.
  - g. Address parking needs and opportunities.
  - h. Collaborate with employers and provide information and incentives for programs to minimize or decrease rush-hour congestion impacts.
  - i. Adjust existing transit services to take full advantage of transit supportive neighborhoods and developments.
  - j. Cluster freight facilities near ports, airports, and rail terminals.
- 9. Make development decisions predictable, fair and cost effective
  - a. Provide financial incentives to aid the development of smart growth projects.
  - b. Conduct smart growth audits.
  - c. Implement a process to expedite plan and permit approval for smart growth projects.
  - d. Engage political support for improved coordination on approval of smart growth projects.
  - e. Use a point-based evaluation system to encourage smart growth projects.
  - f. Remove parking from the development equation through public-private partnerships to build community parking facilities.
  - g. Encourage demand for smart growth though consumer incentives.
  - h. Display zoning regulations and design goals in pictorial fashion to better illustrate development goals.
  - i. Maximize the value of transit agency property through joint development of transitoriented development.
  - j. Incorporate by-right smart growth redevelopment into existing communities' masterplans.



- 10. Encourage community and stakeholder collaboration in development decisions
  - a. Seek technical assistance to develop a public participation process.
  - b. Use unconventional methods and forums to educate non-traditional, as well as traditional, stakeholders about the development and decision-making processes.
  - c. Conduct community visioning exercises to determine how and where the neighborhood will grow.
  - d. Require communities to create public access to tax and lien information on all properties to facilitate the rehabilitation of distressed properties.
  - e. Incorporate opinions and interests often and routinely into the planning process.
  - f. Work with the media to disseminate planning and development information on a consistent basis.
  - g. Engage children through education and outreach.
  - h. Cultivate relationships with schools, universities, and colleges.
  - i. Bring developers and the development community into the visioning process.
  - j. Hold a design charrette to resolve problematic development decisions.

#### 2.1.4. Smart Mobility with Autonomous Vehicles

The paper "Automation and Smart Cities: Opportunity or threat?" focusses on the autonomous vehicle technology and the effect this might have on public transportation in the cities. As technology is changing, cities are moving towards a Smart City model; becoming a city where information technology and the Internet of Things are used to manage and control the city. This would include the public facilities, such as libraries and utilities but also the public transit system.

#### **Smart Mobility**

There are several misconceptions associated with autonomous vehicles. These are that they will:

- reduce the number of cars in cities
- free up urban space currently used for parking
- improve overall sustainability
- reduce the number of incidents, accidents, injuries and casualties

#### Reduction of the number of cars in cities

Less cars and car movements are mainly the effect of car sharing. If autonomous transport leads to people leaving public transport, it could lead to an increase in the number of cars and car movements. According to the author, the focus of a Smart City should be on the number of

<sup>&</sup>lt;sup>7</sup> Automation and Smart Cities: Opportunity or threat?, Robert Lohmann, Sjoerd van der Zwaan



people transported per hour. A public transportation system needs to works efficiently enough to have people switch from their private vehicle into this new transit system.

#### Free up urban space used by parking

Whether vehicles are autonomous or not, they still need to be parked somewhere. Even if every vehicle driving around during the AM peak hours were autonomous and fully occupied, the vehicles would still need be stationed somewhere so that they can be called up and used. In addition, during the PM peak hours, all vehicles would need to return to the place-of-work which will result in either an extension of the peak hours or simply create additional peak hours. Often overlooked is the need for drop off and pick up lanes which will take up additional space.

Although the author makes a good point, it should be noted that autonomous vehicles will use parking differently. As it is, parking is created to allow all users the same access, but autonomous vehicles don't need to have the same access; each parking spot needs standard space to open and close doors, autonomous waiting to be called into action don't need that space. Approximately for every five regular parking spaces, six autonomous vehicles could fit; which means that 100 regular parking spots could fit 120 autonomous vehicles, decreasing parking space. Also, a parking lot designed for commercial use or for municipal circulator services, would not need to leave a lane in the middle for people in and out access since the last vehicle to enter will always be the first vehicle to leave.

#### Improve overall sustainability

It is important to not only note that not all autonomous vehicles are electric but also that the level of reduction caused by electric vehicles is dependent on the sustainability of the source of the power. If the energy is generated in a coal power plant it only moves the pollution from a mobile source to a stationary source. Energy consumption per user can be reduced by technological improvements, but the single largest effect will be the increase of occupancy. Where the average car holds just 1.1 to 1.3 passengers per vehicle during rush hour, they are even less efficient in off-peak hours because they will be on the streets continuously.

One of the points not made by the author is that even though autonomous and non-electric vehicles would still need gas, it will be increasingly less because an autonomous vehicle will find the best and fastest route based on GPS and traffic information. Also, autonomous vehicles will use electricity, and most of the electrical plants run nuclear, not coal. However, even if it is coal, it will cause less pollution than the process crude oil has to go thru before people can fill up their tanks. This does not account for the daily gas spills in gas stations all over the states, which filter to the ground. In addition, some research foresees the use of solar panels to charge future electrical autonomous vehicles, which will have nearly zero carbon footprint.

Reduce the number of incidents, accidents, injuries and casualties





Autonomous driving only has a positive effect on road safety if all traffic becomes autonomous and the entire infrastructure is organized around it. Until then, driving autonomously will most likely lead to more incidents. The author makes this statements based on two points. One that the autonomous vehicles do not always interpret the situation correctly. Such as sudden lane changes from other drives can trigger an unnecessary emergency braking procedure from an autonomous vehicle. Secondly, autonomous vehicles drive safer than the average driver. Typically responding earlier to an event than a human being. This will more than likely lead to additional accidents.

To add to this discussion, currently Tesla has 1.3 billion autonomous miles. The national average is 1 crash for every 16,550+ Miles<sup>8</sup>. Tesla based on the NHTSA report shows 0.8 per million miles<sup>9</sup>. That implies a reduction in the amount of accidents. Also it is important to keep in mind that current Tesla software is not capable of fully autonomous, when they are, crashes will be virtually zero caused by a Tesla. Of course, someone else can run into an autonomous car with a regular non-autonomous car and that is inevitable.

#### Conclusion

In the end, the most important thing is to discourage people from using a personal car and to start using public transit. Often the concepts of automated, shared, and electric vehicles are confused. The automated vehicle doesn't reduce the amount of cars, ride-sharing does. It won't make the city more sustainable, only electricity from a sustainable power source will.

## **2.1.5.** Public Transportation, Land Use, and Incentives; the Effect of Policy Strategies

This research was conducted by the Planbureau voor de Leefomgeving (PBL) or translated the spell out Netherlands Environmental Assessment Agency<sup>10</sup>. This agency conducts analyses and evaluations in which an integrated approach is considered essential. Policy relevance is the prime concern in all their studies. The study and SMART model (Strategic Model for Analyzing Regional Transport) provide insight into relationships between land-use, transit service, and public policies.

The research focused on the possibilities and effects of three policy tools available to influence the transit ridership numbers:

• Intensification of land use development patterns

 $<sup>^8</sup>$  https://www.fhwa.dot.gov/ohim/onh00/bar8.htm and http://mashable.com/2012/08/07/google-driverless-carssafer-than-you/#yTTc2Ublhgqn

<sup>9</sup> https://static.nhtsa.gov/odi/inv/2016/INCLA-PE16007-7876.PDF

<sup>&</sup>lt;sup>10</sup> http://www.rivm.nl/bibliotheek/digitaaldepot/Publicatie\_OV\_en\_ruimte\_Web.pdf



- Improvements to the public transit system service
- Incentives to entice a switch from the private automobile to public transit

The focus is on the transit ridership numbers because an increase in transit ridership will improve mobility as a whole. Using all three tools can influence the choice of the transportation mode (car, pedestrian/bicycle, and public transit). The research was conducted to measure the effect of these three policy tools on transit ridership.

#### Land use

In the paper several components of land use are discussed. Important to transit use is access and egress. The use of transit is much higher among people who live near a transit station than those that live farther away. However, the transit rider is even more influenced by the ability to reach the destination (place-of-work). This is explained by the fact that there are more mobility options (car, bike) at the household side. Three place-of-work locations were distinguished in this research, those near a transit station with local transit routes, those near an intercity transit station which typically focuses on car access (park n ride), and those near the interstate.

#### **Public Transportation**

In public transportation, the focus is usually on the more profitable/higher use routes/services. These run in the peak hour and usually represent the longer work trips. As congestion on the roadway during the peak hours increases, the ridership provided by these types of services increases. In response, the transit agency improves the service, which typically results in an increase in demand. However, in the long term the question will arise if the service can be sustained based on the capacity of the transit service itself (capacity of bus or rail line) as well as the network capacity (roadway congestion, number of rail lines).

In the analysis, both the land uses and the transit service was intensified. In the first scenario, there was an increase in the number of routes and stations, and in the second scenario there was an increase in the frequency of service on all the existing routes. However, the complexity lies in the fact that if land use densities and increase accessibility to the system is improved, the additional stops/stations increase the travel time. The loss in travel time can be offset by increasing the service/reducing headways. However, research has also indicated that the traveler is more concerned about the access and egress time than the actual travel time emphasizing the importance of the pedestrian and bicycle network surrounding the transit stops and stations.

#### Conclusion

In the research a SMART model was used to analyze the effect of the different changes. The results of the analysis was that both alternatives caused an increase in the use of public transit but it did not cause a significant shift from one mode to another. The argument the author makes is that even though increasing densities around stations supports the transit system and



increased transit services supports the intensified land uses, these changes have a greater effect on shorter distance trips than on the longer trips. In order to have a real impact on mobility a true shift in mode needs to occur. Based on the analysis, in order for this shift to take place monetary incentives are necessary. In the Netherlands the cost of using the automobile are likely to increase when levied on vehicle miles traveled. Other mechanism are an increase in parking cost and/or a decrease in transit cost.

#### 2.1.6. Chain Mobility

Chain Mobility entails communication between transit systems which will allow for a seamless transfer from one vehicle/mode to the next. Automated people movers fit well in a chain mobility approach and there are three in existence that do not need physical guidance<sup>11</sup>.

Five characteristics can be used to distinguish between the different automated systems:

- <u>Transportation Concept</u> The transportation concept relates to the number of passengers per transportation unit. A distinction is made between:
  - o Personal Rapid Transit (PRT): typically 4 to 6 passengers per unit
  - o Group Rapid Transit (GRT): between 8 and 30 passengers per unit
  - Mass Rapid Transit (MRT): over 30 passengers per unit
- <u>Type of Guidance</u> The type of guidance heavily influences the infrastructure which has a big impact on the surroundings. The current main categories of guidance are:
  - o Rail guidance: vehicles are guided by a single or multiple rails
  - Infrastructure/Cable guidance: vehicles are guided by infrastructural elements (e.g. walls) or a cable.
  - o Free ranging: vehicles guide themselves while reference points are used for position verification.
- <u>Suspended or Supported</u> Suspended systems are elevated because at grade is not possible
  and underground would lead to very high costs. Supported systems, however, are not all
  limited to a single level of implementation. Systems that are implemented at grade can also
  be elevated by simply raising the infrastructure. This flexibility can be necessary when at
  grade operations is not possible in a densely built area. The most cost effective system is at
  grade.
- <u>Development Stage</u> The development of automated transportation systems can be in different stages. Some systems have been implemented and are operational at multiple locations already, while others only exist on paper awaiting further research or funding.
- <u>System Capacity</u> System capacity determines in which situation a concept is applicable. The system capacity is determined by the capacity of a single unit, operational speed and

<sup>&</sup>lt;sup>11</sup> The Blueprint for Chain Mobility, Robbert H.C. Lohmann,

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minimum headway between vehicles, number of stops and delays at these stops, acceleration and deceleration.

Another important factor in identifying the right type of system is related to the type of demand. When analyzing the demand it is important to distinguish between three categories:

- <u>Spreading in Time</u> Indicates whether or not people arrive together at a certain transit point, such as a rail station. All travelers arrive at the station when the train arrives and they have to be transported further by means of another system.
- <u>Spreading in Space</u> Indicates whether it is possible to travel to different locations with the same mode. Spreading in space typically results in intermediate stops; the system will stop at other stops before arriving at the designated stop of the traveler.
- <u>Activity Density</u> The activity density relates to how many people want to travel to the same spot. Typically the city center has a high activity density because a lot of people want to travel to it.

MRT is especially suited when there is high activity density. Although PRT and GRT systems are able to handle a high activity density, they are not capable of offering the same capacity as MRT.

GRT is functional when there is little spreading in time and people arrive in groups. The spreading in space and the activity density are preferably moderate, but some GRT systems are able to handle low and/or high spreading in space and/or activity density as well. Hence the GRT system will in some cases compete with both PRT and MRT systems.

PRT is suited for applications with a high spreading in time as it delivers on-demand service. Multiple destinations and spreading in space are not an issue but do require the infrastructure to those destinations. PRT is known to be able to handle a relatively large number of people per hour, but when there is little spreading in time a GRT or MRT will quickly become more efficient.

In the Netherlands three concepts using the same basic technology have been developed: Phileas (MRT), the ParkShuttle (GRT) and the CyberCab (PRT). In comparison to other automated transportation concepts, these are distinctively different for several reasons:

- The concepts are electronically controlled, not guided by rail or other infrastructure elements.
- The concepts are complementary to each other each specifically suited for a different link of the chain.
- The concepts use the same vehicle software and can be controlled by the same supervisory control system.
- The supervisory control system can communicate with any other information system to import/export data 'real-time'.

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The three concepts have a "Frog Inside" the navigation technology first developed nearly 20 years ago by Frog Navigation Systems and applied in many industrial indoor and outdoor applications since. With Frog Inside the vehicles navigate and by means of the supervisory control system SuperFROG, the different systems can be synchronized amongst each other.

The ParkShuttle vehicle can be compared to a mini-bus. It operates on predefined routes in the network, stopping only at those stations where people request to be picked up. The ParkShuttle accommodates 12 seated passenger and an additional 8 standing passengers. The maximum speed of the ParkShuttle is 40 km/h. The system environment will determine the actual operational speed of the vehicles.

The CyberCab can be compared to an automated taxi. It is fully flexible, capable of stopping anywhere, picking up passengers and transporting them directly to any destination, via the shortest route in the network. The CyberCab seats 6 passengers while standing passengers are not accommodated to increase the safety of the passengers. The maximum speed of the CyberCab is 40 km/per hour.

The Phileas resembles a bus. The Phileas is available in an 18 meter single articulated version for 152 passengers and a 24 meter double articulated version accommodating 205 passengers. The Phileas can be operated in three different modes: manually, semi-automatic and automatic. In manual mode the driver controls both the speed and the position of the bus, while in automated mode these are both controlled by software controls. The routing is characterized by straight lines with a limited number of stops (2 to 3 per mile), a high average speed and a large capacity. It will be able to achieve the best performance by:

- Offering as many dedicated concrete lanes as possible
- Adapting pavement height a platforms to 320 mm or 12 inches
- Offering dynamic information systems at the stops, which can be updated real-time
- Keeping the number of stops to a minimum but turning normal platforms into transfer station

#### **Chain Mobility**

To improve the transportation chain it is important that the systems are interconnected and waiting times are minimized at transfer points. By using the same supervisory control system, synchronization can be achieved throughout the system allowing to connect the whole city.

Within a public transportation network such as this, the Phileas would connect satellite cities, suburbs and other more remotely located areas with a relatively high activity density with the city center. The ParkShuttle would serve in a network in those locations, satellite cities and suburbs, as a feeder towards the Phileas. Finally, the CyberCab would operate in the inner city, directly connecting the most important locations – such as downtown business parks, financial



districts, shopping and entertainment venues and public transportation nodes. Figure 4 reflects the described system.

#### Conclusion

Mobility growth requires a balanced approach as it contributes substantially to the economy, but also has a negative impact on the environment through the traffic it generates. Trips per automobile normally require only short first-and-last-link sections. By taking a chain mobility approach to the transit system, these first-and-last-link sections will get the attention they deserve.

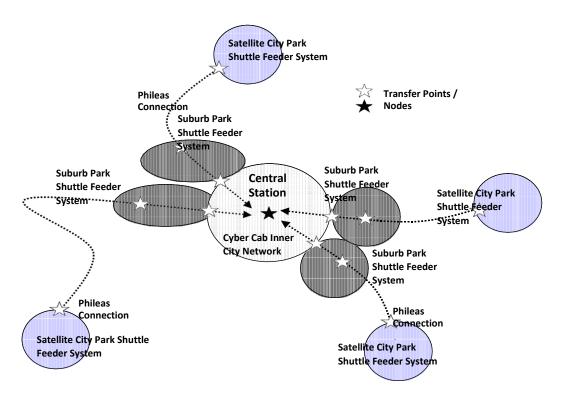


Figure 4 - Chain Mobility

#### 2.2. Envision Utah Process

As part of the SMART Plan Corridor Inventory Study, the Envision Utah program was reviewed and summarized in this memo. The intent of the review is first to familiarize ourselves with the program, and second to summarize those parts of the program which are applicable in the Miami-Dade area and particularly in the six SMART corridors currently being studied.

Envision Utah started in 1997 as an effort to address the challenges of the rapid growing population while preserving the community's high quality of life, protecting the environment, and supporting economic growth in the region of Utah. The Envision Utah public/private



partnership was developed to provide the people with the tools necessary to create the communities they envision for the future. Through extensive research, and public involvement, Envision Utah was created to provide different tools, strategies, and locally-implemented, market-based solutions to preserve and create beautiful, vibrant, and prosperous communities. Geographical Information Systems (GIS) and services were acquired to build future growth models and tools for analysis. The estimated cost to develop these tools was \$500,000. These tools became known as QGET, or the Quality Growth Efficiency Tools.

#### **Community Involvement**

Community involvement played an important role in the development of Envision Utah. Through citizen's interviews and community workshops citizens were engaged, needs where identified, and a process was developed to address Utah's growth challenges. The feedback received from citizens led to the following guidelines:

- Create an ongoing process that can be repeated and updated over the years to address growth challenges.
- Identify representatives from both the public and private sectors who are willing to work toward the common good.
- Design a group that is manageable in size and represents as many segments of the community as possible.
- Develop several alternative scenarios as choices for future growth.
- Complete a baseline report projecting how the area will grow without changes in the current growth trends.
- Design an effective technical model to create and analyze a baseline and alternative scenarios.
- Provide area residents with an opportunity to be involved in the process, be able to assess the results, and make decisions about how the area will grow.

#### **Funding**

Funding was secured through the education of House and Senate members, as well as individual legislators, on the importance and need to develop GIS tools to model and analyze future growth projections. Initially \$250,000 was approved for the development of QGET by state legislature. Since 1996, an estimated \$1,000,000 of state funding has been approved to support research and analysis of growth issues through the Governor's Office of Planning and Budget (GOPB).

Private nonprofit organizations have played an important role and were a significant source of funding in the creation of Envision Utah. Besides providing the initial seed-money, they offered a \$1.5 million matching challenge grant at the kick-off meeting, and to this date have contributed a total of \$1.7 million to Envision Utah.



Envision Utah has been very successful raising money to match private funds from other foundations, local business, and individuals. They have also secured competitive federal grants through the US Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA).

#### <u>Implementation</u>

The development and implementation were the result of joint efforts from public and private partnerships. All stakeholders, including political leaders, religious leaders, developers, community leaders, and the general public were engaged in order to find financial support from public funding and private organizations. Based on the Envision Utah experience, the following steps should be taken into consideration when developing this type of program in a community:

- Identify a region-specific problem or challenge.
- Identify representatives from both the public and private sectors of the community who would be willing to work toward the common good.
- Develop a clear vision and goals for the program.
- Develop a process that would help solve the problem. This should be a joint effort from all stakeholders, political leaders, community leaders, and general public.
- Identify resources needed to fund the project.
- Create project awareness by educating public officials and the general public on the project.
- Apply for state and federal funds, as well as private organizations grants.
- Keep all interested parties informed about how the program is doing. This includes using the media to highlight programs' projects, progress, and future improvements.

#### 2.2.1. Envision Utah – Tools, Guidelines, Policies & Strategies

Following is a listing of the tools, guidelines and strategies used in the Envision Utah toolbox. The tools box on the Envision Utah website lists the following tools:

<u>Envision Tomorrow Plus (ET+)</u> – an open-access scenario planning package that allows users to "paint" development scenarios on the landscape and compare scenario outcomes in real time

<u>Form-Base Code</u> – a zoning technique that considers the characteristics of a particular place and implements the vision for that place

<u>Housing & Opportunity Assessment</u> – provides new demographic and economic information for every city and county along the Wasatch Front

<u>Implementing Centers Forum</u> – assists in determining potential development barriers and strategies to address them

<u>Economic Development</u> – addresses approaches to economic development





<u>Brownfield Redevelopment</u> – a step-by-step guide to outline a typical brownfield redevelopment process

<u>Wasatch Transit Oriented Development</u> - a comprehensive framework for understanding, designing and implementing transit oriented development

<u>Urban Planning Tools for Quality Growth</u> – a guidelines to assist communities as they plan for the future through various types and stage of development

<u>Regional Visioning Guidebook</u> – a guidebook proving guidelines to following in a scenario planning process.

All tools, with the exception of the Brownfield Redevelopment, are summarized in the following paragraphs.

#### Envision Tomorrow Plus (ET+)12

Basically, Envision Tomorrow Plus is an ArcGIS extension tool that allows users to conduct scenario analysis, analyze their own key priorities, and understand the full impacts of scenarios. In addition, since ET+ is developed as an open-source scenario analysis tool, users can download the software anytime and use it within the ArcMap program. Two primary Microsoft Excel spreadsheets – the Building Prototype Builder and the Scenario Spreadsheet – are linked with actual painted scenarios and play a role in showing the outputs of each scenario in a comprehensive and visual way.

Second, Envision Tomorrow Plus is a versatile and expandable tool that can easily be adapted to accommodate various uses. Unlike most planning software, Envision Tomorrow allows the user to easily and transparently change the assumptions of the prototype buildings, development types, and scenario inputs. By making the tool transparent, you can quickly and easily adjust the assumptions to more accurately reflect the dynamics of your particular neighborhood, city, or region. This transparency allows planners to adjust assumptions in the scenario process if necessary.

Third, by using nationwide and recent datasets, ET+ is developed based on many separate apps and produces indicators as evaluative outputs of each scenario. As a series of models, apps are linked onto ET+ frame, and indicators help users evaluate their own scenarios on a real-time basis. Also, the main goal of ET+ is to incorporate cutting edge analysis in all aspects of planning – for example, private and public sector economics, transportation and housing planning, environment and sustainability, quality of life, and affordability.

Lastly, operating ET+ begins with creating various prototypes for scenarios, so the spatial range of ET+ can cover from buildings to regions. This means that users can customize any prototypes

<sup>&</sup>lt;sup>12</sup> <a href="http://www.envisionutah.org/images/wc2040/etplusfiles/Envision\_Tomorrow\_Plus\_Users\_Manual.pdf">http://www.envisionutah.org/images/wc2040/etplusfiles/Envision\_Tomorrow\_Plus\_Users\_Manual.pdf</a>, page 2.

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according to the spatial scope of the target site. For example, users may use various building prototypes for neighborhood or district development projects. For city-level or regional-level development, block-level or even county-level prototypes can be used.

#### Form-Based Code

Form-based code (FBC) is a zoning technique that combines different components to create pedestrian friendly communities, vibrant neighborhoods, enhance community interaction, and encourages use of mass transit systems. FBC assigns street layout and building types based on the characteristic of the individual site. Factors such as proximity to arterial streets and surrounding neighborhoods' land uses are taken into account to create cohesive neighborhoods. The main characteristics of FBC are:

- Focus on the way buildings interact with the streets
- Codes define the form and general appearance of buildings as a primary concern and consider land use as a secondary concern
- Codes are developed based on design elements
- Encourage mixed uses and promote walkable communities
- Identify place specific regulations/not a one-size fits all
- Built based on community reference
- Highly illustrative documentation
- Levels of control are set by site/customizable approach

The first most important step in the process is to determine a clear and defined vision for a district, neighborhood, or corridor. The vision should be a result of a joint effort between citizens, stakeholders, developers, community leaders, and general public. Once the vision has been developed, a regulating plan should be drafted and adopted. A regulating plan is a fine-grained zoning map combined with a street plan, accompanied with a set of standards. Each street, block, or parcel must comply with illustrated standards in the FBC. Among the different types of standards associated with a regulating plan are:

- Frontage Types
- Building Types
- Parking
- Landscape
- Public Space Standards
- Architectural Standards

#### **Housing & Opportunity Assessment**

The Housing & Opportunity Assessment tool was developed to provide new demographic and economic information for every city and county along the Wasatch Front. It summarizes and



visualizes the housing market and particularly the affordable housing market. In Utah, it is based on a summary of Fair Housing and Equity Assessment (FHEA) required from the recipients of a Sustainable Communities grant.

An FHEA is comprised of three key elements: (1) data, (2) deliberation and (3) decisions.

- Data the data element is the most time intensive. HUD divides this element or task into five key areas of inquiry for each entitlement jurisdiction: (1) Segregation trends in the spatial concentration of minority populations across cities and census tracts within the region, (2) Racially and Ethnically Concentrated Areas of Poverty (RCAP and ECAP) identification of locations of minority households living in poverty, (3) Disparities in Opportunity analysis of data on education, access to the transportation system, proximity to employment centres, housing affordability, shortages of healthcare, food deserts, etc. (4) Fair Housing Infrastructure discussion of the procedure and process cities have in place for adjudicating housing discrimination complaints and (5) Physical Infrastructure Investments an analysis of current and future impacts on access to opportunity of investment in freeway/highways, light rail/street car lines, fixed bus routes, recreation trails, large commercial development, hospitals, etc.
- Deliberation Key groups engage with the findings of the FHEA. Key groups are: entitlement jurisdictions, MPOs, COGs, school districts, public health departments, transit agencies, housing authorities, fair housing organizations, economic development agencies and housing finance agencies. In addition the findings should be shared and discussed with communities of color, immigrant communities and other underrepresented communities to include their views on barriers to their opportunities and aspirations.
- Decisions HUD refers to this element of the FHEA as the Bridge. A city or county uses
  the findings of FHEA and the results of deliberation to set priorities and develop a
  measurable action plan to enhance equity and access to opportunity and mitigate
  impediments to fair housing choice.

In Utah, the FHEA has been approached as a process to develop and participate in a regional vision that integrates housing, economic development and capital investment decisions. This way, the FHEA informs a city's scenario planning and introduce issues of equity into the discussion of new investments, planning and policy. Findings of the FHEA are planned to be incorporated regionally through Regional Transportation Plans and the planned state-wide Quality Growth Strategy of Envision Utah.

#### **Implementing Centers**

There are many barriers to developing higher-density, mixed-use centers and corridors. Market demand, environmental and physical constraints, current zoning and land use regulations, as well

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as public infrastructure capacity often produce these barriers, making desired development costly, difficult, or impractical. The Implementing Centers tool can help communities determine potential development barriers and provide strategies for how to address them.

The tool is based on several pieces that are used together to produce actionable reports for a community to follow in order to implement their vision. The Community Guidebook <a href="http://208.82.222.83/flipbook">http://208.82.222.83/flipbook</a> pub/Wasatch 2040 Community Guidebook/default.html allows users to better understand the community development process while also providing a user-friendly method for assessing and documenting current conditions. The guidebook outlines the seven principle of community of development:

- Understand the development context
- Leverage development opportunities
- Engage the community and form partnerships
- Identify development barriers
- Manage the issues, barriers and risks
- Establish a development-friendly environment
- Understand the costs and benefits

Following the seven principles, the user can use the guidebook as a check list to address barriers and identify potential implementation and financing strategies. The ultimate goal would be to produce a plan of action for the community to follow in order to become more development friendly.

The Market Analysis report provides a regional market perspective of the Wasatch Front, while also providing site specific reports for catalytic sites throughout the region. The document also provides a market analysis methodology that communities can follow to produce their own report to better understand their current market conditions.

Analysis of local transit station areas in the Demonstration Site Analysis report provides examples of common barriers to development and can be used as a template for reporting this information. By identifying the barriers to development and understanding strategies to address them, communities can recognize their role in creating opportunities for higher density, mixed-use development and implementing the Wasatch Choice for 2040 vision.

#### Transit Oriented Development Guidelines

Transit-Oriented Development (TOD) is a type of community development that focuses on land uses around transit stations or within a transit corridor. TODs are characterized by; encouraging mixed-use land development patterns, moderate to high intensity densities, pedestrian orientation and connectivity, transportation choices, reduced parking, and high quality design. As a general rule of thumb, housing units, office, retail, and other daily amenities are located



within ¼ mile, or a 5-7 minute walk of a transit station. This type of compact development reduces vehicle dependency and creates environments that encourage people to walk, ride bicycle, and use mass transit.

Following is a summary of the basic features of a TOD as outlined by Envision Utah<sup>13</sup>.

#### • <u>Compact Development</u>

TODs are built compactly within a walking distance (approximately ¼ to ½ mile) of transit stations so as to provide a base of transit riders to support the transit systems. The minimum residential net density of 30 units per acre is preferred in urban areas, and 9-12 in suburban areas, while intensity should gradually build up closer to the station.

#### Mix of Uses

TODs include diverse and complementary high-activity uses such as retail, professional services, housing, and employment centers adjacent to transit. The center of a TOD contains a diversity of uses, including convenience retail and services, small offices, day care, and civic amenities such as libraries and post offices.

#### • Pedestrian-Friendly Design

TODs should create pleasant and enjoyable urban places that make walking an attractive, preferred travel option. Traffic calming devices such as curb bulb-outs can also help to create a feeling of pedestrian safety and comfort. TODs contain an interconnected network of streets that enhance accessibility between transit stops or station areas and the adjacent commercial, community, and residential areas.

Envision Utah applied TOD to different context areas. More specifically, they specified TOD by place, development type, transit type, and based on economic analysis.

#### TOD by Place

The development opportunities vary by sale and pattern depending on the location of the TOD. The key to successful implementation of the TOD is to correctly identify the appropriate scale and work with the community to develop an intensity of use that relates well to the surrounding area. The places that are identified by Envision Utah are as follows:

- Urban Core
- Urban Neighborhood
- Suburban Town Center/Community Hub
- Suburban Employment/Retail Center
- University or Institutional Campus
- Park-and-Ride

<sup>13</sup> http://www.envisionutah.org/tools/wasatch-front-transit-oriented-guidelines, page 18



#### TOD by Development Type

Existing vacant or underutilized sites with potential for large-scale redevelopment can be transformed into TODs. In addition, places that have reached the end of their "economic cycle," such as older shopping malls or obsolete industrial areas lend themselves for TOD. The specific areas identified by Envision Utah are:

- Redevelopment of an Inner Suburban Strip Mall Site
- Incremental Infill/Neighborhood Revitalization
- New Growth Areas

#### TOD by Transit Type

TODs differ based on the type of transit that is available. Transit features such as frequency of service, station spacing and road-sharing versus separate right-of-way concerns all shape the appropriate characteristics for TOD. In addition to these types, TOD planners should consider the intermodal possibilities where different transit types come together. Types of transit services discussed are:

- Light Rail
- Commuter Rail
- Rapid and Feeder Buses

#### **TOD Based on Economic Analysis**

Successful TODs will occur when there is a synergistic relationship between a locally appropriate public regulatory framework and the private market forces. All items should be analyzed in an effort to establish the appropriate site for the TOD. Specific areas of consideration are:

- Regional Economic and Demographic Trends and Projections
- Local real Estate Market Conditions
- Specific Opportunity Sites

During the process, Envision Utah established the ideal TOD planning area and land use composition. The idea behind the TOD is that it is a pedestrian-oriented district. Barriers and isolated areas do not lend themselves well for a TOD. However, these issues can be overcome by recognizing the limitations of the site and by maximizing connections where possible.

Most desirable are mixed-use core areas comprising of a ¼ mile walking radius around a transit station. These mixed-use core areas typically have a high intensity of land use as well as a variety of land uses. This combination will generate street activity which will spur economic development. In addition to the mixed-use core, it is important to have properly designed areas surrounding the core. The area up to a mile from the core should ideally contain residential as

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well as employment sites. Another consideration for the land use within the TOD is open spaces and civic land-uses. These types of land uses provide opportunities to foster community life.

Last but not least is the make-up of the housing choices themselves. TODs work best if the housing market in the TOD contains a variety of choices. Expanding housing choice implies ensuring both a range of housing types (single family and multi-family, large units and small units, units with and without parking, mixed-use projects and exclusively residential projects) and a range of price levels. To a great extent diversity of housing types and transit proximity alone can promote housing affordability without separate housing subsidies. Smaller units in multifamily projects are more affordable than larger units or single-family houses, particularly when parking is unbundled, and not included in the cost of a housing unit, but sold separately. True transitoriented development can also help reduce household transportation spending, freeing up more money for housing expenditures.

One of the goals of the TOD is to provide a circulation system that encourages connectivity between all locations and the transit hub. Following are guidelines or areas of emphasis that Envision Utah established to enhance the circulation in a TOD.

- Plan for accessibility rather than mobility
- Provide for all transportation modes, don't lose sight of the network's regional significance
- Connect street systems linking transit to the rest of the TOD
- Promote small block sizes which will limit parcel size, forcing smaller build footprints and increasing street variety
- Provide traffic calming visual cues that force motorists to slow down
- Apply appropriate roadway standards in defining the character and livability of a neighborhood
- Build sidewalks to develop a pedestrian circulation system
- Create a safe and direct bicycle network
- Encourage alleys to enhance the pedestrian network by moving the loading services and garages to the rear of homes
- Provide off-street trails, bicycle and pedestrian pathways as a safe and attractive place to walk, jog or bicycle for commuting and recreational purposes

The second goal is to obtain an urban design that reinforces the pedestrian-oriented and transitsupportive character of the district. Good urban design will have a positive effect on the walkability, street activity and economic health of the TOD.

Urban design aspects should:

- Encourage pedestrian and transit use
- Promote street activity and economic health

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- Create the appropriate urban grain
- Apply site and building design strategies
- Create street oriented building placement
- Develop visible and accessible entries
- Provide architectural variation
- Create transparency
- Enforce compatible height, massing and style
- Encourage streetscaping
- Create civic plazas at transit stations
- Develop landmark features

#### Station design aspects should:

- Promote connection to adjacent spaces and buildings
- Provide station amenities
- Develop transit stations as community landmarks
- Design parking and loading areas

The third goal is to balance parking supply and demand in a manner that reflects the presence of transit and to minimize the visual effect of parking. In a TOD, the parking supply should accurately reflect the transportation alternatives that are present. Also, the visual impact of parking should be minimized. Policies should be implemented to not only address the supply of parking but also the demand through the use of incentives and special programs. Several of these policies are discussed in the TOD guidelines. Following is a summary.

#### Parking Minimum and Maximums

 Realistic parking maximums in TOD zones reflect neighborhood parking demand and encourage land area to be efficiently used for developed or open space, rather than for asphalt fields. Parking maximums, in combination with reduced parking minimums, can prevent an unnecessary oversupply of parking, and are an integral aspect to successful TODs.

#### **Shared Parking**

- Shared parking recognizes that different land uses, including multi-family, mixed-use, office, retail, and entertainment and transit uses, routinely experience peak parking accumulations at different times of the day, week, or season.
- Parking spaces not occupied by one use at a given time can accommodate another nearby use at that time.
- An interrelationship between adjacent land uses not only increases the vitality of businesses but also results in lower parking demand.

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- The following steps help determine shared parking rations for mixed-use districts.
  - Start with municipal parking standards for each building type which uses the shared parking arrangement.
  - Determine the parking demand for each building type for key times when parking conflicts are most likely to occur, e.g. weekdays and Saturdays at 10 AM, 1 PM, 4 PM, 8 PM and 10 PM.
  - o Determine the aggregate parking demand for these key times by summing the demand of the various land uses for each key time.
  - o Determine the minimum shared parking space requirement by noting the largest of the aggregate parking demand figures.

#### **District Wide Parking**

- District-wide parking may consist of a series of public parking structures or lots. In place of each development project having to provide an individual parking lot for its patrons, parking is consolidated at a few locations.
- The siting of district-wide parking facilities is important to their success. Districtwide parking is most appropriate in town and village centers near the transit station. Parking lots should not be on the main street, but nearby enough to be convenient for people to reach servicing establishments. Public parking areas located in block interiors minimize their visibility from town center streets. Surface parking lots broken up into several smaller lots throughout a district also minimize the visual impact of parking. However, visible signs throughout the district should direct users on its location, availability, and for whom the parking lot is intended so that customers are not driven away because they can't find parking.
- In a district-wide parking arrangement, all parking in the TOD project area could be owned and managed by a single entity such as a parking authority.

#### Parking Structures and On-Street Parking

- Structured parking reduces the amount of land needed for each parking space, this is especially important adjacent to transit stations.
- On-street parking increases the number of available parking spaces without creating the negative land use of a parking lot, while maximizing developable areas.
- Allowing on-street parking provides one method of achieving lower design speed.

#### Car Sharing

- Car sharing arrangements enable people to enjoy the benefit of access to a car without the hassle of ownership.
- Car sharing reduces auto ownership levels, and reduces parking demand.



#### **Parking Pricing**

- Employers might increase parking charges for drive-alone commuters or reduce parking charges for carpoolers and vanpoolers.
- Employees can be given the option of "parking cash-outs," that is, trading in their free parking space for transit subsidies if they choose not to use the space.
- Parking can be financially "unbundled" from other land uses like housing, to create a separate market for parking in which people pay for parking separately from other uses.

#### Other Transportation Demand Management Strategies

- Employee Transportation Allowances
- Preferential Parking
- Workplace-based carpool programs
- Shuttle services

#### Implementation

In order to make all the parts work together, implementation needs to be approached holistically. Several mechanisms for implementation, as outlined by Envision Utah, are listed in the following paragraphs. Most importantly, a TOD should be planned for as a district, rather than an individual development. This will maximize the linkages and synergies throughout an area. As an example, communities along a transit line may partner to create TODs in neighboring jurisdictions that enhance one another through complementary land use destinations, and not compete for the same retail opportunities to the detriment of both. TOD areas should also recognize their regional role in accommodating new growth, so as to work with other areas that are appropriate for lower levels of growth and greater levels of land preservation. In addition to helping ensure the functional success of TOD projects, good planning serves as an incentive to developers by reducing uncertainty and streamlining the process necessary for bringing projects to completion. Developers have cited the existence of a good plan, along with public infrastructure improvements, as among the most important factors in their decision to commit to a project. Communities that proactively plan for TODs will more easily attract transit investments because transit supportive land uses are already in place. Following are four mechanism to assistant in the implementation process of TODs.

#### 1. Comprehensive Planning

Important elements to focus on in the comprehensive planning process are as follows:

- Appropriate building types
- Phasing
- Public investments



#### 2. Transit-Supportive Zoning and Land Use Policies

Local governments should carefully consider how their zoning and development codes either limit or accommodate station area development activities. Often existing zoning works against the very development types that create a successful TOD district, such as mixed-use areas, dimensional requirements that allow for compact, pedestrian-friendly development, or lowered parking requirements.

Goals of a TOD ordinance should be to:

- Support higher development intensities
- Allow mixed land uses
- Minimize distance between destinations

Some common ways that zoning regulations can achieve station area objectives include:

- Creating a transit overlay zone based on common features
- Planned Unit Developments/Planned Communities to provide flexibility
- Creation of a mixed use district
- Creation of a transit, business, commercial or residential district
- Establish a Unified Development Ordinance to cross jurisdictional boundaries

Other mechanisms to achieve station area objectives can include changing of roadway standards or the transfer of development rights.

#### 3. Public/Private Partnerships

Joint development potentials occur in a public-private partnerships where the public agency provides the land and charges developers ground rent, while the developer contributes expertise in building, financing, and other aspects of development. Joint development projects on land owned by transit agencies are the most common strategy for joint development.

Another financing approach a municipality can take is to provide incentives for developers to build in TOD locations. These incentives can be financial or can take the form of a public investment in the different areas.

#### 4. Financing and Funding Public Improvements for TODs

Several funding mechanism are discussed in the Envision Utah to assist in the implementation of the TOD. These are:

- Tax increment financing (TIF) districts
- Joint development revenue
- Capital improvement budget
- Community Development Block Grant (CDBG) funds

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Other funding mechanisms are the federal transportation monies which can be channeled through such agencies as the Metropolitan Planning Organizations.

#### **Economic Development**

This toolbox helps communities develop and implement strategies to bring new jobs and wealth into the community. This tool consists of a 4-step process that seeks to prepare communities as an attractive location for high-skill and high-wage companies. This review highlights key points that should be taken into account when developing and implementing strategies that align with the community's vision.

#### Step 1: Establish an Economic Development Vision

- This should be the result of a participatory process that involves multiple stakeholders.
- It should reflect how residents want economic activity to develop and grow in the future.
- It is critical that a municipality's economic vision is based on state and regional economic development priorities and plans.
- There should be a clear statement of what the community wants to become and how it plans to get there.

#### Step 2: Conduct a Baseline Assessment

- Develop a detailed inventory to identify strengths and weaknesses of the community. A
  better understanding of current conditions will help develop better strategies to be
  implemented in areas where changes are desired.
- Assess the current state of economic development practice in the community.
- Get smart about industry requirements.
- Inventory municipal and regional strengths and weakness in light of industry requirements. The areas of interest include:
  - Land and Buildings
  - Zoning and Permitting Process
  - Taxes and Regulations
  - o Infrastructure and Utilities
  - Labor/Workforce
  - o Education and workforce development
  - Housing
  - Transportation infrastructure
  - Quality of Life/Amenities

## Step 3: Prioritize and Select Implementation Strategies

• Implementation strategies should be developed to move the region from baseline conditions to the desired future vision. This step should include a deliberate and open



process that engages all stakeholders including the general public. Individual communities should customize strategies to achieved desired results main areas of discussion when prioritizing strategies include:

Upgrade economic development practice

o If the region is in need of updating and modernizing economic development practices in the area, there are several steps and measures that can be taken to upgrade them which includes: Building a regional perspective, developing industry savvy, increasing efficiency in review processes, and updating information that can be made available to anyone.

#### Actively engage in business development

The type of engagement depends heavily on the type of business the region wants to attract. For example, for small business developments the communities should explore and develop expertise based on regional and state resources related to incubators, entrepreneurship training, financing, and small business management. For business retention and expansion, communities should survey existing companies to identify problems and determine needs. The focus needs to be on financing, incentives, and workforce development. For business recruitments, marketing should be the main focus.

#### Prepare land and buildings

- o In order to encourage economic growth and attract new business, the region should have a good understanding of the existing land available to meet current and future business' demands for space. Some strategies that help attract businesses include:
  - Public acquisition and assembly of land
  - Develop brownfields
  - Retrofit existing buildings
  - Develop and build business parks
  - Focus on quality of life and community amenities

Quality of life and the amenities available in the region are important aspects when attracting potential companies that require high-skilled employees. Employees are usually looking for places where they can have a high quality of life with many cultural and recreational amenities available, good schools, and a range of housing choices. Strategies that will increase the attractiveness of a region include:

- o Improve public school performance
- Plan for housing development
- Enhance downtown/promote arts and entertainment
- Preserve and enhance open space

Step 4: Benchmark Progress

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- It is necessary to develop benchmarks to measure the progress, identify challenges, make corrections and evaluate success. The following considerations should be taken into consideration:
  - Set attainable goals and establish a realistic timeline
  - Develop action steps and benchmarks related to goals
  - o Develop mechanisms for feedback and accountability
  - Track progress and report results to key stakeholders

#### **Quality Growth**

Envision Utah developed a toolbox called "Urban Planning Tools for Quality Growth" to guide and assist communities plan for the future in various types and stages of development. Main areas of interest include:

#### **Protecting Sensitive Lands**

- Codes must establish sending zones (land to be protected), and receiving zones (those areas where additional development is desired).
- Transfers work best when development rights are exchanged privately. Normal development reviews are followed and development credits are tracked, but exchange prices and transactions are negotiated privately so as not to encumber the exchange process.
- Transfer of development rights can be established between jurisdictions as well as intrajurisdictional. Similar ordinances must be adopted in both jurisdictions with an intergovernmental agreement.
- A maximum receiving zone density should be established to prevent incompatible densities.
- Examine receiving zone requirements that limit densities to ensure that transferred
  development rights do indeed increase the overall density. Landscaping, setbacks,
  maximum height requirements and even parking requirements should be examined to
  determine if they limit maximum densities in such a way that transferred rights cannot
  increase the density of a development.

#### **Meet Housing Needs**

- The focus here is on the different land-use planning strategies that can increase the choice and affordability of housing in the community. It is recommended that each community looks at the overall effects of its zoning code and adjusts regulations to meet the needs of both those who already live there and those who would live there if appropriate housing choices existed. Following is a list of new housing types to consider:
  - o Mixed-use housing above retail
  - Courtyard apartments



- o "Big-House" apartments
- o Live-work units
- Gardens courts
- Alley-fed townhomes and cottages
- In order to meet demand for different housing unit types and affordability it is recommended to balance the number and size of zoning districts, adopt performance based development regulations, and adopt basic design standards for small-lot, townhouse and multi-family development.

#### Making Our Community A Good Place to Walk

All areas in a walkable community should have easy pedestrian/bicycle connections to a center area that contains retail, transit or other conveniences. Ideally, the core is near or at the center of the walkable area and surrounded by higher intensity uses. A connected street network links the core to the remainder of the walkable district. Strategies that help achieve these goals include:

- Size communities for easy walking
- Focus communities on a central core of retail and services
- Include a diversity and mix of uses
- Increase street connectivity
- Require street-oriented buildings
- Ensure sufficient density to create activity and support retail
- Design streets for pedestrian comfort
- Minimize roadway width in street section design

#### Regional Visioning Guidebook

Scenario planning is a process of strategic visioning, an analysis of alternative potential futures to help us make wise decisions in the face of uncertainty. We don't know the future, but scenario processes enable planning for the best route forward in uncertain circumstances. Scenario planning is not forecasting or predicting, but rather a strategy to preserve the best options to get to where a community wants to go. Visioning through scenario planning helps us, in the midst of change, preserve what we love while improving our communities.

Regional visioning is a process. Depending on the individual needs of the community, the planning process may vary. The list below outlines the general tasks within each component of the regional visioning process.

- Values
  - Define project goals and the associated potential challenges
  - o Conduct values research

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- Identify and frame community issues
- Develop a communications strategy to maximize public involvement and awareness

#### Stakeholders

- Build partnerships: Identify stakeholders, champions, and underrepresented groups
- o Educate stakeholders on current trends and gather feedback
- Fine tune public message
- o Hold workshops and conduct mapping exercises with stakeholder groups

#### Data Gathering

- Develop a time horizon
- Define the study area
- Develop alternate scenarios
- o Gather data set
- o Identify current and future needs
- o Develop a baseline

#### Community

- o Raise awareness about your process and invite the public to participate
- Hold workshops to educate the public on the current trends and findings from stakeholder workshops
- Present scenarios and their trade-offs
- o Public "choosing" to identify the preferred elements of each scenario
- Present the preferred vision to the public at a roll-out event

#### Technical Analysis

- Identify workshop map 'themes"
- Develop scenarios based on stakeholder feedback and data
- Test and measure scenarios
- Evaluate and compile all data and feedback from the stakeholder group and the public to create a preferred scenario
- Storytelling: Construct a narrative of the preferred scenario that communicates future vision

#### Implementation

- Communicate the goals, strategies and tactics to successfully implement your vision
- Create a report geared toward implementation
- Develop an implementation toolkit
- Provide recommendations to policy makers



#### 2.2.2. Conclusion

Developing and implementing programs such as Envision Utah should be a carefully thought out and planned process that involves all stake holders from the public and private sector. The success of these programs relies significantly on the public input as a starting point to identify needs, and create tools that address the current and future concerns regarding their community. When implemented correctly, and appropriate funding is secured, these programs provide the communities with the know-how to not only analyze their community and formulate their goals and objectives but also provide them with the tools to implement their goals. As such these tools are empowering and can be extremely useful in enhancing a community's quality of life. All planning tools outlined in this memo are discussed in greater detail on the Envision Utah website at <a href="http://www.envisionutah.org/tools.">http://www.envisionutah.org/tools.</a>

## 2.3. Atlanta Regional Commission

As part of the SMART Plan Corridor Inventory Study, the Miami-Dade Transportation Planning Organization (TPO) requested that the Community Choices Program and the Livable Community Initiative Program be reviewed and summarized. The intent of the review is first to familiarize ourselves with the programs, and second to examine the applicability of the programs in the Miami-Dade area and particularly in the six SMART corridors currently being studied.

In comparison with the Miami-Dade TPO it is relevant to point out that the Atlanta Regional Commission (ARC) is a multi-disciplinary regional planning agency with wide-ranging authority. It covers a 10-county region located in the state of Georgia serving a population of 4.4 million. ARC is not just a Metropolitan Planning Organization, its authorities include:

- Metropolitan Area Planning and Development Commission
- Regional Planning Commission
- Metropolitan Planning Organization
- Area Agency on Aging
- Workforce Development Board
- North Georgia Water Planning District

The ARC areas of focus are 14:

- Plan new transportation options
- Encourage the development of livable communities
- Manage water resources
- Provide services for the region's older and disabled populations
- Help businesses recruit and train the workers they need

<sup>&</sup>lt;sup>14</sup> http://atlantaregional.org/about-arc/

- Provide data to help inform leaders and decision-makers
- Coordinate with local first responders in preparing a secure region

As such, the ARC organization functions quite differently than the Miami-Dade TPO. However, the two programs that are being outlined in the following sections, are managed by the MPO staff within the ARC agency.

### 2.3.1. Community Choices Program

The Community Choices Program is an ARC initiative that provides cities and counties with the **tools, technical assistance, and resources** to help them create communities that best suit their unique visions. The program has three goals:

- Provide cities and counties with the necessary resources to achieve their visions.
- Support implementation of regional plans and policies at the local level.
- Create examples of quality growth that can serve as best practices.

The Community Choices Program is an annual, competitive solicitation open to city and county governments within the ARC region. The program is seen as a service the agency offers as part of its daily operations and is funded out of the general budget. Typically, the project duration is about a year. However, since no federal funds are involved, there is flexibility related to the deadline.

#### **Application Guideline**

The application process is kept simple. Besides identifying information regarding the agency/organization that is applying for the grant, the applicant needs to briefly describe:

- The project
- How the project focuses on implementing the objectives and policies of the Atlanta Region's Plan Policy Framework
- Outline the specific task(s) within the project for which assistance is needed
- Key persons who will work with ARC
- How elected officials have demonstrated support for this project (including signature sheet)

#### Selection Criteria

In February, ARC places the application on-line and the final selection takes place in April. The selection committee consists of five to seven internal staff members. The final decision is made by the Executive Director. Four to six projects are selected on an annual basis.

#### **Funding Sources**





Funding for this program comes out of the ARC general operating budget. One full time employee dedicates approximately 70% of his/her time to the program. In addition, typically, three 30 hours per week interns are hired during the summer months, who spend all their time on the Community Choices Program.

Following is a list of the Year 2016 Projects<sup>15</sup>:

City of Atlanta – Assist the Washington Park Historic District Planning Commission in compiling the information and documentation required to apply for Historic District designation.

City of Austell – Conduct an inventory of redevelopment sites to market to potential developers.

City of East Point – Review the city's design standards and regulations specified in the Downtown Architectural Overlay District and recommend amendments to the commercial development zoning district.

City of Fairburn – Assess the housing and redevelopment needs in the downtown and Lightning neighborhoods to help the city address housing and community revitalization.

Clayton County – Conduct a land-use and zoning audit of the Mountain View Livable Centers Initiative area.

As can be seen, the studies vary in nature. The involvement of ARC differs per project. It is not the intent for ARC to conduct the whole study or take the leading role in the project. ARC is the supporting agency and provides support as needed.

## 2.3.2. Livable Centers Initiative Programs

The ARC livable Centers Initiative (LCI) is a grant program that incentivizes local jurisdictions to re-envision their communities as vibrant, walkable places that offer increased mobility options, encourage healthy lifestyles, and provide improved access to jobs and services. The program helps pay for planning studies and the construction of transportation projects, such as sidewalks and intersection improvements. The program is funded with federal transportation dollars. The federal grants cover 80 percent of the cost of the study and/or transportation project, and the recipient provides the 20 percent match.

The primary goals for the LCI program include 16:

- Reduce vehicles miles traveled (VMT) and congestion
- Take advantage of transit and road network capacity and underutilized infrastructure
- Provide access to a variety of travel modes including transit, roadways, walking and biking

<sup>15</sup> http://atlantaregional.org/community-choices/

<sup>&</sup>lt;sup>16</sup> http://atlantaregional.org/livable-centers-initiative/

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- Encourage compact mixed-income residential neighborhoods, employment, shopping and recreational options
- Develop an outreach process that promotes the involvement of all stakeholders

The program was created by the ARC Board in 1999. As a result of the program, many areas in Atlanta have changed into vibrant walkable communities. Like the Communities Choices Program, the projects and plans are locally driven. The ARC provides guidance and a funding mechanism but the ideas and plans are locally developed.

#### **Application Guideline**

The application process is a competitive process in which the applicant has to fulfill a set of requirements. These requirements are related to such items as:

- Study Area Definition
- Issue Statement
- Commitment
- Scope of Work
- List of Stakeholders
- Itemized Budget
- Schedule
- 20 percent Match Resolution
- Jurisdiction Support

The application is available on-line during the month of October and the selection occurs in January.

#### Selection Criteria

Every year the ARC selects its projects based on the evaluation of the application by an internal and an external review committee. The internal review committee is made up of five internal staff members, while the external review committee consists of ten members; including stakeholders and staff from other agencies. The applications are ranked based on a 100 point scale. The points are assigned based on the completeness of the description of the requirement areas listed above.

The LCI program has two different types of projects; planning studies and transportation projects. The selection criteria are slightly different in that a local government has to have successfully completed a LCI planning study prior to applying for a LCI transportation project.



Following is the list of the selected planning projects for the year 2017 as listed on the ARC website<sup>17</sup>:

City of Ball Ground

Grant amount: \$100,000

The City of Ball Ground will use its LCI grant to address truck traffic and create a blueprint for new development in its downtown district in a manner compatible with the historic significance of the area.

Central Atlanta Progress Grant amount: \$32,000

In conjunction with three existing LCI areas, Central Atlanta Progress will analyze land use, zoning and transportation needs in the City of Atlanta's Memorial Drive corridor and develop recommendations for legislative and regulatory changes.

City of Atlanta

Grant amount: \$100,000

This major plan update to the Greenbriar Town Center LCI will identify creative ways to generate economic development opportunities in the Greenbriar Mall area, a key goal of the Invest in Southwest Atlanta Task Force.

**Gwinnett Village CID** 

Grant amount: \$136,000

This major update to an existing LCI plan aims to improve livability, accessibility and sustainability along the Jimmy Carter Boulevard corridor.

City of Holly Springs Grant amount: \$56,000

This update to the Holly Springs LCI study will further refine the goal of creating a walkable, vibrant downtown with a variety of housing.

City of Sugar Hill

Grant amount: \$55,000

This major plan update to the Downtown Sugar Hill LCI study will establish new goals for the area and ensure that development regulations are aligned with the LCI plan.

<sup>&</sup>lt;sup>17</sup> http://atlantaregional.org/livable-centers-initiative/



Aerotropolis Atlanta Community Improvement Districts

Grant amount: \$160,000

This supplemental study will develop a plan for a trail network that connects the communities around Hartsfield-Jackson Atlanta International Airport as well as the Atlanta Beltline, the Phoenix Trail, and Southtown Trail.

City of Alpharetta

Grant amount: \$100,000

This supplemental study will develop a plan to transform the North Point Parkway area into a more vibrant area featuring a mix of businesses and residences that offers people the ability to walk to work, shopping and transit options.

**Cumberland Community Improvement District** 

Grant amount: \$50,000

This supplemental study will assess the feasibility of, and the demand for, a bike sharing system in the Cumberland Galleria area, and will identify potential station locations.

City of Decatur, City of Atlanta, MARTA

Grant amount: \$100,000

This supplemental study will develop conceptual plans for development at the East Lake MARTA Station and pedestrian/bicycle connections to surrounding neighborhoods and amenities.

City of Hampton

Grant amount: \$96,000

This supplemental study will update the city's development regulations in the LCI area to better support bicycling and walking.

The list is copied here to provide an insight into the variety of LCI planning studies ARC is involved in. All studies combine the analysis of the land use/development patterns and the transportation system. In many cases, the focus is on the pedestrian and bicycle modes.

#### **Funding Sources**

Funding for LCI projects is provided in the Regional Transportation Plan (RTP) and programmed in the Transportation Improvement Program (TIP). The funding source is the Surface Transportation Program sub-allocation to the Metropolitan Planning Organizations (MPO) with a population greater than 200,000 (STP-Urban). The LCI program is managed by two full time ARC employees.

LCI Planning Studies



Every year, the ARC sets aside \$800,000 of its STP-Urban funds for the grant application process related to the LCI planning studies program. Local governments competitively apply for LCI grants. The maximum amount for each application is \$250,000. On the average eight to ten planning projects get selected.

#### LCI Transportation projects

The ARC Broad has set-aside five million dollars to be spent on LCI transportation projects between the years 2005 and 2040. Every year, local governments compete for the funding by filling out the on-line application. The maximum amount for the transportation project is six million and the minimum amount is one million. The number of applications varies but on the average there are twenty projects in progress. The length of the projects varies anywhere between three to seven years.

#### 2.3.3. Conclusion

Both the Community Choices Program and the LCI are similar in nature in that they first and foremost involve the local community. In addition, they are both grant programs and both take a comprehensive look at the development patterns, meaning the land use and the roadway system. Therefore the description of the lessons learned, obstacles to implementation, and applicability to the Miami-Dade area for both of these programs are combined below.

#### Lessons Learned 18

- Adopting land use and development regulations are equally or even more effective than multi-million dollar transportation projects in creating truly walkable communities with viable transportation alternatives.
- Federal transportation funds offer flexibility to create LCI-type programs that incorporate land use and transportation.
- The "process" can sometimes be more important than the project. The process builds lasting partnerships, political and public will, and private developer interest which will keep implementation going long after the ribbon is cut on a new sidewalk.
- Don't underestimate the seemingly small, regionally insignificant projects -- they are
  often the most popular, transformative and high-impact projects in the Transportation
  Improvement Program (TIP).

#### Obstacles to Implementation

<sup>&</sup>lt;sup>18</sup> http://atlantaregional.org/livable-centers-initiative/



It was difficult to convince the general public, stakeholders, and board members to spend transportation money on non-roadway capacity projects. Clearly identifying the economic value of investments made in sidewalks, bicycle facilities, etc. is very important.

Related to this point, it was a difficult decision for the Board to set-aside the five million dollars for LCI transportation improvements that are non-roadway capacity. It is important to provide data showing that non-capacity increasing projects benefit the economy.

#### Applicability to Miami-Dade

Miami-Dade County is home to 34 incorporated cities and several unincorporated areas. Initiating a program such as the Community Choices Program or the LCI, would provide each of these governmental entities with a tool to focus on their particular needs, formulate a plan to address those needs, and obtain assistance in the formulation of the plans.

The Community Choices Program and the LCI program will create stronger communities and stimulate public involvement in the planning process. Having a group of individuals within the community working together, will facilitate obtaining guidance and support in the TPO planning process.

The LCI transportation project program builds on the Community Choices and the LCI planning project program. One of the LCI transportation projects allocation criterion is that the local government has successfully completed a LCI planning project. This prerequisite increases the success of the project since the community has already formulated a vision and a plan surrounding the project.

Contact person for the Community Choices Program is Sidney Douse at (407) 378-1595 or <a href="mailto:sdouse@atlantaregional.org">sdouse@atlantaregional.org</a>.

Contact person for the Livable Community Initiative Program is Jared Lombard at (470)-378-1589 or <a href="mailto:ilonbard@atlantaregional.org">ilonbard@atlantaregional.org</a>.



## 3. Existing Conditions Assessment and Analysis

This section of the report has four areas of focus. The first section lists the studies that have been conducted on the Kendall corridor since 1996. The studies have been summarized in chronological order. Section 3.2 discusses the characteristics of the corridor such as socioeconomic data, land use, vehicular traffic and transit ridership. All these characteristics are summarized to provide an insight into the travel behavior and potential travel options for the corridor. Section 3.3 includes a needs analysis of the corridor, while section 3.4 discusses the Transit-Oriented Development guidelines that currently exist in the Urban Center Districts.

## 3.1. Completed Studies

Several transportation and mobility studies have been conducted in the study area. Summaries of these studies are provided below in chronological order.

#### 1996 - Kendall Area Transit Improvement Study by Metro-Dade Transit Agency

The study investigated a range of alternatives from enhanced bus services to dedicated transit way options. It developed conceptual recommendations for short and medium-range alternatives as well as addressed (as appropriate) the implications of longer-range projects in the Kendall area. Improvement strategies included enhancing existing bus route services, adding route maps and information at bus stops, new bus routes, and building park-and-ride facilities.

#### 2001 - Kendall - SR 826 Corridor Major Investment Study by Metro-Dade Transit Agency

This study addressed mobility issues along the Kendall Corridor area targeting the East-West market along Kendall Drive, and the North-South Market with major roads intersecting Kendall Drive (SR 826, Homestead Extension of the Florida's Turnpike (HEFT), and SR 874). The study's major objective was to identify the most appropriate transportation solution defined by mode, transit technology, and alignment to serve this extremely complex North/South and East/West travel Market. The Alternatives considered were:

- One-way single-lane busway along the median of Kendall Drive and bus service along the HEFT's High Occupancy Vehicle (HOV)/High Occupancy Toll (HOT) lanes;
- Two-way double-lane busway along the median of Kendall Drive with bus service along SR 878 and SR 826's HOV/HOT lanes;
- Two Track Light Rail Transit (LRT) Service along Kendall Drive and CSX Corridor

The study found that none of the major build alternatives considered provided mobility and development gains that were commensurate with their significant costs and community impacts.



# 2002 – Kendall Drive Mobility Enhancement Study by Miami-Dade Metropolitan Planning Organization (MPO)

This study developed and evaluated eight different lane arrangement alternatives for improving the vehicular and person carrying capacity along the Kendall Drive corridor. These alternatives all intended to physically fit within the existing pavement section from existing curb to existing curb. Three alternatives proposed three lanes for each travel direction, maintaining the existing six-lane section. One alternative proposed three-lanes for each travel direction with two exclusive center bus lanes. Other alternatives proposed four travel lanes for each travel direction providing an eight-lane section. Also proposed was an unbalanced section with a total of nine travel lanes for both travel directions. These lane arrangement alternatives included the use of general-use lanes as well as specialty-use lanes such as high occupancy vehicle (HOV) and bus lanes.

# 2008 – East Kendall Charrette Area Report by Miami-Dade County Department of Planning and Zoning, Community Planning Section, Urban Design Center

Several stakeholders including city officials, community leaders, developers, and citizens gathered to create a future vision for the Dadeland-Datran area. Since then, the Board of County Commissioners has approved the Downtown Kendall Charrette Master Plan, report and recommendations and also the Downtown Kendall Urban Center District ordinance which sets specific development requirements within the area. Section 3.4 discusses this ordinance in greater depth.

# 2015 – West End Connectivity Plan by Miami-Dade, Parks, Recreation and Open Spaces Department

As part of this effort five different alternatives were considered to promote greenway connectivity and walkability throughout the Kendall area and to County Parks. The projects are improvements to both the local and regional greenways.

- 1. Construct greenway trail in canal right of way on SW 137 Avenue between SW 96 Street and SW 104 Street. Segment length: 0.46 miles (2,450 linear feet) of trail
- 2. Construct greenway trail in right of way along the east side of SW 142 Avenue from Kings Meadow Park to SW 104 Street.
  - Segment length: 0.33 miles (1,742 linear feet) of trail
- 3. Construct greenway trail/sidewalk in Camp Matecumbe, on SW 142 Avenue and SW 120 Street.
  - Segment length: 0.85 miles (4,510 linear feet) of trail

- 4. Construct pedestrian bridge linking West Kendall District Park to the neighborhood to the north at SW 159 Court, which neighbors Gilbert L. Porter Elementary School and Dr. Gilbert Porter Elementary PLC.
- 5. Black Creek Trail Segment B is multi-use trail along Black Creek from SW 137th Avenue to SW 177 Avenue (Krome Avenue). The 12' wide paved shared-use path will connect with the 8.4 mile Segment A completed trail and it will connect to the work on Krome Avenue by the Florida Department of Transportation (FDOT), which will provide an 18.5 mile multi-use path. A portion of this segment is adjacent to the West Kendall District dog park.
  - Segment length: 9.2 miles (48,576 linear feet) of multi-use trail

# 2016 – West Kendall Drive Corridor by Miami-Dade Regulatory and Economic Resources Department

Kendall Corridor plan provides multiple recommendations to improve the one-mile area, north and south of Kendall Drive from SW 137 Avenue west to Krome (SW 177) Avenue. Street ways are redesigned to provide bicycle lanes, wider sidewalks and added landscaping along Kendall Drive. Other key improvements:

- Kendale Lakes Plaza has been re-designed in redevelopment phases to accommodate mixed use and a new commercial building where parking aisles become streets to form pedestrian-oriented block networks, and
- Kendall Town Center off Kendall Drive between SW 157 Avenue and SW 162 Avenue remains an "ideal location" for a West Kendall town center, primarily with retail uses.

# 2017 Traffic and Transit Data Collection – Kendall Drive Rapid Transit Project Development and Environment (PD&E) Study by FDOT

The general objective of this Study is to provide and document information necessary for the FDOT, to evaluate alternatives for transit improvements within the study corridor and determine a Recommended Alternative acceptable to stakeholders and viable for potential State and Federal grant funding. The Study will document existing conditions, typical sections, traffic analysis, right of way requirements, environmental impacts, and costs of improvements. The Study will also consider social and economic impacts and will set forth mitigation efforts, as required by the PD&E Manual. The Study will also document the alternatives' ability to provide mobility, attract ridership, affect congestion, and provide a cost effective service that supports its surrounding land uses and economic development potential.

#### 3.2. Corridor Profile

In this section, the corridor will be summarized based on an analysis of the socioeconomic data and in particular the characteristics of the persons and households living within a ½ mile buffer.



The employment and school enrollment data will be analyzed as will the land use and existing zoning. Finally, the characteristic of the transportation network will be summarized.

### 3.2.1. Existing Land Use

There are many land uses in the study area. Within the ½ mile buffer, residential land use is the dominant land use. The residential land use categories are characterized as follows:

- Single-family, medium-density, residential developments 19%
- Multi-family and single-family, low-density 18%
- Single-family, high- density 7.4%
- Townhouses 5.3%
- Multi-family, high-density 5.1%

Only a 0.2% of the total land is dedicated to mixed-use, high- density, developments with office/retail space on the lower floors. These mixed-use, high-density developments are currently found adjacent to Kendall Drive between SW 72 Court and SW 74 Court in front of the Dadeland Mall. Figure 5 shows land use designations for the study area, while Appendix 1 shows the current zoning map.



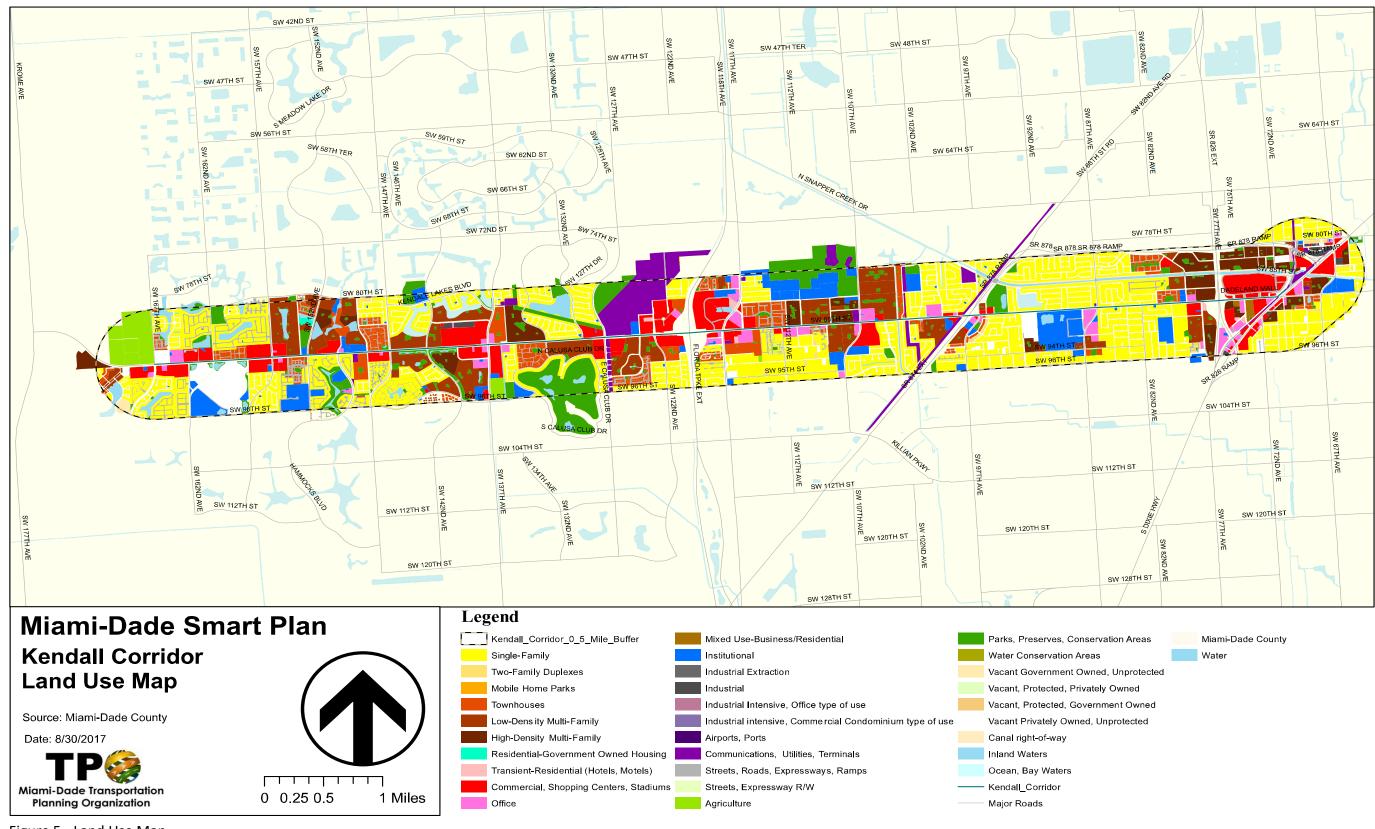


Figure 5 - Land Use Map

Townhouse and low-density multifamily developments are predominantly found towards the middle and western sections of the corridor between SW 103 Avenue and SW 157 Avenue. Commercial developments are primarily found at the corners of major intersection within the corridor and account for 11.3% of the land within the study area.

Privately owned vacant land can be found scattered within a ½ mile of the corridor. Vacant land parcels vary in size and account for 150 acres or 2.5% of land within the study area. The largest privately owned vacant parcel is 68.9 acres, and it is located in the western part of the corridor between SW 156 Place and SW 162 Avenue. Figure 6 below shows the land use distribution within ½ mile buffer of the Kendall Corridor.

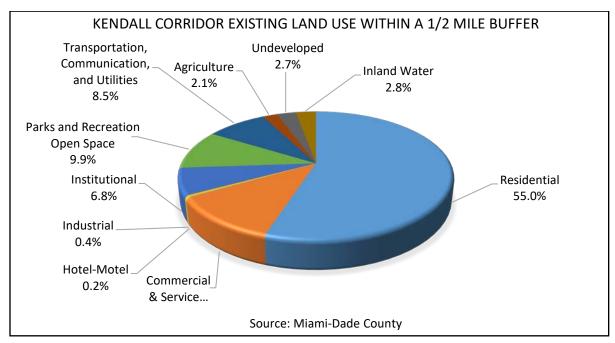


Figure 6 - Kendall Corridor Land Use Distribution

#### 3.2.2. Future Land Use

The county's Comprehensive Development Master Plan (CDMP) includes a land use plan map that designates where development of various uses and intensities is permitted. A quick snapshot of the future land use for the study area is illustrated on Figure 7. For a complete map please refer Appendix 1 – Land Use Map.<sup>19</sup>

<sup>&</sup>lt;sup>19</sup> http://www.miamidade.gov/planning/cdmp.asp



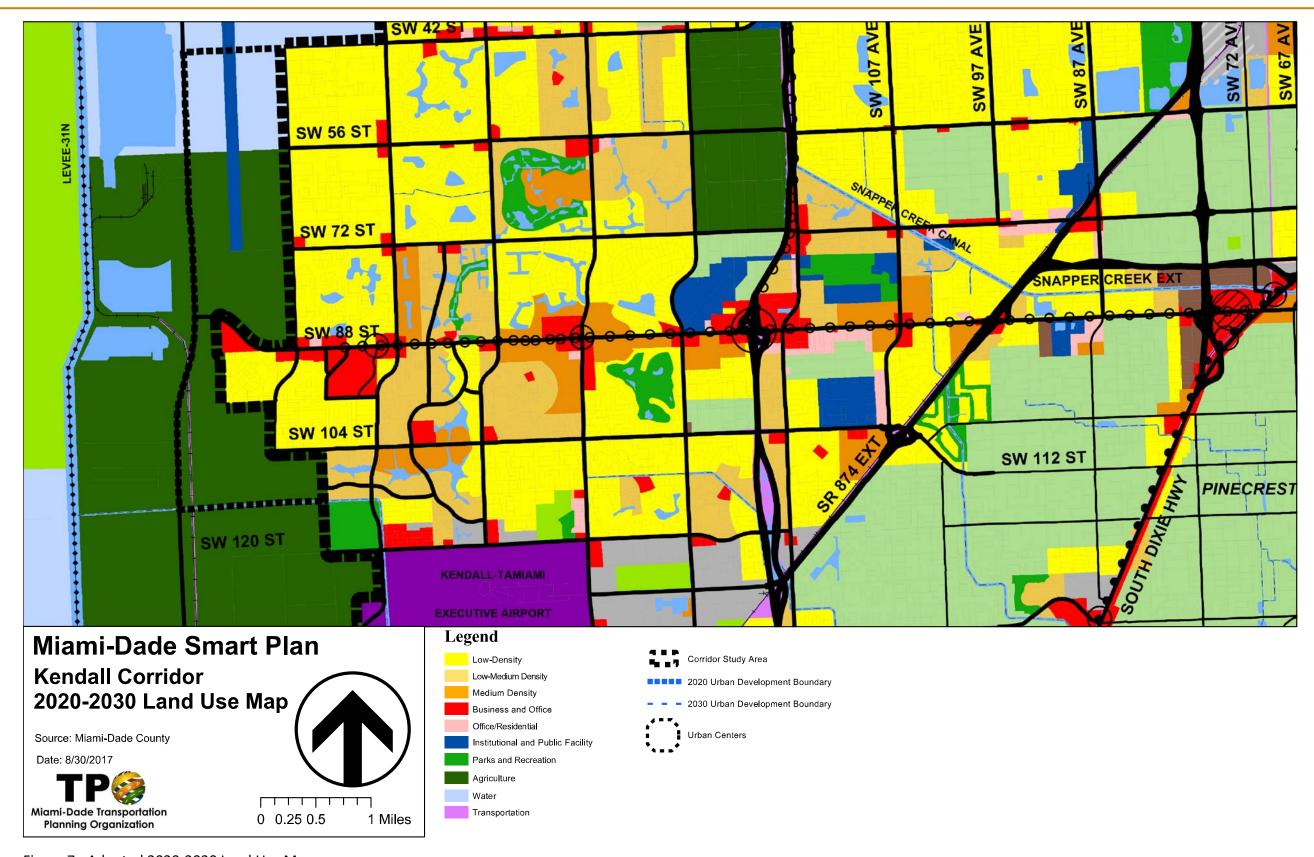


Figure 7 - Adopted 2020-2030 Land Use Map





The CDMP contains directives to promote urban centers in places where mass transit, roadways, and highway are highly accessible. The CDMP provides for three types of urban centers: community (CUC), metropolitan (MUC) and regional (RUC). The area within the boundaries of an urban center is divided in three Sub-districts: Core, Center and Edge. The highest density and intensity within an urban center is to be allocated to the Core Sub-districts, a mixed-use area adjacent to the transit station(s) or major transit stop(s). The densities and intensities shall then gradually decrease from the Core to the Center Sub-district where mixed-uses are still permitted and then further decrease to the Edge Sub-district which is characterized by single uses, including low density residential<sup>20</sup>.

The future land use designation found in the CDMP is consistent with the existing land use map. There are designated Community Urban Centers at Kendall Drive and SW 137 Avenue, SW 158 Avenue, and Dadeland North and South Metrorail stations depicted as medium size circles. There is also one proposed Metropolitan Urban Center at the Kendall Drive and the HEFT intersection, and one adopted Metropolitan Center in the Downtown Kendall area. These Urban Centers are areas identified by the CDMP as areas desirable for moderate to high density development with vertically and horizontally integrated uses. The circles on the CDMP are symbols that mark the general location of each center and do not graphically depict the extent or boundary of a particular center. Urban centers permit mixed-use developments that include retail trade, business, professional and financial services, restaurants, hotels, institutional, recreational, and cultural and entertainment uses, and moderate to high density residential uses. Development density and intensity standards are also provided for urban centers. For Community Centers, average floor area ratios (FAR) should range from greater than 0.5 at the edge of an urban center to greater than 1.5 in the core; for residential development, the maximum dwelling units per acre permitted is 125. Where Urban Center uses and intensities differ from those of the underlying land use designated on the Land Use Plan (LUP) map, the urban center uses are permitted.<sup>21</sup> The Urban Center land use has been developed in an effort to create a community that allows for increased walkability and bicycle activities as well as increased transit use. Section 3.4, Transit-Oriented Development Guidelines, discusses the zoning guidelines for the urban centers in more detail.

## 3.2.3. Property Value

The total parcel area with residential-single family units is 1,500 acres which represents about 25% of the total parcel area within ½ mile buffer of the Kendall Corridor. The total market value for the residential-single family units along the corridor is \$2.17 Billion, with an average of \$1.4 Million per acre. These residential-single family parcels are found scattered throughout the entire

<sup>&</sup>lt;sup>20</sup> https://www.miamidade.gov/zoning/library/reports/standard-urban.pdf, page 1

<sup>&</sup>lt;sup>21</sup> https://www.miamidade.gov/zoning/library/reports/west-kendall-corridor-planning-report.pdf



length of the corridor with denser concentration in the eastern section of the corridor from SW 107 Avenue to US 1.

There are about 676 acres dedicated to condominiums with a total market property value of \$2.2 Billion, an average of \$3.2 Million per acre. Residential condos are found scattered along the corridor and represent about 17,900 living units.

The highest private property values in the study area are the Dadeland Mall Shopping Center at \$439.6 Million followed by the Baptist Hospital at \$132.5 Million. Concentration of higher value properties can be observed around the Dadeland Mall Shopping Center on the eastern part of the corridor, and in the center of the corridor around the Kendall Drive and HEFT intersection. In the western part of the corridor between SW 162 Avenue and SW 158 Avenue a 69.8-acre vacant property is listed at a value of \$25.9 Million. Figure 8 shows a complete map of property values along the corridor.



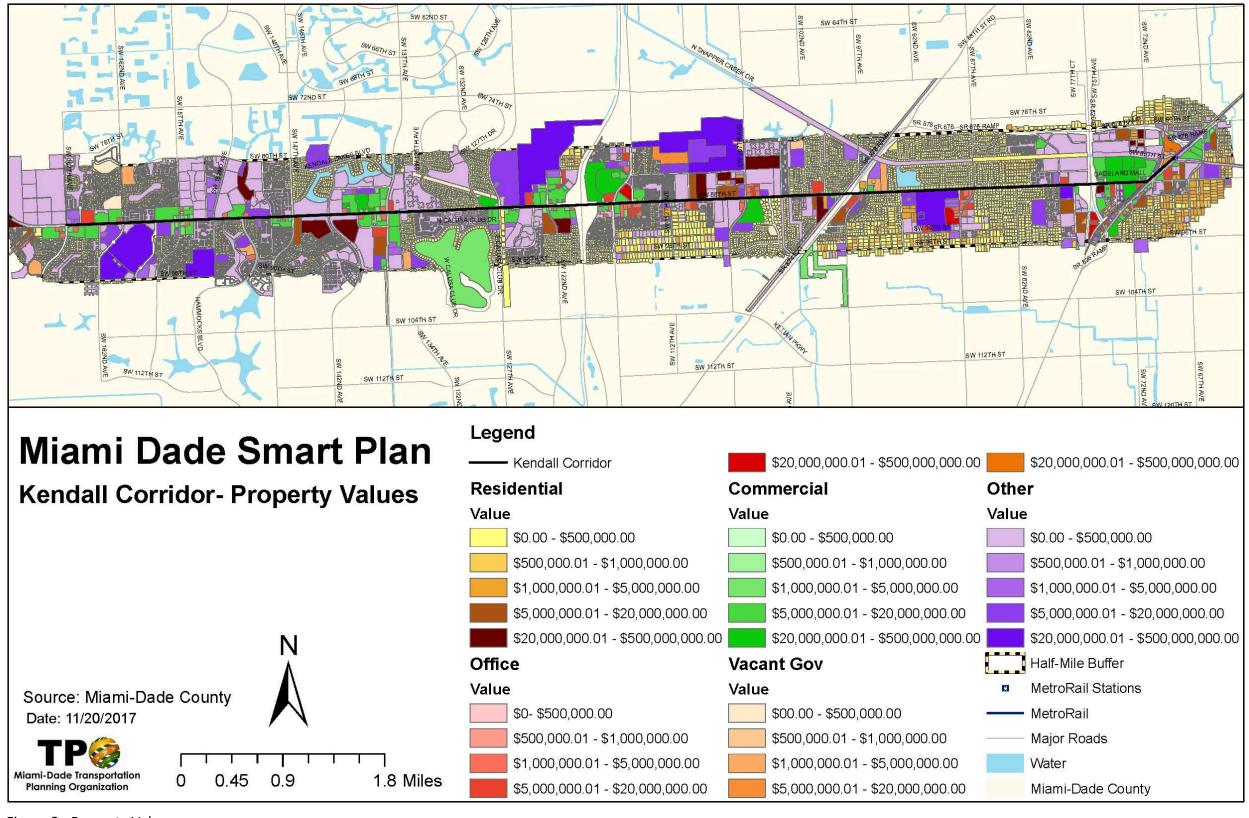


Figure 8 - Property Values





#### 3.2.4. Socioeconomic Data

The socioeconomic data sources used in the following sections came from the Southeast Regional Planning Model – Version 7 (SERPM-V7) for the years 2015 and 2040 as well as the 2010 Census and American Community Survey (ACS) multiyear summary data (2006-2010).

#### 3.2.4.1. Population

There are approximately 104,000 persons living within the ½ mile buffer of the Kendall corridor. This number is based on the traffic analysis zones (TAZ) outlines, which do not always correspond to the ½ mile buffer. Referring to Figure 10, the population density concentrations are spread throughout the corridor. There are several pockets of high densities in three areas along the corridor, these are in the western portion from SW 167 Avenue to SW 137 Avenue, the central area from HEFT to SR-874, and on the eastern end of the corridor around the Dadeland Mall Shopping Center.



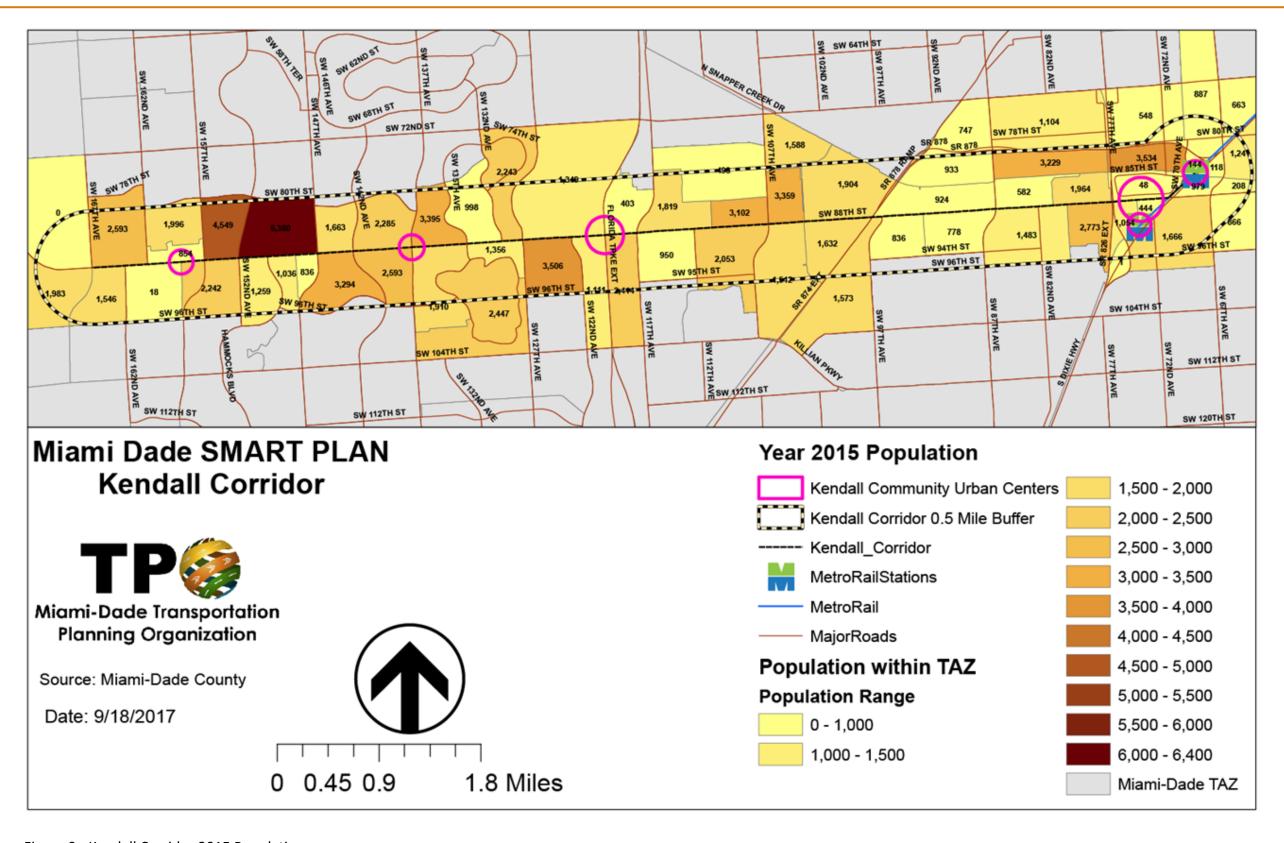


Figure 9 - Kendall Corridor 2015 Population



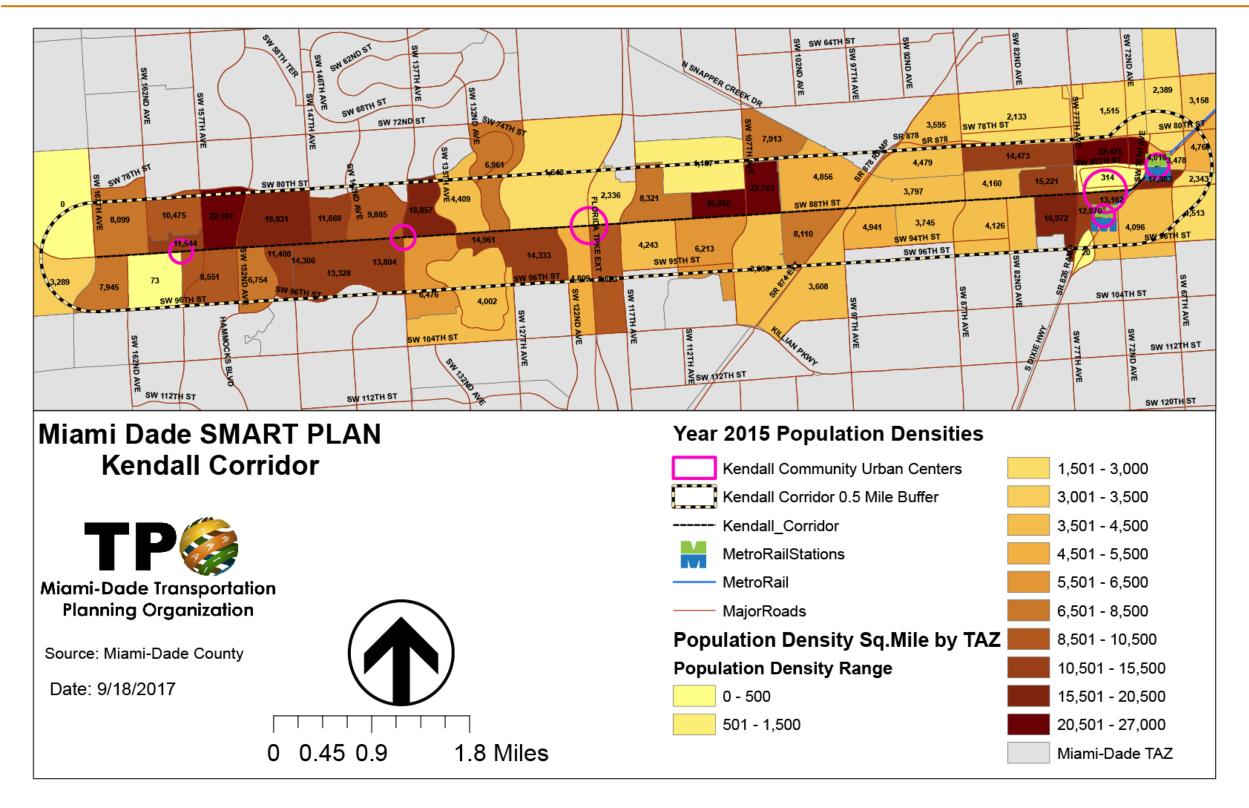


Figure 10 - Kendall Corridor Population Density by TAZ



Figure **11** shows the gender distribution of the residents in the study. Females represent about 52% of the population within the study area, and males represent 48% of the population.

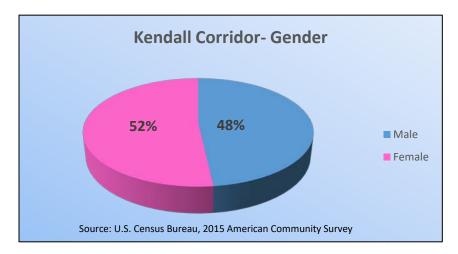


Figure 11 - Kendall Corridor Gender Distribution

The majority of the population is made up of people between the ages of 24 to 64 years old at 56%. The population between 0 to 17 years old is 21%, the group between 18 to 24 years old represents 9%, while over 65 years old is 14% of the population.

The different genders and age groups are distributed somewhat evenly through the length of the corridor with no specific concentrations of any group in a given area along the corridor. Figure 12 shows the number of households with and without children. High ranges of households with children are observed on the western and central part of the corridor as shown below.

The median household income within the  $\frac{1}{2}$  mile buffer of the Kendall Corridor is \$52,142 which is slightly lower than the national median income (\$53,718) for the year 2014. Within the corridor the different income groups are distributed as shown in Figure 13 below.<sup>22</sup>

<sup>&</sup>lt;sup>22</sup> https://www.census.gov/data/tables/2016/demo/income-poverty/p60-256.html



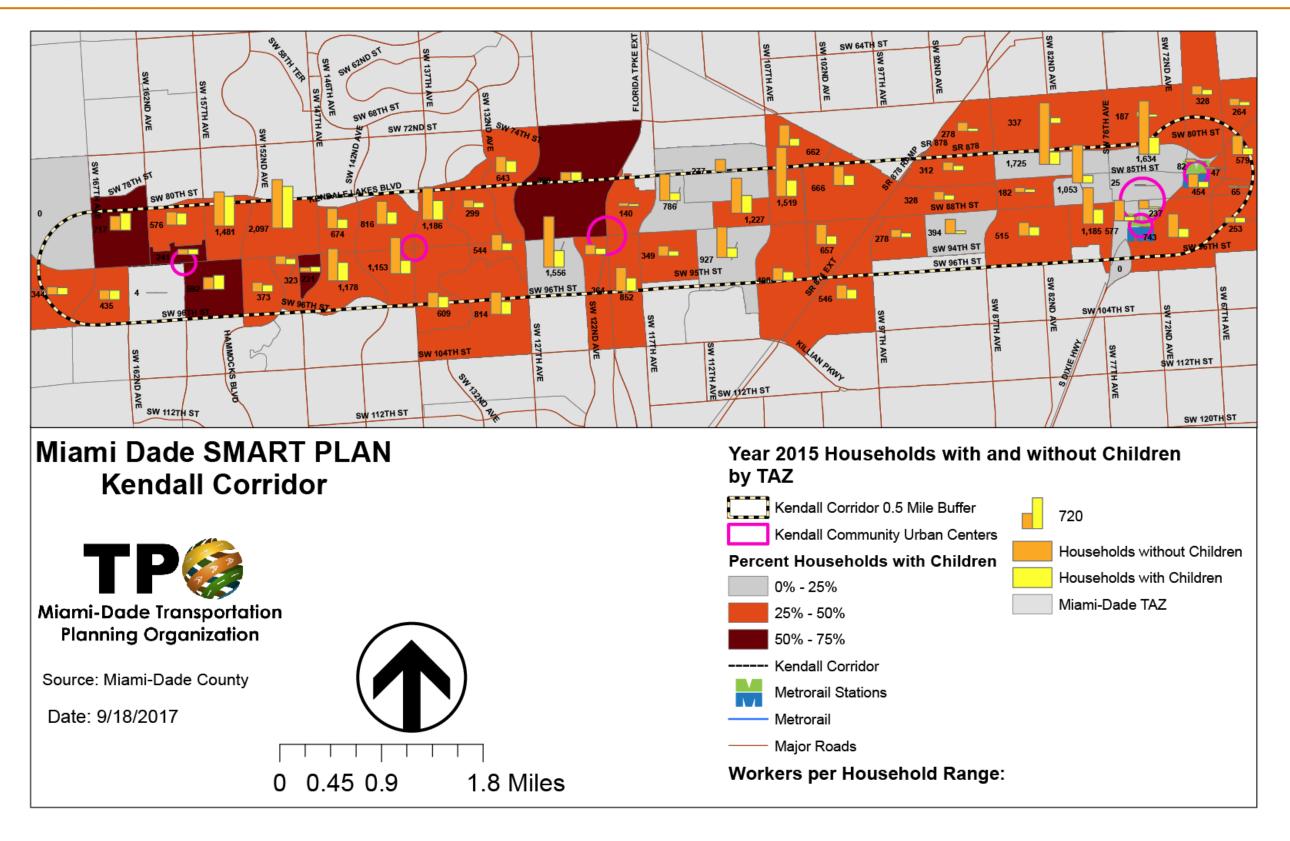


Figure 12 - Households by Presence of Children

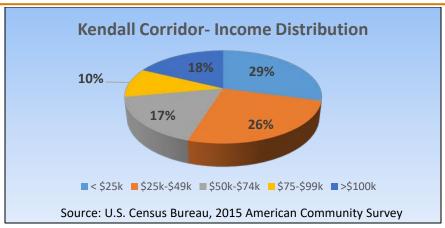


Figure 13 - Income Distribution

The highest percentage of the households within the study area earns \$25,000 or less at 29%, followed by those making between \$25,000 and \$49,000 at 26%. When combining the income groups, those earning more than \$50,000 make up 45% of the population along the Kendall Corridor.

Figure 14 shows that a higher density of the population making less than \$50,000 are mostly concentrated on the center and western parts of the corridor from SW 157 Avenue to SW 107 Avenue. The population making more than \$75,000 or more are mostly located towards the outside boundaries of the study area throughout the length of the corridor. Figure 15 shows the percentage of household making less than \$25,000 by TAZ. There are pockets of higher percentages (30% to 50%) of low income households on the eastern limit just east of US-1, in the central region around SR-874, and in western part of the corridor between SW 157 Avenue and SW 137 Avenue.

The SERPM-V7 lists four groupings of workers by household. These are zero workers per household, one worker per household, two workers per household, and three or more workers per household. Figure 16 list the total number of households in the TAZ as well as the proportion in each of the categories of workers. The distribution of workers by household is even throughout the corridor.

Based on the SERPM-V7 data, the population in 2040 is expected to increase by 18 percent for a total population of approximately 103,000 people in 2040. Figure 17 shows that the areas on the eastern and western parts of the corridor will experience significantly higher population growth rates.



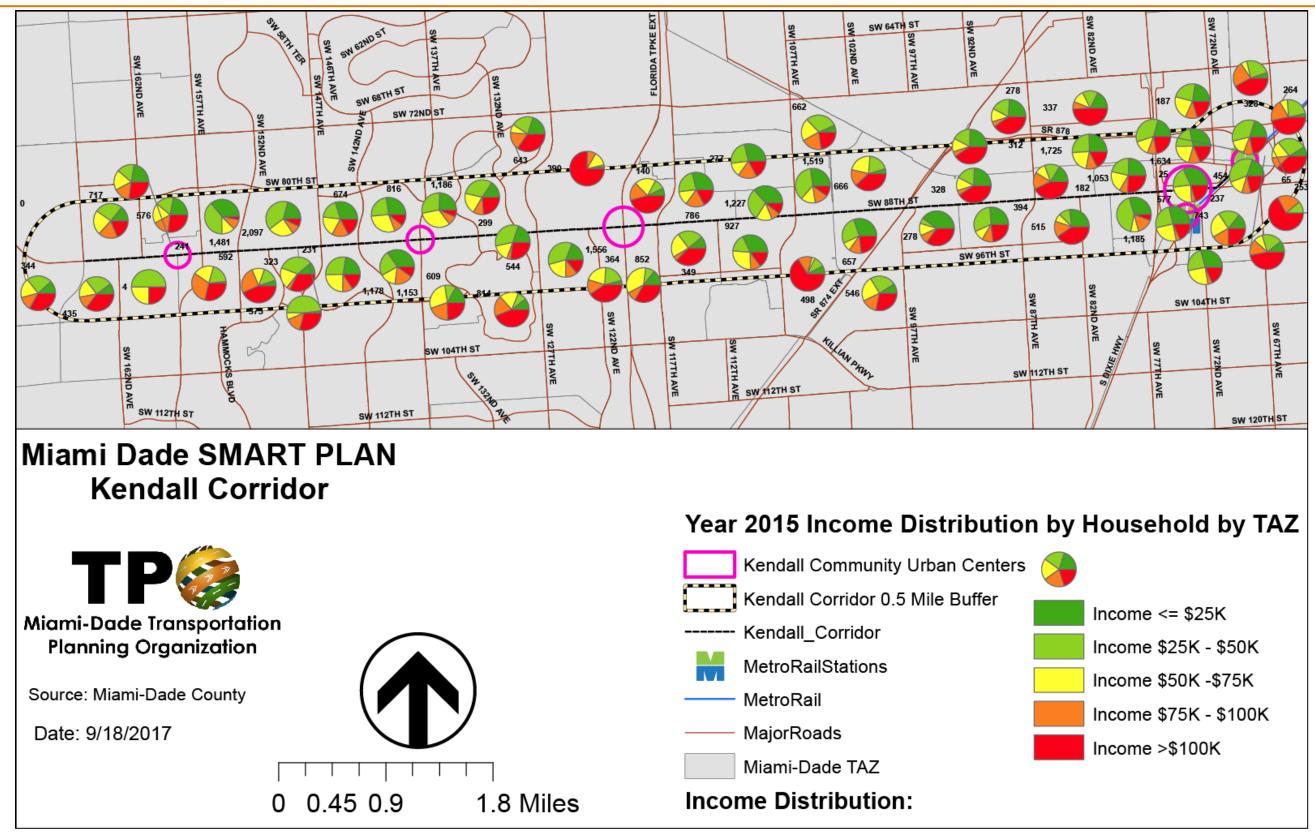


Figure 14 - Household Income Distribution



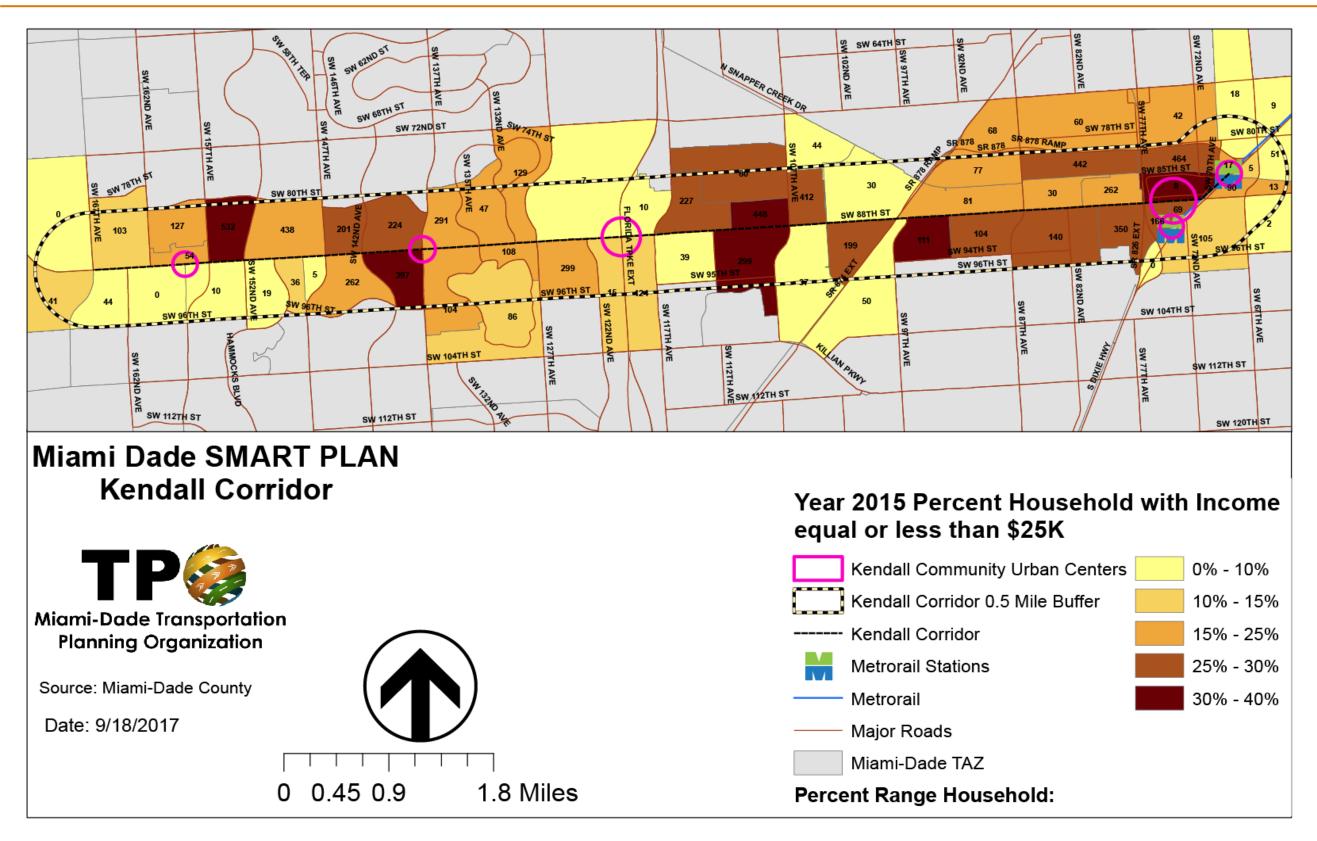


Figure 15 - Percent of Total Households by TAZ Making Less Than \$25K



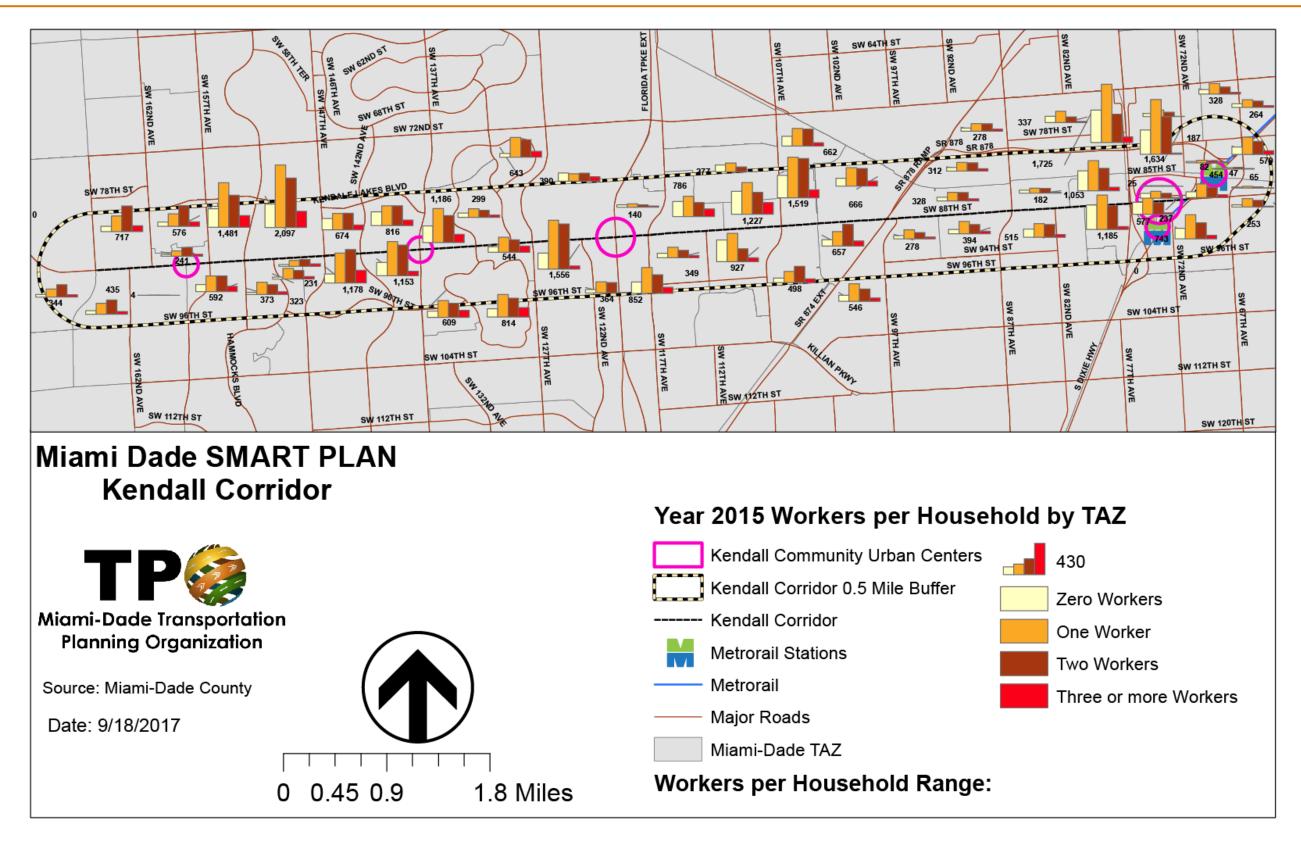


Figure 16 - Workers by Household



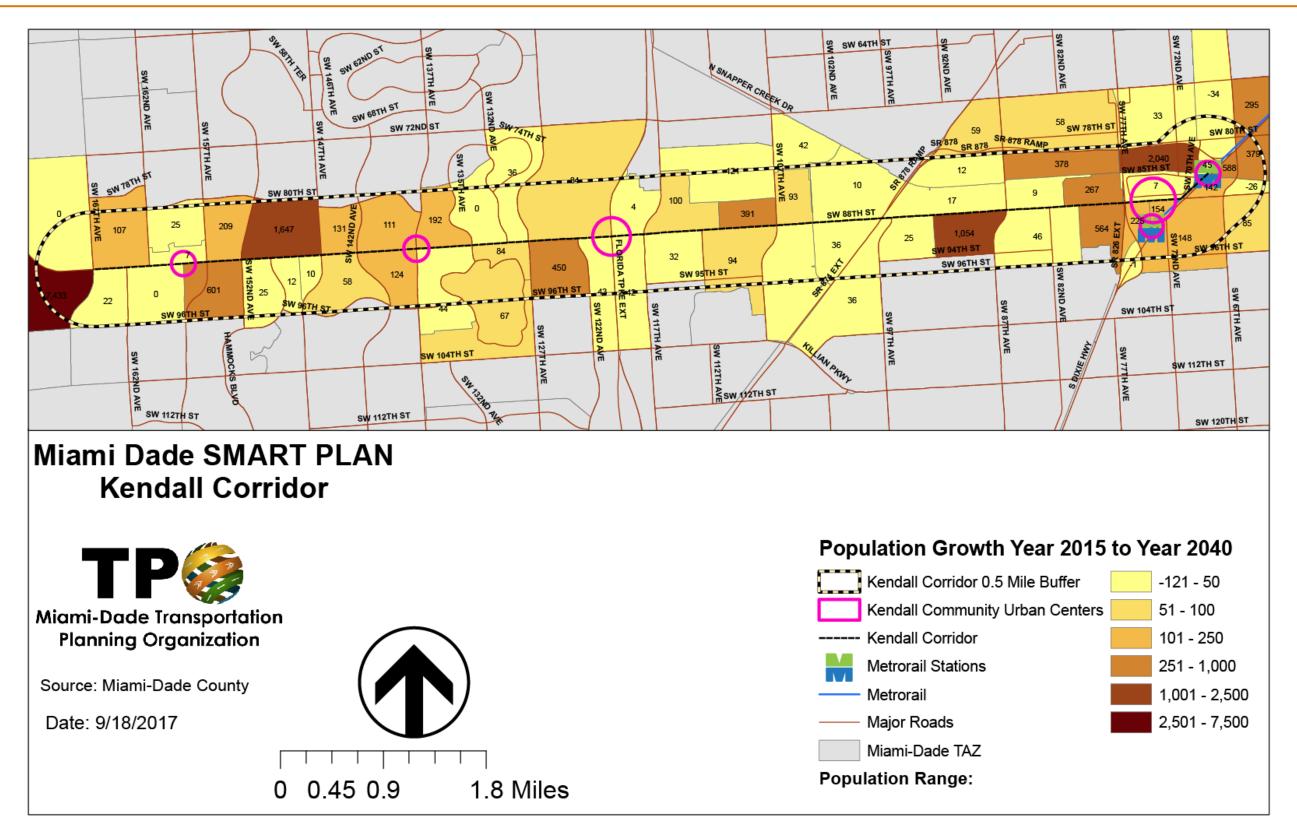


Figure 17 - Year 2040 Future Population and Percent Growth



# 3.2.5. Employment Data

Based on the SERPM-V7 data there are 55,300 workers within the study area. The highest number of workers by TAZ was found to be 5,300 workers and they are located in the eastern part of the corridor between SR-826 and US-1 in front of the Dadeland Mall Shopping Center. This region displays mixed-used land patterns with high density tall residential developments, retail space, and office buildings. The second largest area with the most workers was found to be the Baptist Hospital area with 4,400 employees. Concentration of higher number of workers by TAZ were also found in the center of the corridor around the Kendall Drive and HEFT intersection as shown in Figure 18.

The type of employment was also analyzed and the results are shown in Figure 19. The employment categories were grouped based on similarities in working hours. Service, Professional, Government, Education, etc. employees usually start the work day between 7:30 am and 9:00 am and finish typically between 4:30 pm and 6:00 pm. The Retail, Bar, Restaurant, Hotel and Amusement industries typically start later in the morning and stay return home later in the evening. These industry categories also remain open in the weekends. The third category, Construction, Manufacturing, Wholesale and Transportation can vary quite a lot. Not only by time but they are also not consistent in location.

In the corridor, 61% of the employment is in the Service, Professional, Government category. The second category is the Retail, Bar, Restaurant with 39%. The remaining 11% is Construction, Manufacturing. With the exception of Baptist hospital, the large employers are on the east end of the corridor. The unemployment rate (7%) within the study area is slightly higher compared to 6.0% in Miami-Dade County in March 2015.

The number of employees in the study area is expected to grow 35 % by the year 2040 shows the ranges for the future number of employees by TAZ. On the western part of the region, one area was identified to experience the highest percentage of growth (192 percent) to a total of 4,900 workers by the year 2040. This area is currently a vacant parcel located between SW 167 Avenue and SW 162 Avenue. Surrounding areas are also expected to experience significant growth. The number of workers is also expected to grow significantly in the central part of the corridor around the HEFT intersection, and on the eastern part of the corridor between SR-874 and US-1.



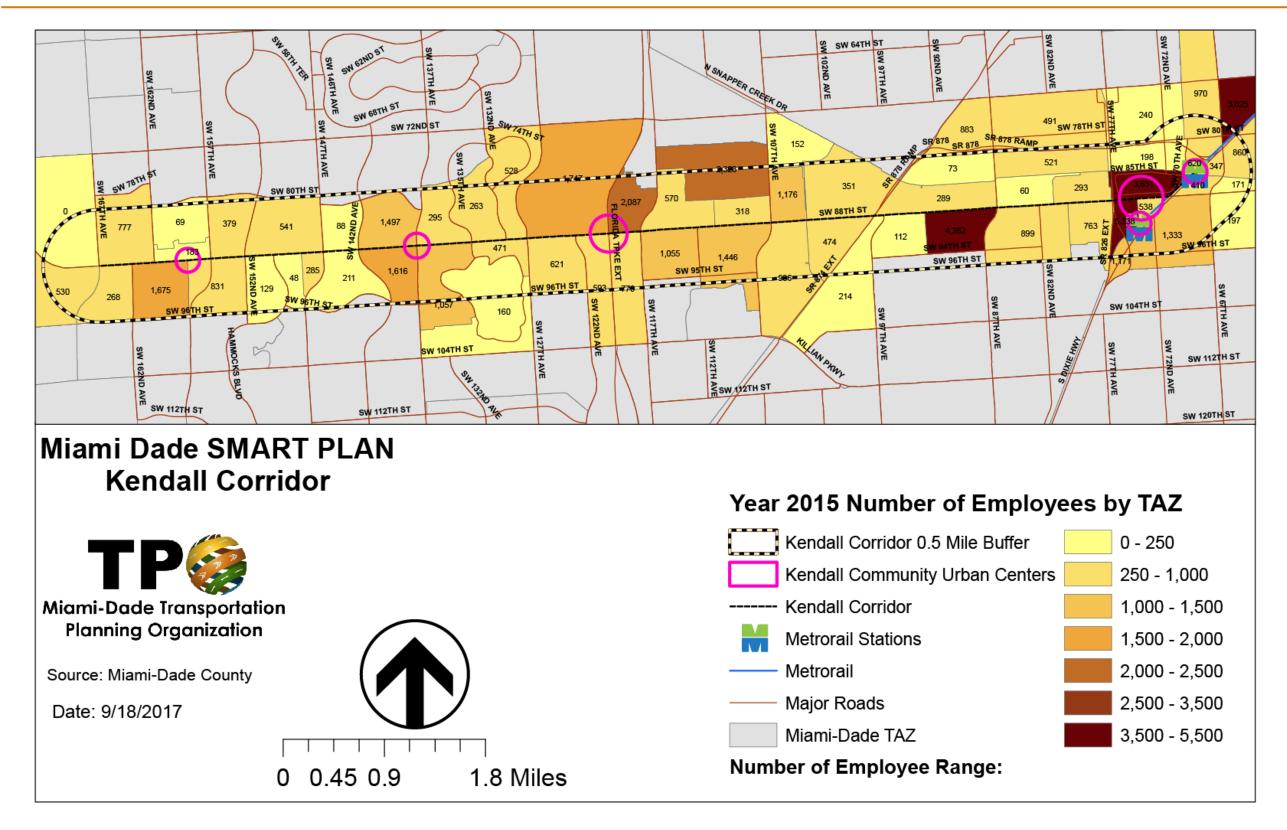


Figure 18 - Year 2015 Number of Employees by TAZ



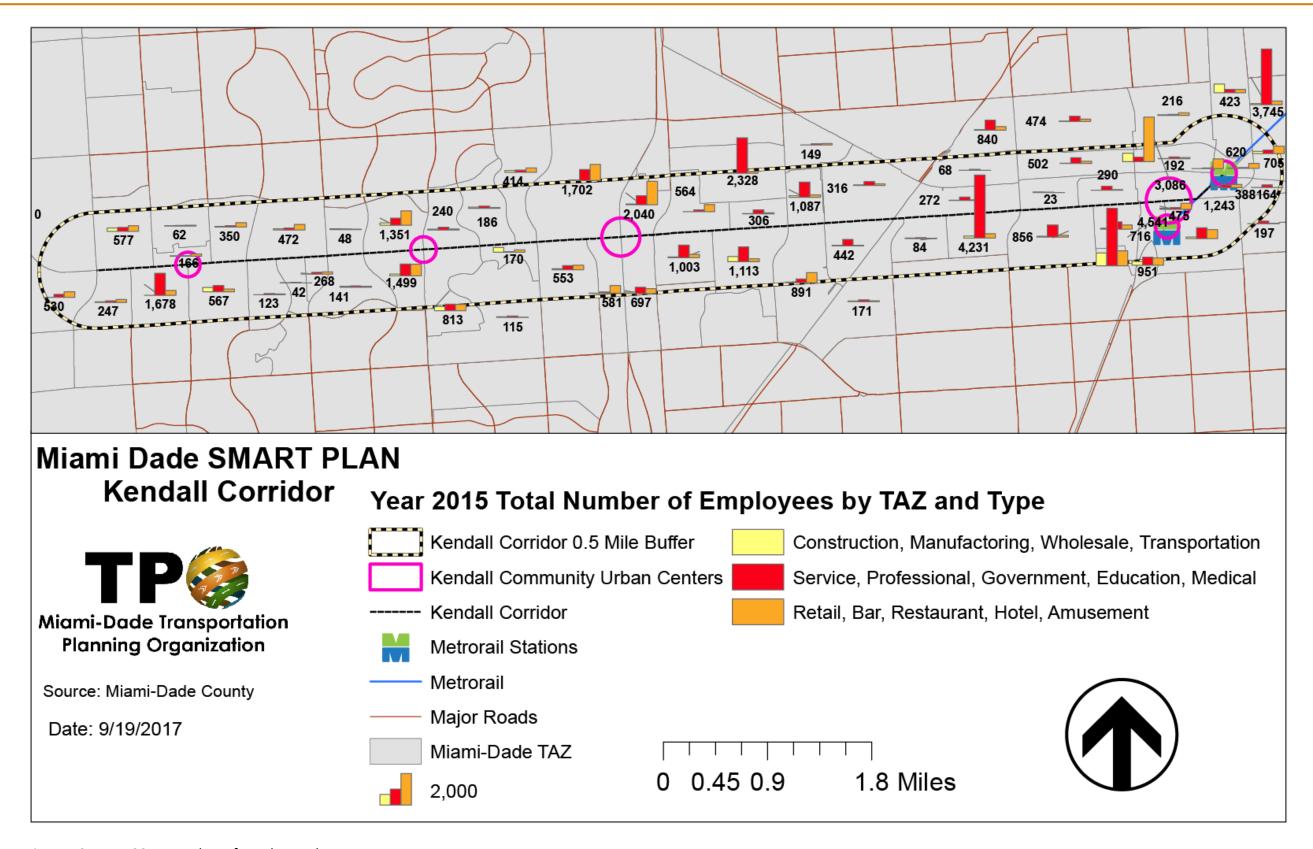


Figure 19 - Year 2015 Number of Employees by Type



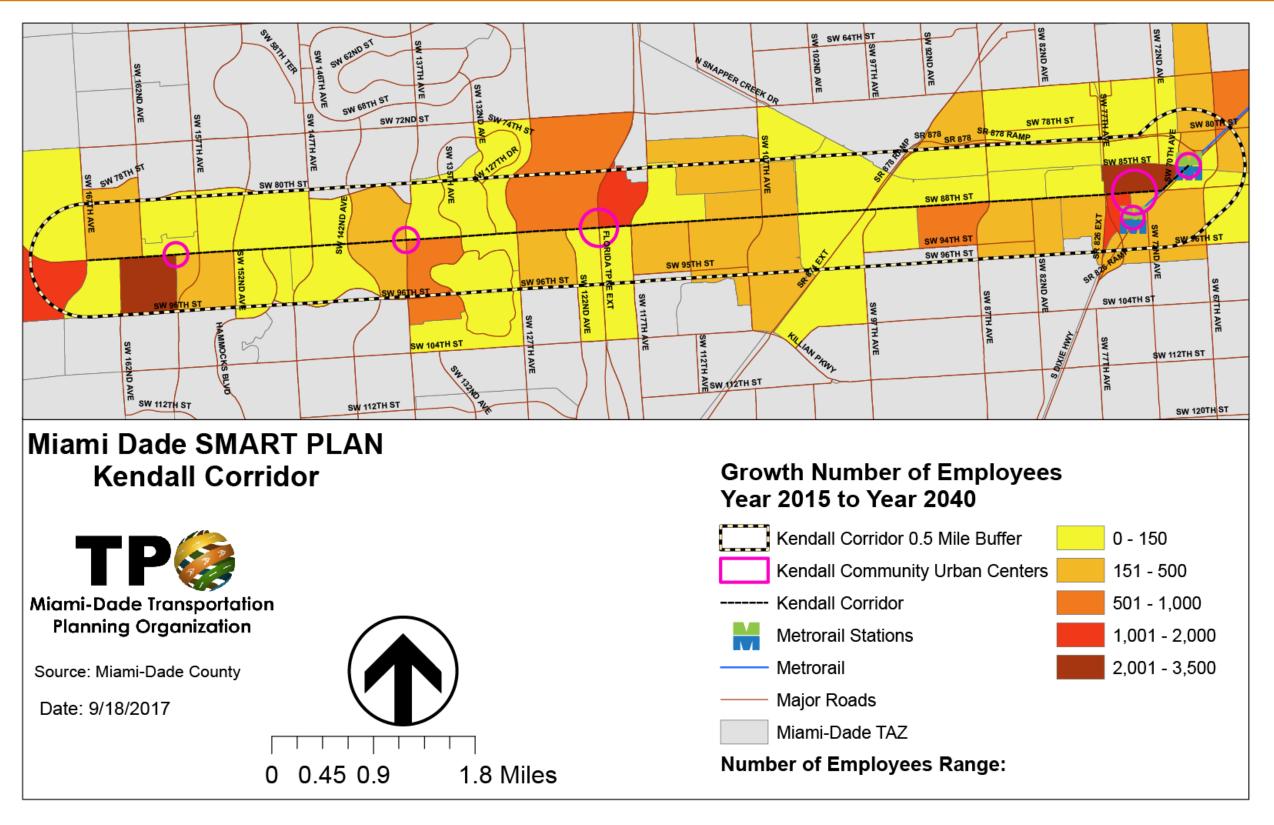


Figure 20 - Growth Number of Employees Year 2015 – Year 2040





## 3.2.6. School Enrollment

Based on data obtained from the Miami-Dade Regulatory and Economic Resources, there are four charter schools with a current total enrollment of 750 students, 21 private schools with a current enrollment of 9,103 students and 10 public grade Schools with a current enrollment of 9,151 students in the corridor. There are 7 colleges and higher education institutions in the corridor with a combined enrollment of 1,011 students (source SERPM-V7). Figure 21 shows the location of the grade schools and the colleges as well as the combined SERPM-V7 enrollment numbers for all institutions.



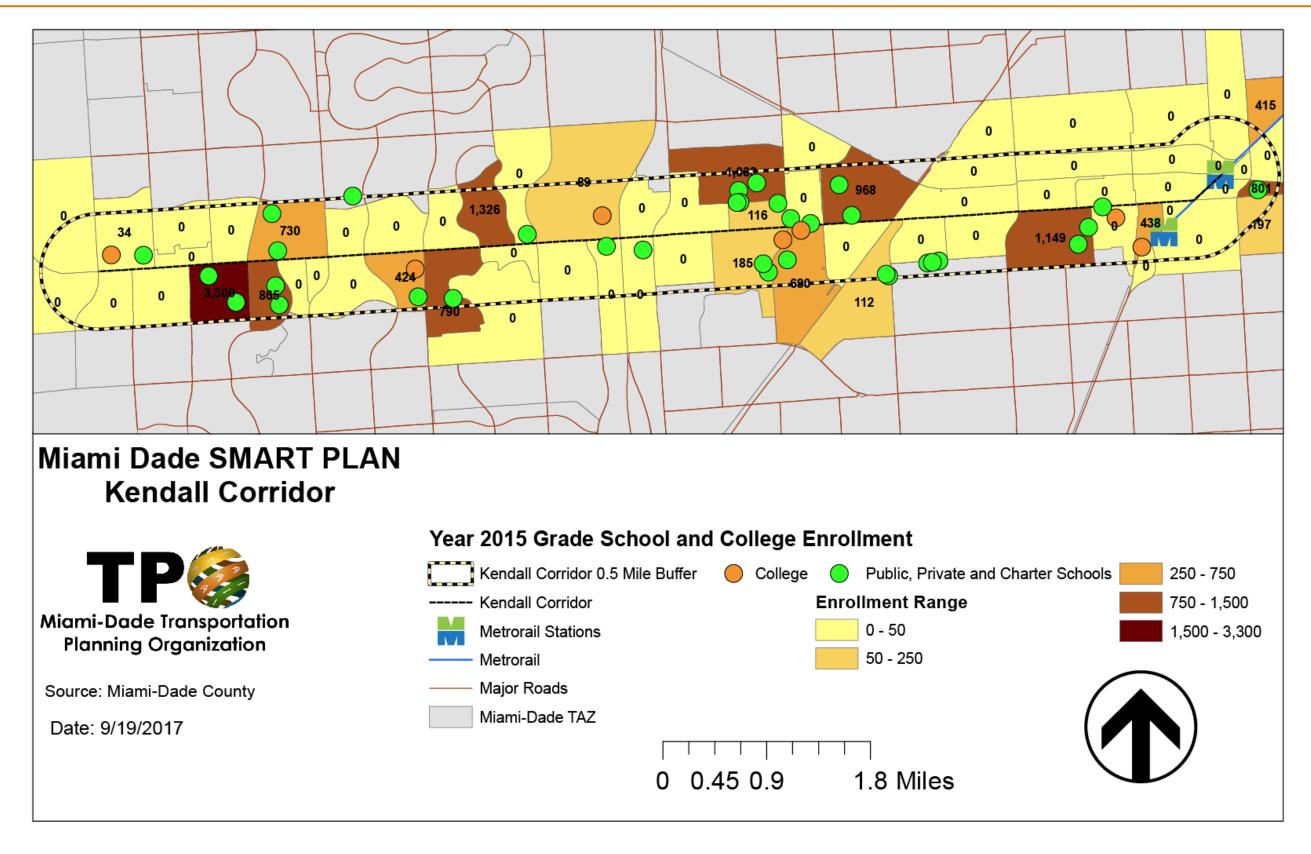


Figure 21 - Year 2015 Enrollment Grade School and College



## 3.2.7. Travel Characteristics

#### 3.2.7.1. Highway

Kendall Drive is a heavily congested arterial roadway where significant delays are experienced during peak hour periods. The most congested segments along Kendall Drive were found to be between SW 137<sup>th</sup> Avenue and SW 107<sup>th</sup> Avenue where the Annual Average Daily Traffic (AADT) ranges from approximately 81,000 vehicles per day (vpd) between SW 127 Avenue and SW 137th Avenue to approximately 59,000 vpd east of SW 107<sup>th</sup> Avenue<sup>23</sup>. Table 1 shows the AADT volumes calculated using available class count data and following FDOT's Project Traffic Projection Handbook criteria.

Table 1 - Annual Average Daily Traffic (AADT)- Kendall Corridor

| Location                            | ADDT   |
|-------------------------------------|--------|
| SW 88th Street E of SW 177th Avenue | 13,000 |
| SW 88th Street E of SW 157th Avenue | 47,000 |
| SW 88th Street E of SW 122nd Avenue | 66,000 |
| SW 88th Street E of SW 137th Avenue | 81,000 |
| SW 88th Street E of SW 117th Avenue | 53,000 |
| SW 88th Street E of SW 107th Avenue | 59,000 |
| SW 88th Street E of SW 97th Avenue  | 38,000 |
| SW 88th Street E of SW 87th Avenue  | 46,000 |
| SW 88th Street E of SW 73rd Place   | 39,000 |

In the figure below, the central portion of the corridor operates under severe congestion (LOS F) during peak periods and in the peak direction. Travel demand is projected to grow as population and employment increases in the region.

<sup>&</sup>lt;sup>23</sup> Kendall Drive Rapid Transit PD&E Study, FDOT, August 2017.



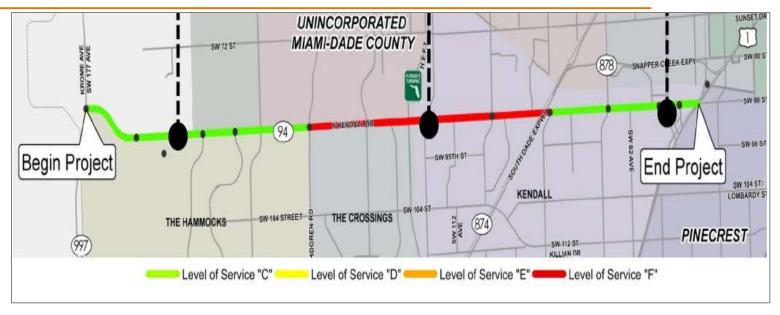


Figure 22 - Kendall Drive LOS Analysis<sup>24</sup>

Four public parking facilities are located along the Corridor. Table 2 list the number of spaces at the facilities, while Figure 23 provides the location of the lots.

<sup>&</sup>lt;sup>24</sup> http://www.fdotmiamidade.com/kendallrapidtransit.html



Table 2 - Public Parking Facilities – Kendall Corridor

| Public Parking Facility                       | Total Spaces | Disabled Spaces |
|---|--------------|-----------------|
| West Kendall Transit Terminal (SW 162 Avenue) | 40           |                 |
| Kendall Drive and SW 150 Avenue               | 109          |                 |
| Kendall Drive and SW 127 Avenue               | 180          |                 |
| Dadeland South Metrorail Station              | 1,254        | 20              |
| Dadeland North Metrorail Station              | 1,963        | 69              |

## 3.2.7.2. Transit

Existing transit service on Kendall Drive (Figure 24) is comprised of bus service operating in mixed traffic. The transit routes primarily serving Kendall Drive are Routes 88 and Route 288. Route 88 provides services along Kendall Drive at Dadeland North Metrorail station, Dadeland Mall, Kendall Drive/SW 150 Avenue Park & Ride Lot, West Kendall Transit Terminal/Park & Ride Lot. Route 288 is a weekday-rush-hour service only and provides service at West Kendall Transit Terminal/Park & Ride Lot, SW 150 Avenue Park & Ride Lot, SW 127 Avenue Park & Ride Lot (288A), Kendall Drive and Dadeland North Metrorail station.<sup>25</sup>

<sup>&</sup>lt;sup>25</sup> http://www.miamidade.gov/transit/routes\_detail.asp?route=288



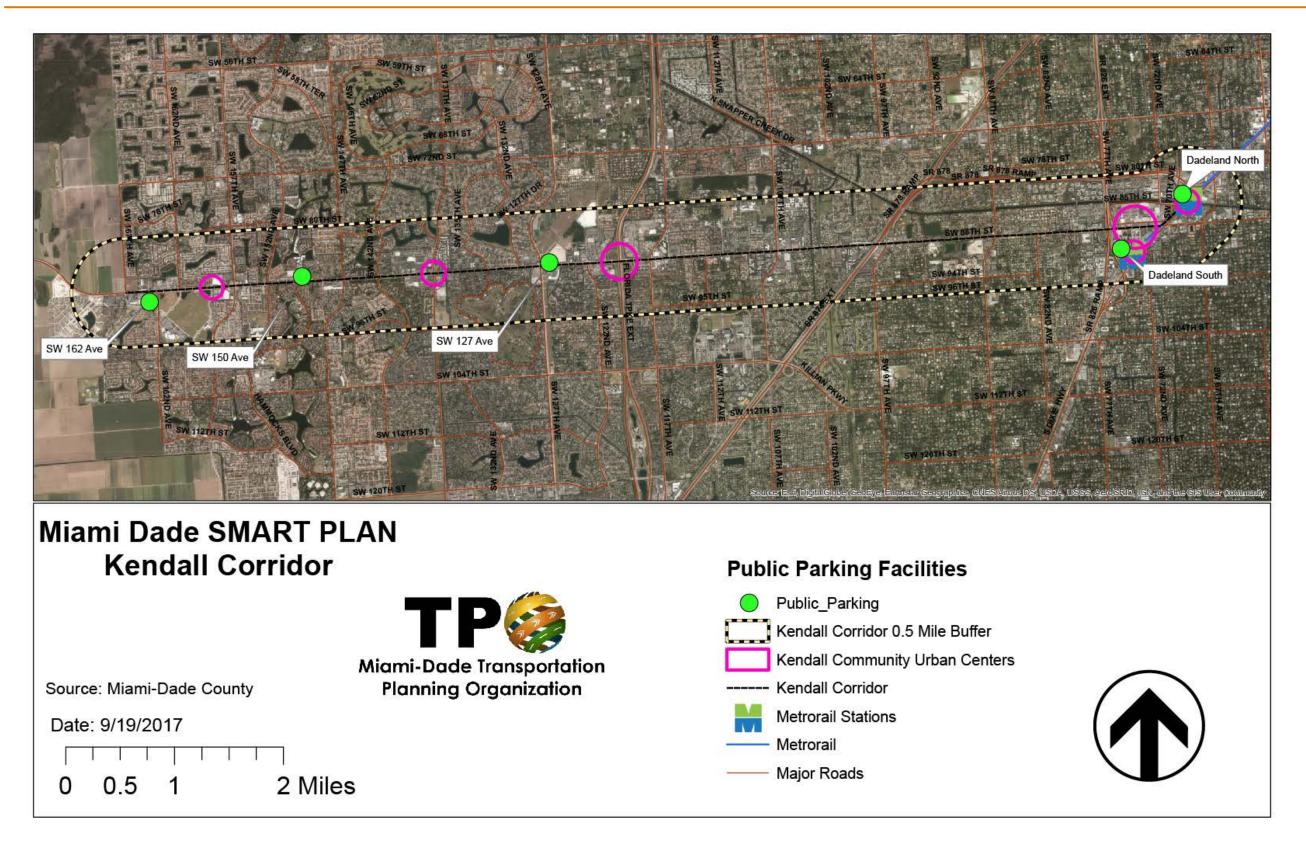


Figure 23 - Public Parking Facilities



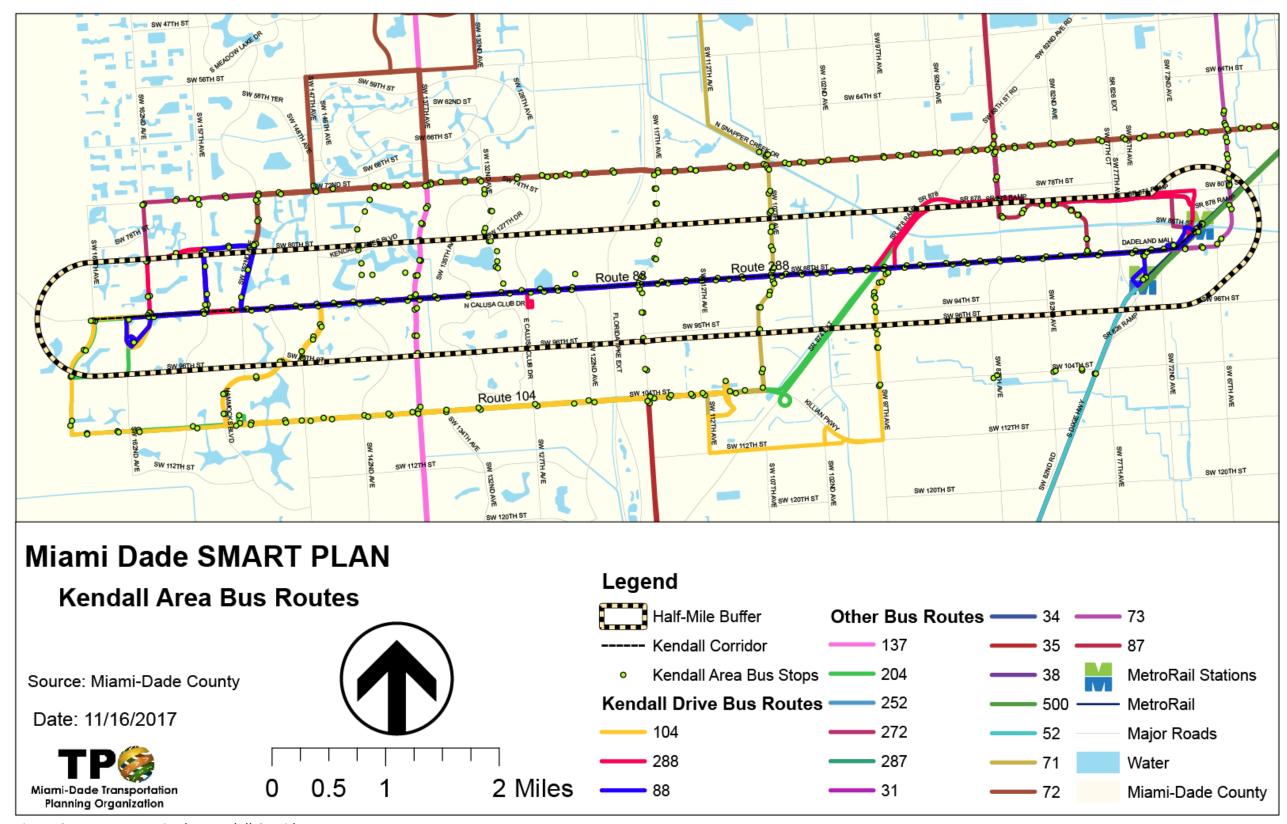


Figure 24 - Bus Routes in the Kendall Corridor



Another route providing service in the study area is Route 104 which operates along Kendall Drive between the West Kendall Transit Terminal and SW 147 Avenue in the West as well as between SW 97 Avenue and Dadeland North Metrorail station in the Eastern portions of the Corridor. Between these sections where it operates on Kendall, Route 104 operates primarily along Killian Drive serving the Miami-Dade College Campus.

Routes 137, 71, 87 and 73 offer North-South service and intersect with the Kendall Corridor. Weekday, peak-only routes 204 and 272 provide service parallel to Kendall and, similar to the 288, these routes operate between the West Kendall Transit Terminal in the West and Dadeland North in the East.

Table 3 provides a quick overview of the transit services and the average weekday ridership numbers of the routes that serve the corridor and the different Community Urban Centers. The Metrorail accounts for 68,600 average weekday riders. If we exclude these riders from the Dadeland South, North & Downtown Kendall Center, the average weekday ridership would be 17,155.

Table 3 - Summary Average Weekday Ridership – Kendall Corridor Community Urban Center

| Carrama ita dalam Carrata   | May-17                                      |                           |                     |  |  |
|-----------------------------|---|---------------------------|---------------------|--|--|
| Community Urban Center Name | Transit Line                                | Average Weekday Ridership |                     |  |  |
| Name                        |   | Number                    | Percent of Corridor |  |  |
| 158th                       | 72,88,104,288                               | 5,064                     | 5%                  |  |  |
| 137th                       | 88,288,137                                  | 4,993                     | 5%                  |  |  |
| HEFT                        | 88,288                                      | 3,179                     | 3%                  |  |  |
| Dadeland South, North &     |   |                           | 91%                 |  |  |
| Downtown Kendall            | 31,34,38,52,73,88,252,287,500, RA           | 86,755                    | 91%                 |  |  |
|                             | 31,34,38,52,71,72,73,87,88,104,136,137,204, |                           |                     |  |  |
| Kendall Corrridor Total     | 252,272,287,288,500, RA                     | 95,670                    |                     |  |  |

Figures 25 and 26 show the weekday average boarding by stop for route 88, while Figures 27 and 28 show the average daily boarding by stop for route 288. Route 288 has an average weekday boarding of 879, and route 88 has average weekday boarding of 2,707.

For route 88, boarding are the highest at the West Kendall Transit terminal, SW 137 Avenue, and SW 107 Avenue on the eastbound direction. Alightings are the highest at SW 137 Avenue, SW 154, and West Kendall Transit terminal on the westbound direction. The end-to-end trip times on the local bus service (Route 88) during the peak period is approximately double the free-flow trip time, increasing from 32 to 58 minutes

Route 288 boarding on the eastbound direction are the highest at the West Kendall Transit Terminal and SW 147 Avenue, SW 143 Avenue, and SW 137 Avenue. For the westbound direction



the alightings are the highest at SW 107 Avenue, SW 137 Avenue, and West Kendall Transit Terminal as shown below.

A five year ridership analysis was conducted for route 88 and 288, and it was found that there has been a 15.5 percent decrease in ridership from 2012 to 2016. This trend is shown in Figure 29 and 30.

Route 88 displayed an 11.3 percent decrease from 2014 to 2016. This is consistent with Miami-Dade metrobus ridership trends. The national downward trend in transit ridership can be attributed to the sometimes long and complicated process of using public transit, and the ever growing popularity of other transportation options such as Uber and Lyft that in many cases can result in a less expensive and faster mode of transportation.<sup>26</sup>

<sup>&</sup>lt;sup>26</sup> http://www.govtech.com/fs/perspectives/How-Smart-Cities-Can-Increase-Public-Transit-Ridership-Industry-Perspective.html



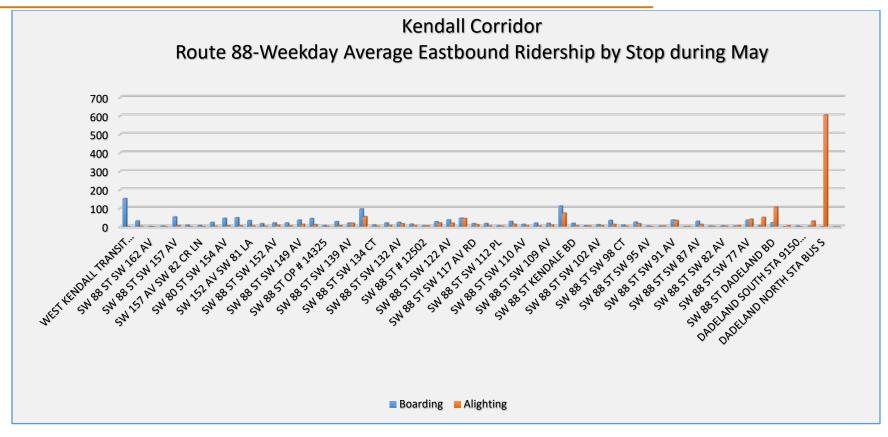


Figure 25 - Route 88 Total Eastbound Daily Ridership by Stop



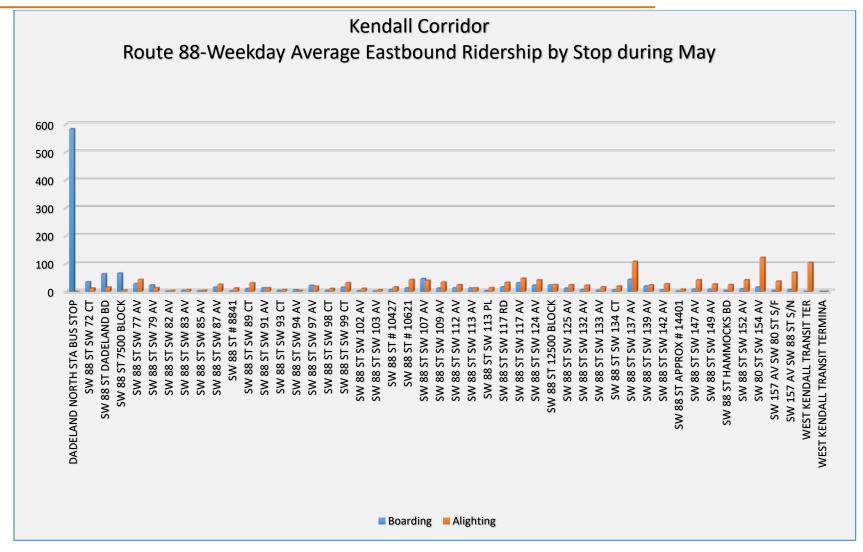


Figure 26 - Route 88 Total Westbound Daily Ridership by Stop



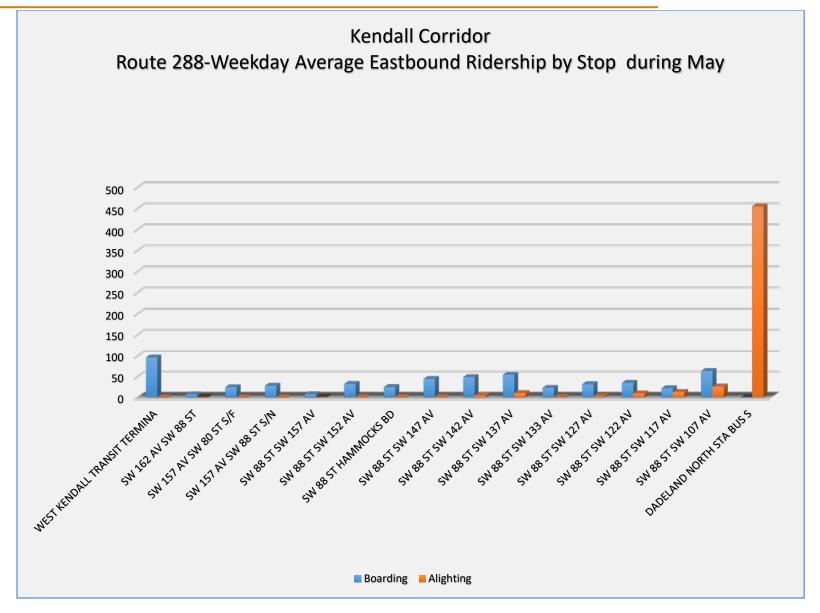


Figure 27 - Route 288 Total Eastbound Daily Ridership by Stop



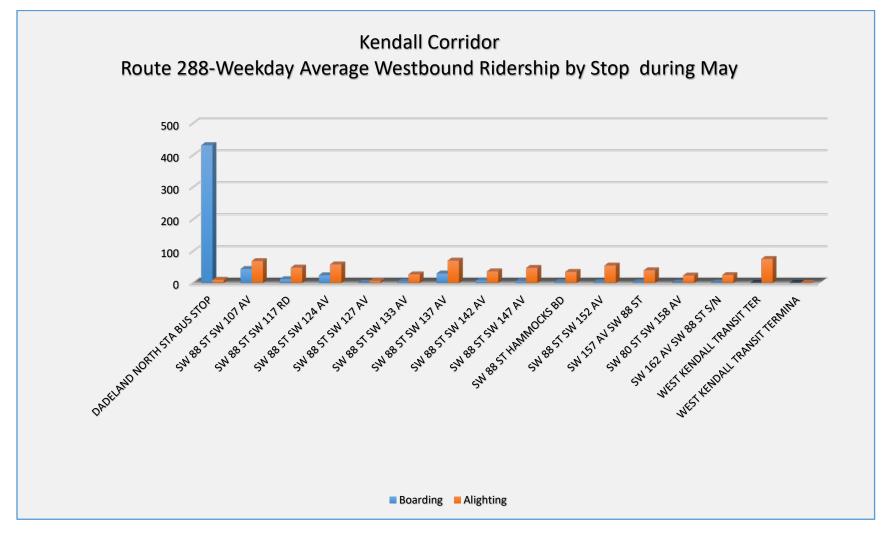


Figure 28 - Route 288 Total Westbound Daily Ridership by Stop



The average is calculated from average weekday throughout the year or just in May of each year.

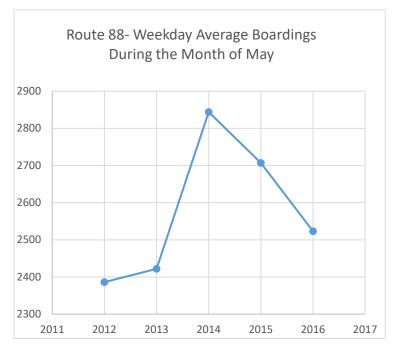


Figure 29 - Route 88 five-year Bus Ridership During the Month of May

ROUTE 88- Average Weekday Boardings During the Month of May

|      | iviay    |
|------|----------|
|      | Average  |
| Year | Boarding |
| 2016 | 2523     |
| 2015 | 2,707    |
| 2014 | 2844     |
| 2013 | 2422     |
| 2012 | 2386     |

| 1000 | ouring th | e Montl | n of May |  |
|------|-----------|---------|----------|--|
| 980  |           |         |          |  |
| 960  |           |         |          |  |
| 940  |           |         |          |  |
| 920  |           |         |          |  |
| 900  |           |         |          |  |
| 880  |           |         |          |  |
| 860  |           |         |          |  |
| 840  |           |         |          |  |
| 820  |           |         |          |  |

ROUTE 288- May Average Weekday Boardings During the Month of May

| Year | Average Boarding |
|------|------------------|
| 2016 | 833              |
| 2015 | 879              |
| 2014 | 931              |
| 2013 | 984              |
| 2012 | 986              |

Figure 30 - Route 288 five-year Bus ridership During the Month of May



#### 3.2.7.3. Pedestrian and Bicycle

In order to asses a multimodal level of service (LOS) for the pedestrian and bicyclist's experience, the Florida Quality Level of Service Handbook 2013 methodologies was used to determine the LOS measures for bicycles, and pedestrian modes. The Quality Level of Service Handbook focuses on the bicyclist perspective of safety when sharing the road with vehicles. For this reason, the Q/LOS measures are based on facility attributes such as average effective speed of the outside lane, motorized vehicles volumes, motorized vehicles speeds, heavy truck traffic volumes, and pavement conditions.<sup>27</sup>

The equation below was used to determine a numerical LOS score. This numerical score usually ranges from 0.5 to 6.5.

#### **Equation 1. Bicycle Level of Service Score**

 $BLOS = 0.507 \ln (Vol15/L) + 0.199SPt(1 + 10.38HV)2 + 7.066(1/PR5)2 - 0.005(We)2 + 0.760$ 

#### Where:

- BLOS = Bicycle level of service score
- In = Natural log
- Vol15 = Directional motorized vehicle count in the peak 15 minute time period
- L = Total number of directional through lanes
- SPt = Effective speed factor = 1.1199 Ln(SPp 20) + 0.8103
- SPp = Posted speed limit (a surrogate for average running speed)
- HV = Percentage of heavy vehicles
- PR5 = FHWA's five point pavement surface condition rating
- We = Average effective width of outside through lane here

Once the numerical is determined, it's stratified to a LOS letter grade, as shown in Table 4.

 $<sup>^{27}</sup> http://www.fdot.gov/planning/systems/programs/SM/los/pdfs/2013\%20QLOS\%20Handbook.pdf$ 



Table 4 - FDOT Bicycle and Pedestrian LOS Score Threshold

| FDOT Bicycle and Pedestrian LOS Score Threshold |                 |  |
|---|-----------------|--|
| LOS   | Score           |  |
| Α   | <1.5            |  |
| В   | >1.5 and <2.5   |  |
| С   | C >2.5 and <3.5 |  |
| D   | >3.5 and<4.5    |  |
| Е   | >4.5 and <5.5   |  |
| F   | >5.5            |  |

# Bike Level of Service

For the purpose of this study the most representative segments were used to determine the overall bike level of service for the western part at SW 147 Avenue, the central part at SW 127 Avenue, and the eastern part at SW 107 Avenue. The selection was based on attributes such as road geometry, traffic volumes, and location. The LOS was calculated for the eastbound and westbound direction.

Traffic counts were obtained from existing reports, physical attributes of the roadway were determined by field observations, and aerial imageries and measure features in Google Earth. The highest 15-minute traffic count was selected for the purpose of this study which fell in the PM for westbound direction and in the AM for the eastbound direction.

Table 5 - Pedestrian and Bicycle LOS

| Intercepting Dood clans               | Pedes   | trian LOS   | Bicycle LOS       |      |  |
|---------------------------------------|---------|-------------|-------------------|------|--|
| Intersecting Road along Kendall Drive | Weekday | / Peak Hour | Weekday Peak Hour |      |  |
| Kendan Drive                          | WB      | EB          | WB                | EB   |  |
| SW 107 Avenue                         | D       | D           | E                 | E    |  |
| SW 127 Avenue                         | D       | D           | E                 | Е    |  |
| SW 147 Avenue                         | D       | D           | E                 | Е    |  |
|                                       |         |             |                   |      |  |
| PEAK HOUR                             | (PM)    | (AM)        | (PM)              | (AM) |  |

The calculation the level of service (LOS) for bicycles stays constant at an undesirable LOS E. This can be attributed to high volumes of vehicle traffic during the AM and PM peak hours, and absence of bike lanes. Based on these calculations, it can be determined that a bicyclists would not feel safe and comfortable sharing the road with moving traffic during the peak hours along the Kendall Corridor.



#### Pedestrian Level of Service

The Florida Quality Level of Service Handbook accounts for different factors such as pedestrian perception and facility attributes to determine pedestrian LOS. The analysis tries to quantify and analyze factors that would contribute or influenced a pedestrian's perception of quality when using a sidewalk. These factors include the existence of sidewalks, lateral separation from pedestrian and moving traffic, traffic volumes, and average vehicle speeds. FDOT uses the equation below to determine the Pedestrian LOS (PLOS).<sup>28</sup>

## **Equation 2. Pedestrian Level of Service Score**

**PLOS** = -1.2276 ln (Wol + Wl + fp × %OSP + fb × Wb + fsw × Ws) + 0.0091 (Vol15/L) + 0.0004 SPD2 + 6.0468

#### Where:

- PLOS = Pedestrian level of service score
- Ln = Natural log
- Wol = Width of outside lane
- WI = Width of shoulder or bicycle lane
- fp = On-street parking effect coefficient (=0.20)
- %OSP = Percent of segment with on-street parking
- fb = Buffer area barrier coefficient (=5.37 for trees spaced 20 feet on center)
- Wb = Buffer width (distance between edge of pavement and sidewalk, feet)
- fsw = Sidewalk presence coefficient (= 6 0.3Ws)
- Ws = Width of sidewalk
- Vol15 = Count of motorized vehicles in the peak 15 minute period
- L = Total number of directional through lanes
- SPD = Average running speed of motorized vehicle traffic (mi/hr)

Once the numerical score is determined, it is stratified to a LOS letter grade, as shown in Table 4.

For the purpose of this study the most representative segments were used to determine the overall pedestrian level of service for the western part at SW 147 Avenue, the central part at SW 127 Avenue, and the eastern part at SW 107 Avenue. The selection was based on attributes such as road geometry, traffic volumes, and location. The LOS was calculated for the eastbound and westbound direction.

<sup>&</sup>lt;sup>28</sup>http://www.fdot.gov/planning/systems/programs/SM/los/pdfs/2013%20QLOS%20Handbook.pdf



Traffic counts were obtained from an existing report, physical attributes of the roadway were determined by field observations, and aerial imageries and measure features in Google Earth. The highest 15-minute traffic count was selected for the purpose of this study which fell in the PM for westbound direction and in the AM for the eastbound direction.

Both approaches have an acceptable pedestrian LOS (D), and this can be attributed to the presence of sidewalks along the corridor. From these results it can be determined that pedestrians should feel safe and comfortable using the sidewalks. Better results can be achieved by creating buffer zones between moving traffic and pedestrian, and widening sidewalks.

#### 3.2.7.4. Travel Patterns

The travel patterns analyzed on the Kendall Corridor focused on work flows along the corridor. Work trips make up more than 15% of the total daily traffic and are therefore the single most contributing factor to traffic congestion during peak hours. The analysis was conducted using the Longitudinal Employer-Household Dynamics (LEHD) data and the ACS/Census Transportation Planning Product (CTPP) data. The ACS/CTPP data is released periodically and at different geographic levels. Only the 5-year data has the geographic details that allow users to perform analysis for areas smaller than county. The most recent 5-year ACS/CTPP data available is for years 2006-2010.

The work flow travel pattern analysis was performed for the Kendall Corridor for both its residents that reside within the corridor but work in and out of the area; and for workers that work within the corridor but live in or out of the area.

The profile of the workers that reside in the Kendall Corridor is summarized by where they work, how they get to work, what time they leave, and the length of their driving time. Table 6 shows the profile of the workers residing in the Corridor.



Table 6 - Profile for Workers Residing in the Kendall Corridor

| Categories   | Count  | Share        |
|--|--------|--------------|
| Total Number of Resident Workers                                       |        |              |
|  | 36,833 | 100.0%       |
| Jobs by Worker Age   |        |              |
| Age 29 or younger  | 7,258  | 19.7%        |
| Age 30 to 54   | 21,054 | 57.2%        |
| Age 55 or older  | 8,521  | 23.1%        |
| Jobs by Earnings   |        |              |
| \$1,250 per month or less  | 7,731  | 21.0%        |
| \$1,251 to \$3,333 per month   | 13,523 | 36.7%        |
| More than \$3,333 per month  | 15,579 | 42.3%        |
| Jobs by NAICS Industry Sector  |        |              |
| Agriculture, Forestry, Fishing and Hunting                             | 176    | 0.5%         |
| Mining, Quarrying, and Oil and Gas Extraction                          | 12     | 0.0%         |
| Utilities  | 96     | 0.3%         |
| Construction   | 1,277  | 3.5%         |
| Manufacturing  | 971    | 2.6%         |
| Wholesale Trade  | 2,287  | 6.2%         |
| Retail Trade   | 4,814  | 13.1%        |
| Transportation and Warehousing   | 1,732  | 4.7%         |
| Information  | 775    | 2.1%         |
| Finance and Insurance  | 1,955  | 5.3%         |
| Real Estate and Rental and Leasing                                     | 848    | 2.3%         |
| Professional, Scientific, and Technical Services                       | 2,731  | 7.4%         |
| Management of Companies and Enterprises                                | 362    | 1.0%         |
| Administration & Support, Waste Management and Remediation             | 2,469  | 6.7%         |
| Educational Services   | 3,638  | 9.9%         |
| Health Care and Social Assistance                                      | 5,691  | 15.5%        |
| Arts, Entertainment, and Recreation                                    | 524    | 1.4%         |
| Accommodation and Food Services  | 3,511  | 9.5%         |
| Other Services (excluding Public Administration) Public Administration | 1,273  | 3.5%<br>4.6% |
|  | 1,691  | 4.0%         |
| Jobs by Worker Race  |        |              |
| White Alone  | 32,654 | 88.7%        |
| Black or African American Alone  | 2,429  | 6.6%         |
| American Indian or Alaska Native Alone                                 | 151    | 0.4%         |
| Asian Alone  | 1,101  | 3.0%         |
| Native Hawaiian or Other Pacific Islander Alone                        | 34     | 0.1%         |
| Two or More Race Groups  | 464    | 1.3%         |
| Jobs by Worker Ethnicity   |        |              |
| Not Hispanic or Latino   | 13,282 | 36.1%        |
| Hispanic or Latino   | 23,551 | 63.9%        |
| Jobs by Worker Educational Attainment                                  |        |              |
| Less than high school  | 6,011  | 16.3%        |
| High school or equivalent, no college                                  | 6,951  | 18.9%        |
| Some college or Associate degree                                       | 8,939  | 24.3%        |
| Bachelor's degree or advanced degree                                   | 7,674  | 20.8%        |
| Educational attainment not available (workers aged 29 or younger)      | 7,258  | 19.7%        |
| Jobs by Worker Sex   |        |              |
| Male   | 17,737 | 48.2%        |
| Female   | 19,096 | 51.8%        |



According to the ACS data, approximately 36,900 workers live in the Kendall Corridor. Figure 31 lists the top 25 cities or Census Designated Places (CDP) in South Florida where residents of the Kendall Corridor were employed. These locations are graphically displayed in Figure 32.

More than 20% of the residents (7,583) worked in the City of Miami. Only 8% (2,950) worked locally within the Kendall area. Coral Gables and Doral also employed more than 2,000 residents from the Kendall Corridor. The local residents traveled as far as Boca Raton to work.

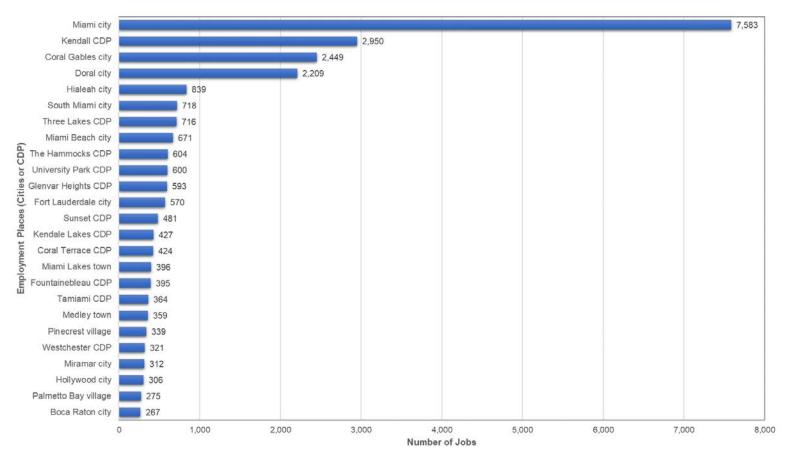


Figure 31 - Top 25 Work Locations for Kendall Corridor Residents

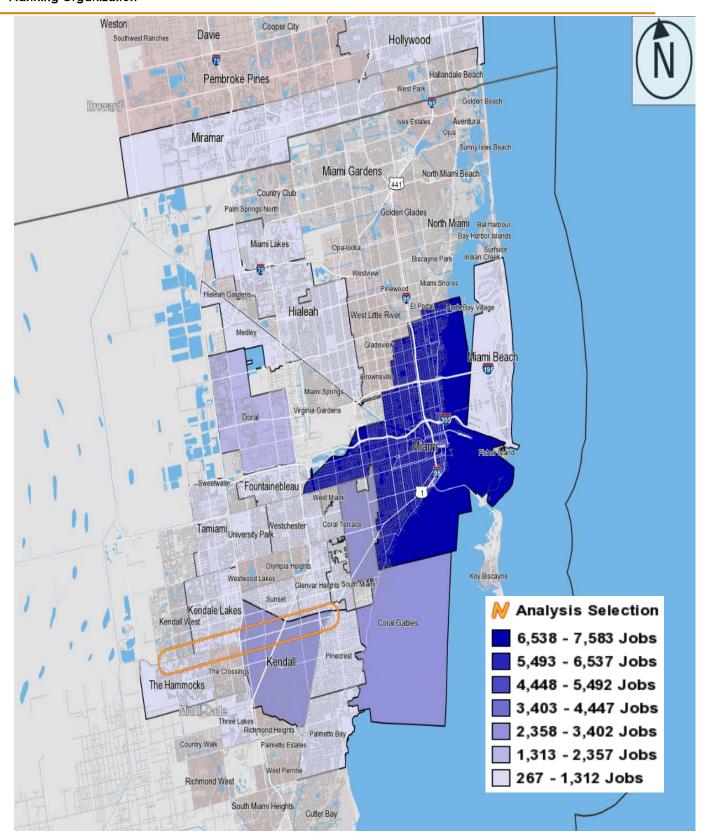


Figure 32 - Top 25 Work Locations for Kendall Corridor Residents

Figure 33 shows the distribution of Means of Transportation (MOT) to work as reported in the 2006-2010 ACS/CTPP data for Kendall Corridor residents. It is clear that Drive Alone is still the predominant mode of transportation for people to go to work. Nearly 80% of Kendall residents went to work driving alone. About 10% of the people shared a ride with other people. Public Transportation made up about 4% of the total. Close to 2% of the people went to work by bike or walk. Approximately 4% of the residents worked at home. Figure 34 shows the distribution of time leaving home to work according to the 2006-2010 ACS/CTPP data for Kendall Corridor residents that did not work at home. About 15% of the residents left home for work between 7:00am and 7:15am, and roughly 14% left between 8:00am and 8:15am.

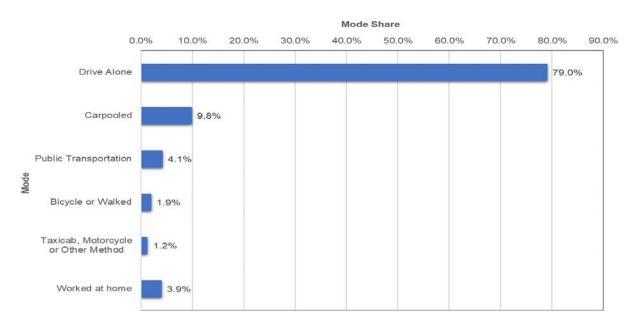


Figure 33 - Means of Transportation to Work for Kendall Residents



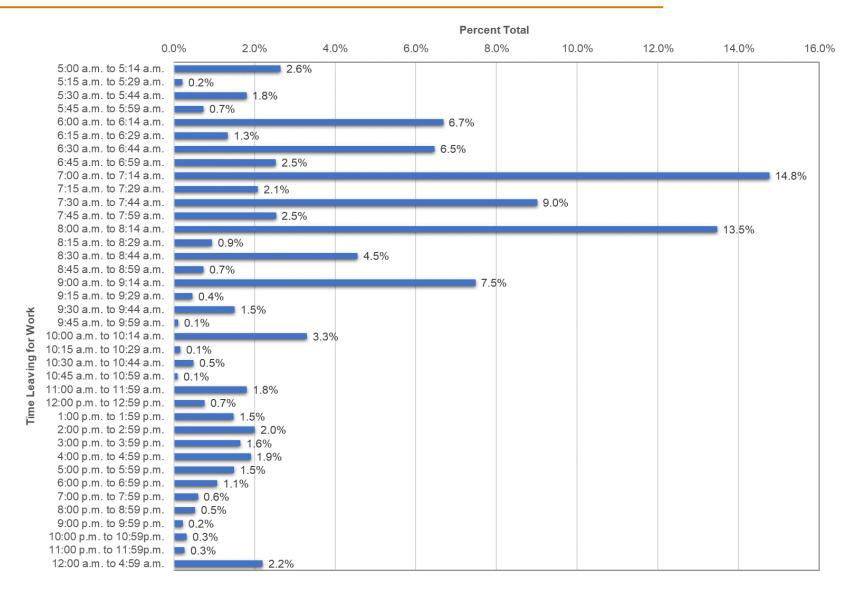


Figure 34 - Timing Leaving for Work for Kendall Residents



Next, the profile for people who work in the Kendall Corridor and live inside or outside the corridor is summarized. According to the ACS data, the total number of workers in the Kendall Corridor is approximately 40,900. Table 7 list the profile of the workers who work in the Corridor. Figure 35 lists the top 25 cities or census designated places (CDP) in South Florida where workers employed in the Kendall Corridor lived. These locations are graphically displayed in Figure 36. The residence locations of the Kendall workers seem to spread across the entire region. Only 60% of the workers lived in the top 25 cities and CDPs. The City of Miami and Kendall CDP had the largest number of Kendall workers with about 7%, or 3,000 workers in each place. About 5% (2,000) of Kendall workers resided in the Hammocks CDP.

Figure 37 shows the distribution of Means of Transportation (MOT) to work as reported in the 2006-2010 ACS/CTPP data for Kendall Corridor workers. Similar to Kendall residents, Drive Alone is still the predominant mode of transportation for people to go to work. More than 80% of Kendall workers drive to work alone. About 9% of the workers carpooled with other people. Public Transportation made up about 3% of the total travel. Close to 2% of the people bike or walk to work. More than 5% of the Kendall employees worked at home

Figure 38 shows the distribution of time arriving at work according to the 2006-2010 ACS/CTPP data for Kendall Corridor workers that did not work at home. About 9% of the workers arrived at work between 8:00 am and 8:15 am. Approximately 6% of the workers arrived at work during the two 15-minutes intervals before 8:00 am, from 7:30 am to 7:45 am and from 7:45 am to 8:00 am. Almost equal number of workers arrive at work during the two 15-minutes intervals after 8:15 am, from 8:15 am to 8:30 am and from 8:30 am to 8:45 am.

Figure 39 illustrates the distribution of travel time to work based on the 2006-2010 ACS/CTPP data for Kendall Corridor workers that did not work at home. About one-third (1/3) of the workers traveled less than 20 minutes to work. Slightly over 22% of the workers traveled between 20 and 29 minutes to work. Nearly 30% of the workers spent 30 to 44 minutes on the road to work. More than 8% of the workers travelled more than one-hour to get to their workplaces. The average travel time was 30.6 minutes.

Table 7 - Profile for Workers employed in the Kendall Corridor

| Categories  | Count  | Share  |
|---|--------|--------|
| Total Number of Workers   |        |        |
|   | 40,882 | 100.0% |
| Jobs by Worker Age  |        |        |
| Age 29 or younger   | 11,219 | 27.4%  |
| Age 30 to 54  | 21,492 | 52.6%  |
| Age 55 or older   | 8,171  | 20.0%  |
| Jobs by Earnings  |        |        |
| \$1,250 per month or less   | 11,204 | 27.4%  |
| \$1,251 to \$3,333 per month                                      | 16,900 | 41.3%  |
| More than \$3,333 per month                                       | 12,778 | 31.3%  |
| Jobs by NAICS Industry Sector                                     |        |        |
| Agriculture, Forestry, Fishing and Hunting                        | 2      | 0.0%   |
| Mining, Quarrying, and Oil and Gas Extraction                     | 0      | 0.0%   |
| Utilities   | 1      | 0.0%   |
| Construction  | 356    | 0.9%   |
| Manufacturing   | 224    | 0.5%   |
| Wholesale Trade   | 1,022  | 2.5%   |
| Retail Trade  | 10,923 | 26.7%  |
| Transportation and Warehousing                                    | 359    | 0.9%   |
| Information   | 449    | 1.1%   |
| Finance and Insurance   | 1,718  | 4.2%   |
| Real Estate and Rental and Leasing                                | 361    | 0.9%   |
| Professional, Scientific, and Technical Services                  | 3,502  | 8.6%   |
| Management of Companies and Enterprises                           | 705    | 1.7%   |
| Administration & Support, Waste Management and Remediation        | 2,899  | 7.1%   |
| Educational Services  | 1,365  | 3.3%   |
| Health Care and Social Assistance                                 | 11,102 | 27.2%  |
| Arts, Entertainment, and Recreation                               | 246    | 0.6%   |
| Accommodation and Food Services                                   | 4,615  | 11.3%  |
| Other Services (excluding Public Administration)                  | 796    | 1.9%   |
| Public Administration   | 237    | 0.6%   |
| Jobs by Worker Race   |        |        |
| White Alone   | 32,584 | 79.7%  |
| Black or African American Alone                                   | 6,380  | 15.6%  |
| American Indian or Alaska Native Alone                            | 180    | 0.4%   |
| Asian Alone   | 1,213  | 3.0%   |
| Native Hawaiian or Other Pacific Islander Alone                   | 34     | 0.1%   |
| Two or More Race Groups   | 491    | 1.2%   |
| Jobs by Worker Ethnicity  |        |        |
| Not Hispanic or Latino  | 20,496 | 50.1%  |
| Hispanic or Latino  | 20,386 | 49.9%  |
| Jobs by Worker Educational Attainment                             |        |        |
| Less than high school   | 5,758  | 14.1%  |
| High school or equivalent, no college                             | 7,139  | 17.5%  |
| Some college or Associate degree                                  | 9,237  | 22.6%  |
| Bachelor's degree or advanced degree                              | 7,529  | 18.4%  |
| Educational attainment not available (workers aged 29 or younger) | 11,219 | 27.4%  |
|   | , •    |        |
| Jobs by Worker Sex  | 40.040 | 40.70/ |
| Male  | 16,640 | 40.7%  |
| Female  | 24,242 | 59.3%  |



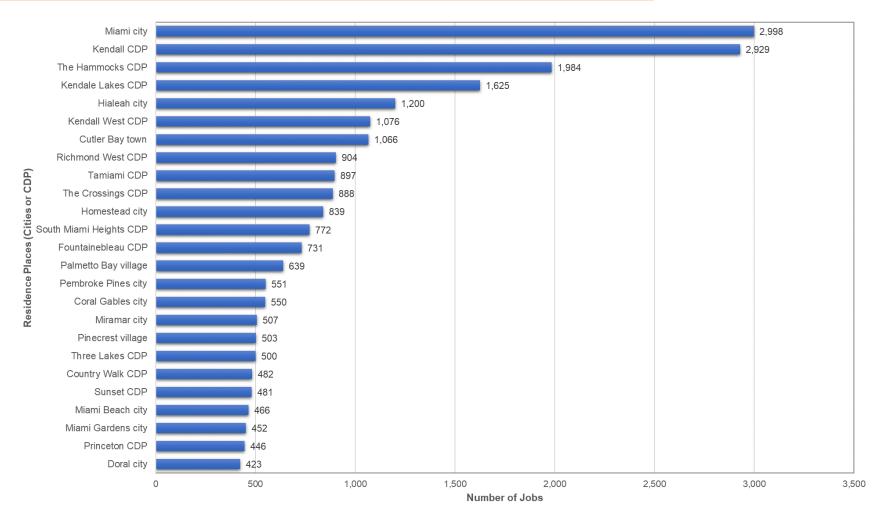


Figure 35 - Top 25 Residence Locations for Kendall Corridor Workers

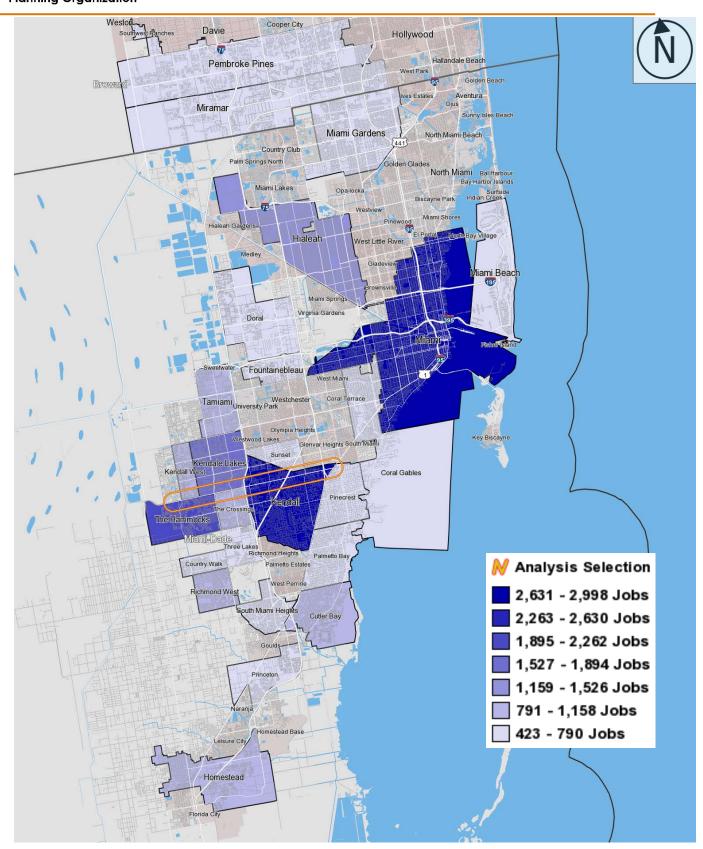


Figure 36 - Top 25 Residence Locations for Kendall Corridor Workers

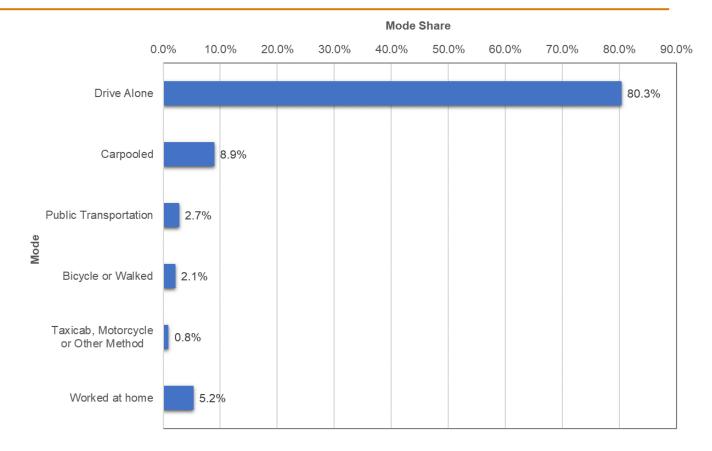


Figure 37 - Means of Transportation to Work for Kendall Workers

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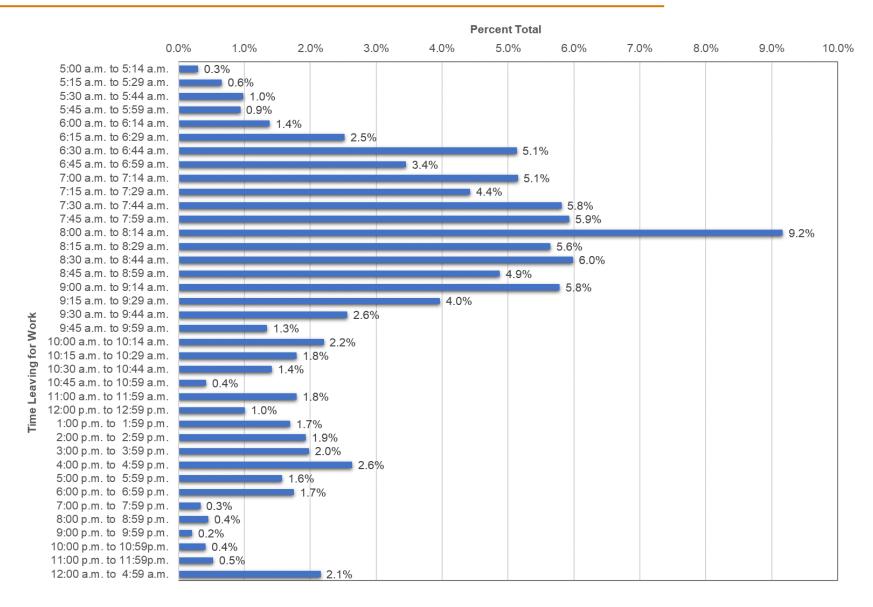


Figure 38 - Timing Arriving at Work for Kendall Workers

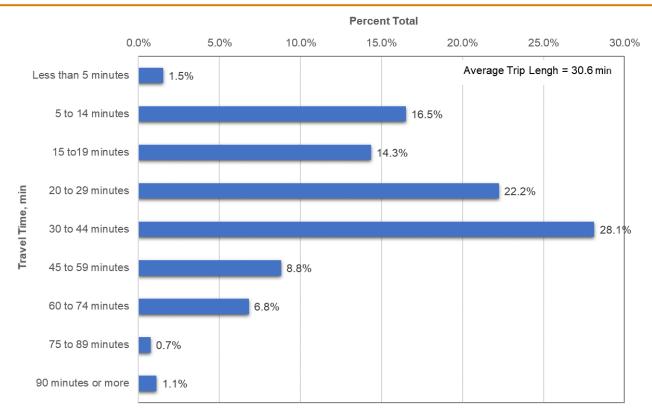


Figure 39 - Distribution of Travel Time to Work for Kendall Workers

# 3.3. Needs Analysis

As indicated by the data discussed in the previous paragraph, the Kendall Corridor is a congested corridor with limited right-of-way to increase roadway capacity. The SMART Plan corridors plan was developed to analyze alternative modes and land uses along the corridor in an effort to alleviate the current congestion but more importantly to enable an increase in development and sustainability of economic growth.

In this section, we list of improvements that have been identified and are currently programmed for the Kendall Corridor. These projects were identified through a variety of completed planning studies. Although all these projects will improve the functioning of the corridor, additional changes will need to occur in order to support an increase in density of development along the Kendall Corridor. In section 3.3.2., a closer look at the data summarized thus far and the travel patterns on the corridor will be analyzed.

# 3.3.1. Programmed Projects

The following list of projects are currently programmed to alleviate the congestion on the Kendall Corridor. These projects are listed in the Year 2040 Long Range Transportation Plan (LRTP) as well as the Transportation Improvement Program (TIP) 2018.

# Miami-Dade Transportation Planning Organization

#### SMART PLAN CORRIDOR INVENTORY - KENDALL CORRIDOR

- Snapper Creek Trail "A": Bicycle/Pedestrian improvements from K-Land Park/SW 88<sup>th</sup> Street to SW 72<sup>nd</sup> Street.
- Thermo for Widen HEFT: Signing/Pavement markings on Florida's Turnpike from S of Killian PKWY to North of SW 72 St.
- SR 94/Kendall Drive- Resurfacing: From SW 97 Avenue to SW 79 Avenue.
- SR 94/Kendall Drive- Resurfacing
- SR 94/Kendall Drive- Resurfacing: From SW 7500 Block to US 1/S Dixie Highway
- SR 94/Kendall Drive- Resurfacing: From E of SW 132 Avenue to E of SW 122 Avenue
- SR 94/Kendall Drive- Resurfacing: From E of SW 150 Avenue to E of 132 Avenue
- SR 94/Kendall Drive and SR 985/SW 107 Avenue: Intersection improvement.
- SR 94/Kendall Drive: PD&E/EMO Study from SR 997 to SR 5/Dixie HWY (BRT Study).
- SR 94/Kendall Drive: Intersection improvement from SW 77<sup>TH</sup> Avenue to US 1.
- SR 94/Kendall Drive: Intersection improvement from SW 99 Court to SW 97<sup>th</sup> Avenue
- SR 826/Palmetto EXPY: Transportation planning from US 1 to SR 836.
- SW 88 Street (Kendall Drive)/SW 127 Avenue Grade Separation: Grade separate SW 88 Street (Kendall Drive) over SW 127 Avenue.
- SR 5/ US 1 Signalized Intersection Lighting: From Palmetto/SW 98 to Granada Boulevard
- **SW 117 Avenue Resurfacing:** From SW 88 Street to SW 72 Street.
- Widen HEFT: From S of Killian Parkway to N of SW 72 Street INC EXP lane.
- **Kendall Corridor (RT 288):** Urban corridor improvements from west Kendall transit terminal to Dadeland North Metrorail Station.
- MDT additional elevators at Dadeland North Metrorail Stations: Construction of additional passenger amenities.
- MDT-Kendall Cruiser: Urban corridor improvements from Dadeland North Station to SW 162 Avenue.
- MDT-Kendall Drive Enhanced Bus Service: Enhanced Bus service from Dadeland North Station to SW 167 Avenue.
- **Kendall Park-and-Ride Facility:** Park-and-Ride facility with 183 spaces located near the SW 127 Avenue and SW 88 Street/Kendall Drive intersection.
- **Metrorail Park-and-Ride Facility:** Park-and-Ride facility with 1000 parking spaces, ground floor retail, and office space at the Dadeland South Metrorail Station.
- **US-1 Managed Lanes:** Add 2 plus 1 reversible new managed lanes within the right-of-way of the US-1 Busway. The project runs along US-1 from SW 344 Street to the Dadeland South Metrorail Station.
- **Snapper Creek Trail "B":** Bicycle/Pedestrian improvements. SW 9 Avenue from K-Land Park to SW 57 Avenue.



### SMART PLAN CORRIDOR INVENTORY - KENDALL CORRIDOR

- SR-821 (HEFT): Add lanes and reconstruct SR-821 from SW 88 Street (Kendall Drive) to 60 Street Canal Bridge.
- **SW 137**<sup>th</sup> **Avenue:** Bicycle/Pedestrian improvements along 137 Avenue from SW 152 Street to SW 72 Street.
- MDX SR-836 Southwest Extension: Extend SR-836 from NW 137 Avenue to SW 136 Street.
- M-Path/Overtown Greenway: Bicycle/Pedestrian improvements from North Miami River to the Dadeland Mall area.

### 3.3.2. Data Assessment

The list of identified projects for the Kendall Corridor is a mixture of highway, transit, pedestrian, bicycle and parking improvements. In an effort to address the congestion on the Kendall Corridor additional changes will have to occur. One of these changes are changes in the land use development patterns. These patterns are driven by land use regulations/incentives and Miami-Dade has created a separate set of zoning regulations for Urban Centers in an effort to increase the mix and density of the land use along the Kendall Corridor. These zoning regulations are discussed in section 3.4.

In addition, incentives will need to be developed to entice people away from their drive alone experience. Without either a reduction in the number of trips, or a more evenly spreading of the trips during the 24 hour cycle, the network will experience more and more congestion.

Based on the ACS data, 80% of the work trips are made by one person in an automobile. In the long run this will not be a sustainable scenario. Of the people who live on the Kendal Corridor 80% go to work by themselves in the automobile and 80% of people who work on the Kendall Corridor but live elsewhere arrive in a single occupied vehicle. About 4% used transit. In addition, the majority of the work trips take place between 7:15 am and 8:30 am. On the average these trips take about 30 to 40 minutes of driving time.

More than 20% or 7,583 of the Kendall residents work in the City of Miami. Approximately, 8% or 2,950 work locally within the Kendall area. These are origins and destination where transit services is already in existence and where a greater portion of the market could potentially be served by transit. Other potential markets are Coral Gables and Doral, areas which employ more than 2,000 residents from the Kendall Corridor.

Analyzing the reverse, 7% of the City of Miami and Kendall CDP residents work on the Kendall corridor which corresponded with 3,000 workers from each place. Another residence area with 5% or 2,000 workers heading towards the Kendall corridor is the Hammocks CDP. Focusing on these areas and improving the transit service is equally as important as improving the access and egress from these areas to the main transit service.





As mentioned earlier on this report, transit ridership has been declining not only in the study area but nationally. The downward trend in transit ridership can be attributed to factors such as unreliable service, the sometimes long and complicated process of using public transit, and to the new customer-service- centric features found in other ride- sharing transportation options such as Uber and Lyft.<sup>29</sup>

In the end, cost and convenience are a big influence in the travel behavior of people. However, the sensitivity to these two variables is different for different people. One way to influence this is through education. In general, people do not realize the actual cost of their vehicular trip because no exact fair is paid for each trip. Creating an application that allows people to easily see/calculate the cost of a daily trip to work (including car payments, insurance, gasoline, maintenance, and parking) will create awareness of the cost an individual bears. In addition, to the individual cost, there is the societal cost associated with pollution and noise. These are becoming big problems in other more urbanized areas in the world.

The most typical incentives used, particular for trips with destinations in the downtown area, are parking costs. Parking policies in general are getting more attention not only as a tool to influence travel behavior but also driven by a change in need as it relates to new technologies, such as the autonomous vehicles.

## 3.4. Transit-Oriented Development Guidelines

Along the Kendall Corridor there are limited options for roadway capacity expansion beyond the existing infrastructure due to limited right-of-way availability and the suburban environment found in the study area. Although standard 6-foot sidewalks are present through most of the length of the corridor, it lacks pedestrian friendly street scape, and bicycle lanes which are key aspects of transit-oriented developments (TOD).

In addition to the improving the infrastructure, the land use along the corridor needs to be conducive to the use of transit. Conducive communities have an infrastructure that support walking and bicycling to the transit service. Miami-Dade has implemented several zoning methods/districts to support the development of communities which support and promote the use of transit.

The SERPM-V7 was summarized for the TAZs surrounding the Community Urban Centers (CUC) along the Kendall Corridor. Approximately 26% of the households and 46% of the employment along the Kendall Corridor are located in a TAZ adjacent to a CUC. Listed in Table 8 are some of the household characteristics which influence the trip making patterns of a household.

<sup>&</sup>lt;sup>29</sup> http://www.govtech.com/fs/perspectives/How-Smart-Cities-Can-Increase-Public-Transit-Ridership-Industry-Perspective.html



## SMART PLAN CORRIDOR INVENTORY - KENDALL CORRIDOR

Table 9 shows the projections that were developed for the Kendall Corridor and the TAZs adjacent to the CUCs. In comparing the assigned growth to the corridor with the growth assigned to the CUC, we note that 3,850 household are added to the corridor of which 1,333 or 35% are assigned to the CUCs. The increase of the number of employees in the corridor is 19,315 of which 11,409 or 59% are assigned to the CUCs. One of the goals of the CUCs is to create more mixed use development, thus providing a better balance between the household and employment ratios. Concentrating the household and employment data within the CUC will allow for a greater opportunity to service these areas by public transportation.



Table 8 - Year 2015 Socioeconomic Data — Kendall Corridor Community Urban Centers

|   | 2015       |            |        |               |                  |                |                  |                      |                  |              |                   |            |                        |
|---|------------|------------|--------|---------------|------------------|----------------|------------------|----------------------|------------------|--------------|-------------------|------------|------------------------|
|   | Households | Population | Рор/НН | HH No Workers |                  | HH No Children |                  | HH Income less \$25K |                  | Pop Age > 79 |                   | Employment |                        |
| Urban Center Name                           |            |            |        | Number        | Percent of<br>HH | Number         | Percent<br>of HH | Number               | Percent<br>of HH | Number       | Percent of<br>Pop | Number     | Percent of<br>Corridor |
| 158th                                       | 837        | 3,114      | 3.72   | 120           | 14%              | 389            | 46%              | 64                   | 8%               | 64           | 2%                | 2,689      | 5%                     |
| 137th                                       | 3,764      | 10,183     | 2.71   | 691           | 18%              | 2,469          | 66%              | 1,016                | 27%              | 412          | 4%                | 4,465      | 8%                     |
| HEFT  | 1,746      | 5,277      | 3.02   | 358           | 21%              | 1,040          | 60%              | 156                  | 9%               | 164          | 3%                | 5,206      | 9%                     |
| Dadeland South, North &<br>Downtown Kendall | 3,799      | 8,088      | 2.13   | 824           | 22%              | 2,897          | 76%              | 924                  | 24%              | 223          | 3%                | 13,586     | 25%                    |
| CUC Total                                   | 10,146     | 26,662     | 2.63   | 1,993         | 20%              | 6,795          | 67%              | 2,160                | 21%              | 863          | 3%                | 25,946     | 47%                    |
| Kendall Corridor Total                      | 38,808     | 103,948    | 2.68   | 7,282         | 19%              | 25,876         | 67%              | 8,362                | 22%              | 4,330        | 4%                | 55,343     |                        |

Table 9 - Year 2040 Socioeconomic Data – Kendall Corridor Community Urban Centers

|                         | 2040       |            |        |               |            |                |         |                      |         |              |            |            |            |
|-------------------------|------------|------------|--------|---------------|------------|----------------|---------|----------------------|---------|--------------|------------|------------|------------|
|                         |            | Population | Pop/HH | HH No Workers |            | HH No Children |         | HH Income less \$25K |         | Pop Age > 79 |            | Employment |            |
| Urban Center Name       | Households |            |        | Number        | Percent of | Number         | Percent | Number               | Percent | Number       | Percent of | Number     | Percent of |
|                         |            |            |        |               | нн         |                | of HH   |                      | of HH   |              | Рор        |            | Corridor   |
| 158th                   | 959        | 3,722      | 3.88   | 119           | 12%        | 506            | 53%     | 110                  | 11%     | 91           | 2%         | 6,206      | 8%         |
| 137th                   | 3,836      | 10,654     | 2.78   | 560           | 15%        | 2,439          | 64%     | 887                  | 23%     | 471          | 4%         | 5,703      | 8%         |
| HEFT                    | 1,772      | 5,440      | 3.07   | 285           | 16%        | 1,124          | 63%     | 262                  | 15%     | 223          | 4%         | 7,756      | 10%        |
| Dadeland South, North & | 4,912      | 11,336     | 2.31   | 822           | 17%        | 3,633          | 74%     | 1,085                | 22%     | 416          | 4%         | 17,690     | 24%        |
| Downtown Kendall        |            |            |        |               |            |                |         |                      |         |              |            |            |            |
| CUC Total               | 11,479     | 31,152     | 2.71   | 1,786         | 16%        | 7,702          | 67%     | 2,344                | 20%     | 1201         | 4%         | 37,355     | 50%        |
| Kendall Corridor Total  | 42,658     | 122,857    | 2.88   | 6,503         | 15%        | 28,556         | 67%     | 8,929                | 21%     | 5,446        | 4%         | 74,658     |            |



## **3.4.1.** Zoning

Chapter 33 of the code of Miami-Dade County provides for various zoning districts establishing permitted uses and building standards for the unincorporated area. Within the Urban Development Boundary, RU-1 districts (Single-Family Residential District) is most prevalent, occupying 16.5 percent of the study area which permits only detached single-family houses. RU-1 is followed by the GU-Interim District at 15 percent which permits very low-density single-family residential uses. Only 10.8 percent of the study area is zoned BU-1A, BU-2, or BU-3, all of which permits shopping centers, office buildings, restaurants, and the like. The Traditional Neighborhood Development (TND) district occupies only 0.8 percent of the study area, and permits a mixed-use traditional neighborhood with apartments, retail and office uses, single-family houses, and civic spaces such as schools, parks and religious facilities. Appendix 1 depicts the current zoning uses within the study area.

### 3.4.2. Urban Centers Districts

The Miami-Dade Zoning Code is considered a hybrid code containing both a traditional, Euclidian zoning section and a form-based section. The form-based code section of the Miami-Dade Zoning Code is also known as Standard Urban Centers Districts Regulations. One of these special zoning districts is located within the study area, and it is designated as the Downtown Kendall Urban Center District which is summarized below.

## 3.4.3. Downtown Kendall Urban Center (DKUC) District

The DKUC includes the two contiguous areas on each side of US Highway 1. The western area is bounded by the Palmetto Expressway on the west, the Snapper Creek Expressway on the north and US Highway 1 on the east. The eastern area is bounded by US Highway 1 on the west, SW 80 Street on the north, SW 65 Avenue and SW 67 Avenue on the east, and SW 84th Street and Snapper Creek Canal on the south.

The main goals of the DKUC is to:

- A. Coordinate the development intensity within the district by the proximity to mass transit;
- B. Organize an interconnected network of colonnaded or tree lined streets to improve pedestrian access to transit; and
- C. Create good public open space with specific square and plaza locations and by shaping the way buildings front onto the open space and streets.

The regulating plans for the Downtown Kendall District are depicted below, accompanying standards for each Sub District Plan, Street Plan, and Open Space Plan can be found in Appendix 2.



# Sec. 33-284.61. Regulating plans.

(A) Sub-District Plan

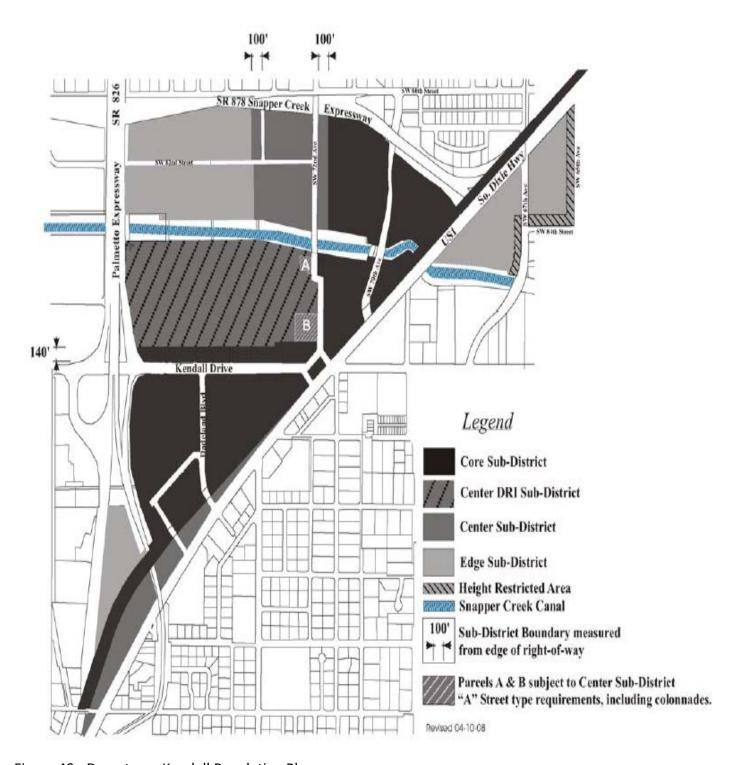


Figure 40 - Downtown Kendall Regulating Plan



# (B) Street Frontage Plan

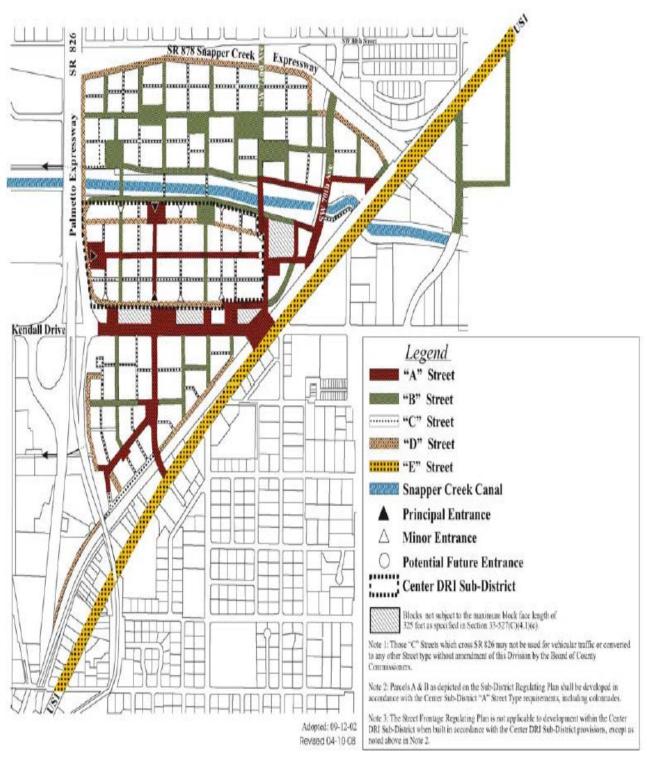


Figure 41 - Downtown Kendall Regulating Plan-Streets



# (C) Designated Open Space Plan

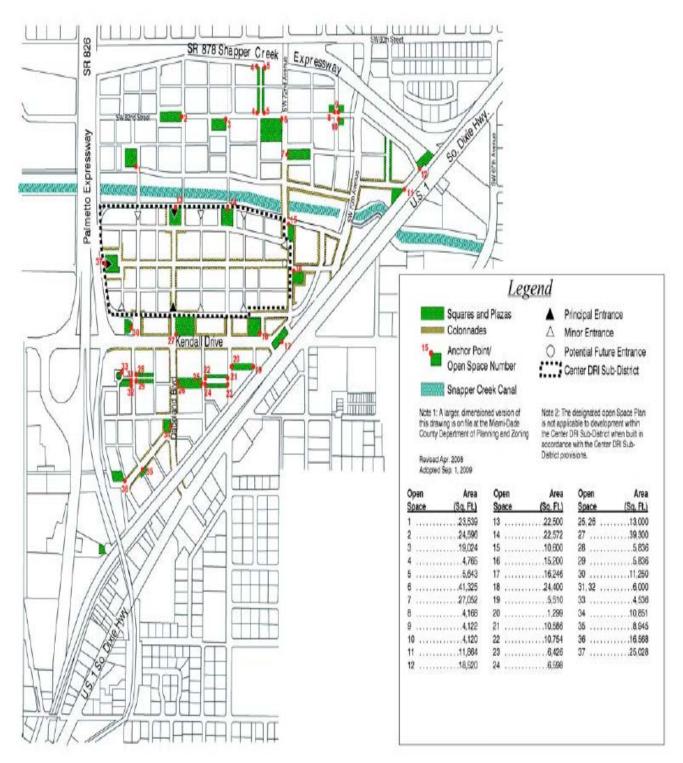


Figure 42 - Downtown Kendall Regulating Plan- Open Space



### 3.4.4. Downtown Kendall Charrette Master Plan

In June 1998 several stakeholders including city officials, community leaders, developers, and citizens gathered to create a future vision for the Dadeland-Datran area. Since then, the Board of County Commissioners has approved the Downtown Kendall Charrette Master Plan, report and recommendations and also the Downtown Kendall Urban Center District ordinance mentioned previously in this study.

The Downtown Kendall Charrette Master Plan recommended the following standards:30

- Buildings should be built along the street edge in the normal manner. "Teaser" parking spaces should be on the street, with the balance of parking located behind the buildings.
- Buildings should be tall enough to create a sense of enclosure and urban character.
- Sidewalks need to be wider, and should be shaded with colonnades or arcades incorporated into the building designs. For the near term, a free-standing colonnade will suffice.
- Buildings should have a rich variety of architectural style and detailing, and the sidewalks should be faced by active storefronts, doors and windows.
- Buildings along the street should have a vertical mix of uses. Shops at the ground floor with offices and/or apartments above will increase the vitality of the neighborhood.

Figure 43 below provides an example of the changes needed on Kendall Drive to make it the community's Main Street.





Above: Before and After of Kendall Drive

Figure 43 - Downtown Kendall Charette

<sup>&</sup>lt;sup>30</sup> https://www.miamidade.gov/zoning/library/reports/downtown-kendall-executive-summary.pdf



### SMART PLAN CORRIDOR INVENTORY - KENDALL CORRIDOR

It is recommended to create multiple transit oriented developments (TOD) along the corridor which could benefit from each other by one mixed-use, transit-oriented node being linked to and served by other similar node.<sup>31</sup> There are 5 Urban Centers (4 community centers and 1 metropolitan center) identified along Kendall Drive in the CDMP. Business, office, and residential land use is permitted around these Urban Corridors which is consistent with TOD guidelines.

The Kendall Corridors lacks bicycle lanes and a pedestrian friendly environment with appealing landscape, traffic buffer zones as found in TOD's guidelines. It is recommended to develop convenient, comfortable, direct and safe pedestrian and bicycle linkages between development nodes to enhance mobility along the corridor by encouraging people to choosing walking or biking as an alternative to vehicles. These linkages should be coordinated with transit routes to promote the use of transit. Travel by walking, cycling and transit is paramount for a successful TOD.<sup>32</sup>

In general, the future land use designation found in the CDMP for Miami-Dade county supports transit oriented developments by permitting mixed-use of land around transit stations.

Figure 44 shows the existing infrastructure around the CUC at SW 158 Avenue. As can be seen, the existing parcel layout does not provide easy walkable access to the Kendall Corridor. Unless redevelopment is planned to occur, planning of transit service will need to include an access and egress service to allow for easy and seamless access to the service provided on the corridor. As can be noted by looking at Figures 45, 46, and 47, the SW 158<sup>th</sup> Avenue infrastructure reflects a typical layout of the parcel along the Kendall Corridor.

<sup>&</sup>lt;sup>31</sup> http://www.its.berkeley.edu/sites/default/files/publications/UCB/2011/VWP/UCB-ITS-VWP-2011-3.pdf

<sup>&</sup>lt;sup>32</sup> file:///C:/Users/jizquierdo/Desktop/TOD%20Guidelines%202010-11.pdf



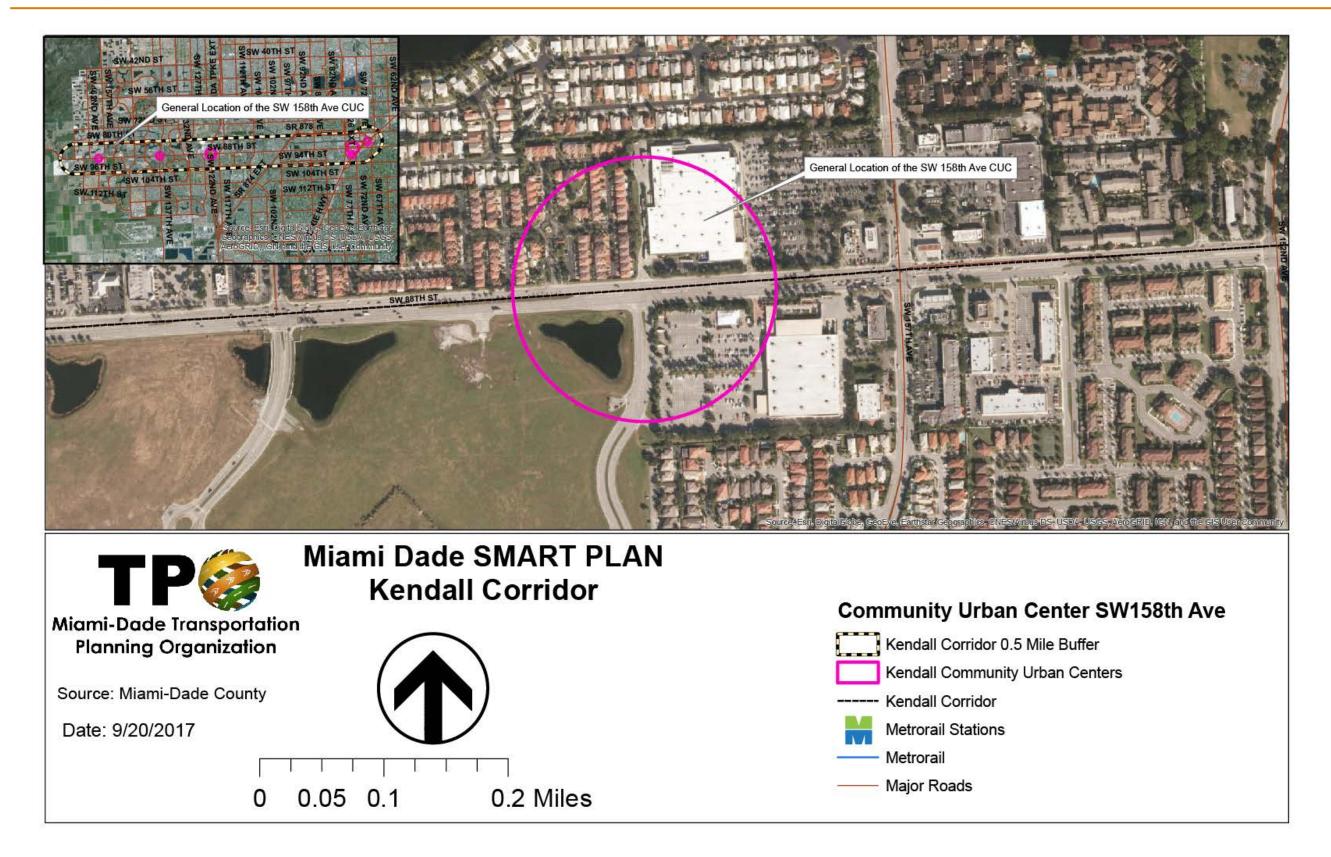


Figure 44 - Existing Infrastructure surrounding SW 158 Avenue Community Urban Center



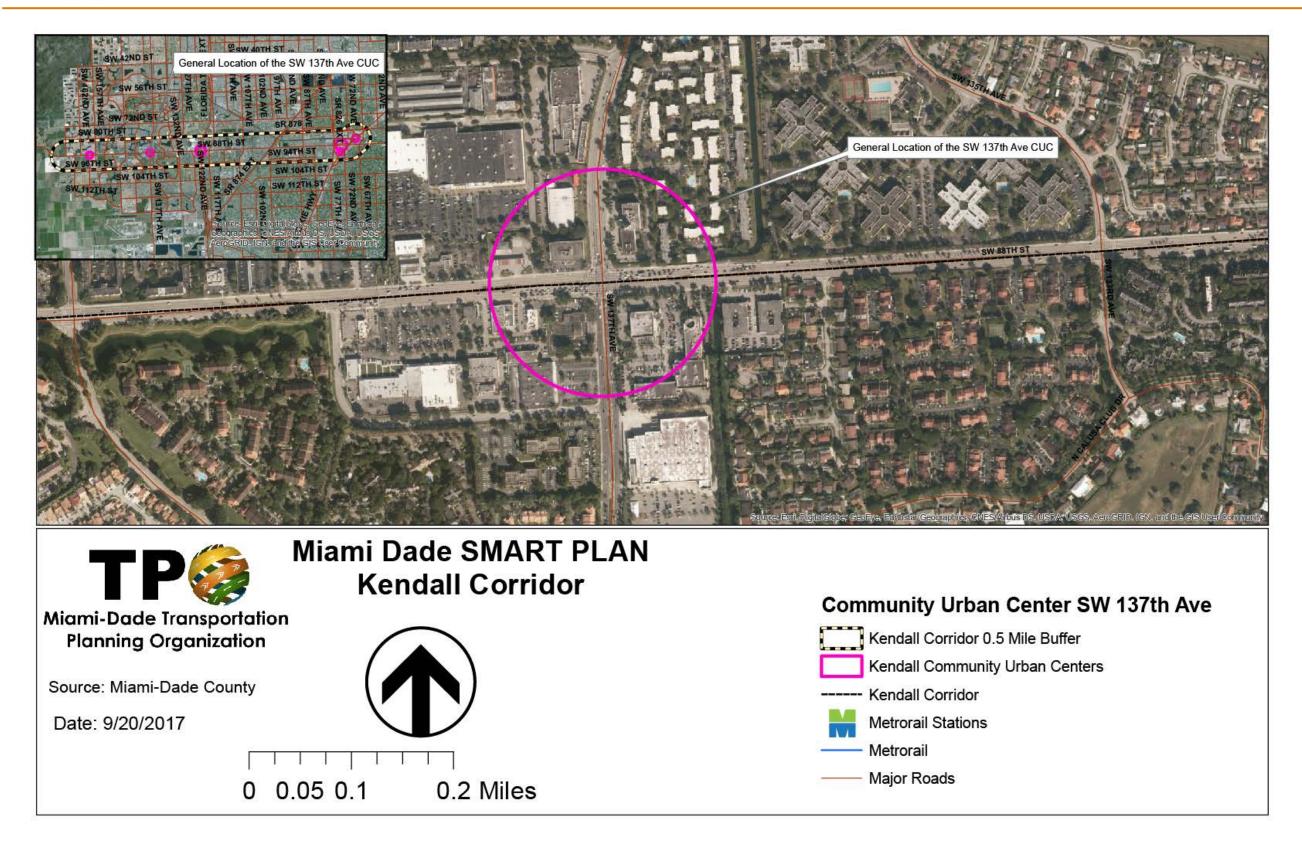


Figure 45 - Existing Infrastructure surrounding SW 137 Avenue Community Urban Center



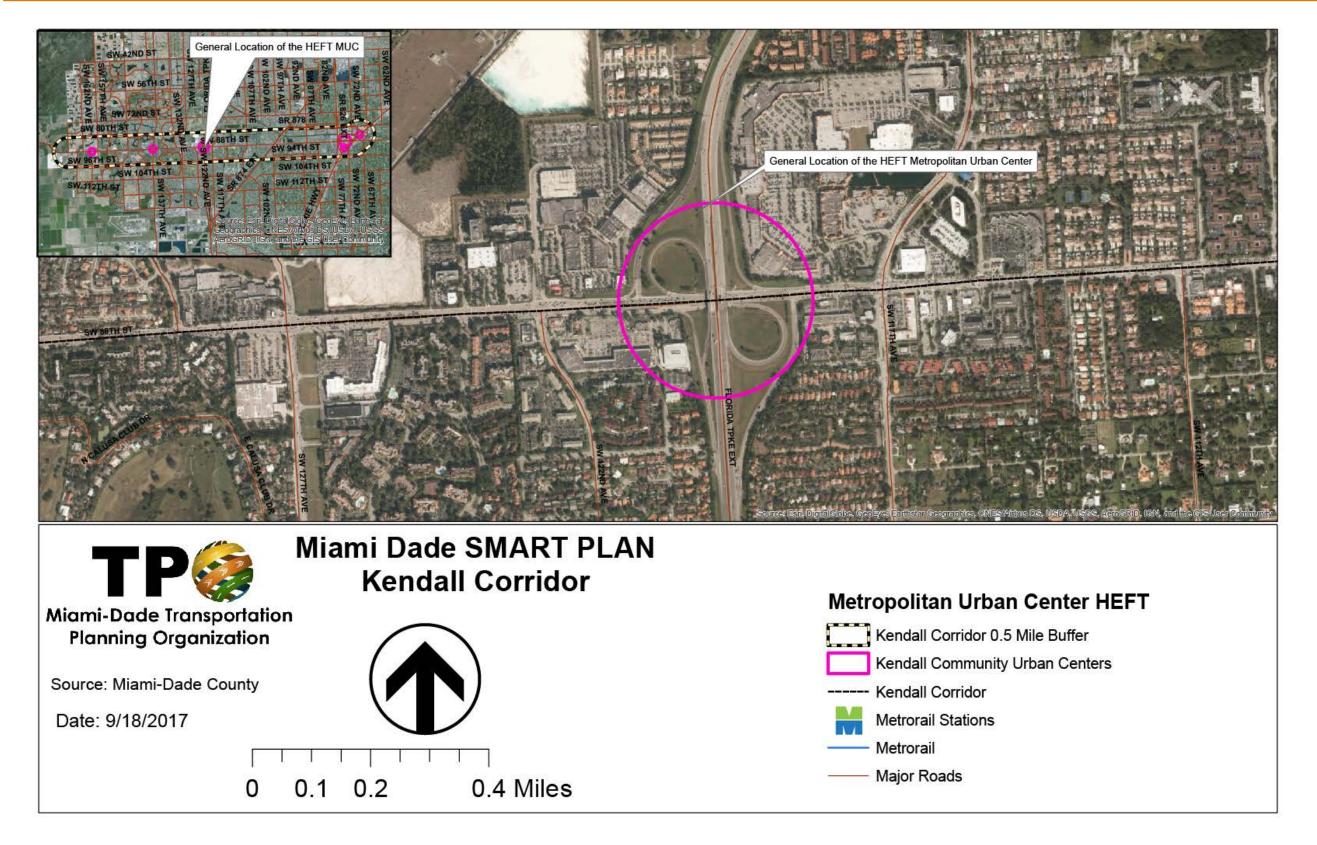


Figure 46 - Existing Infrastructure surrounding HEFT Metropolitan Urban Center



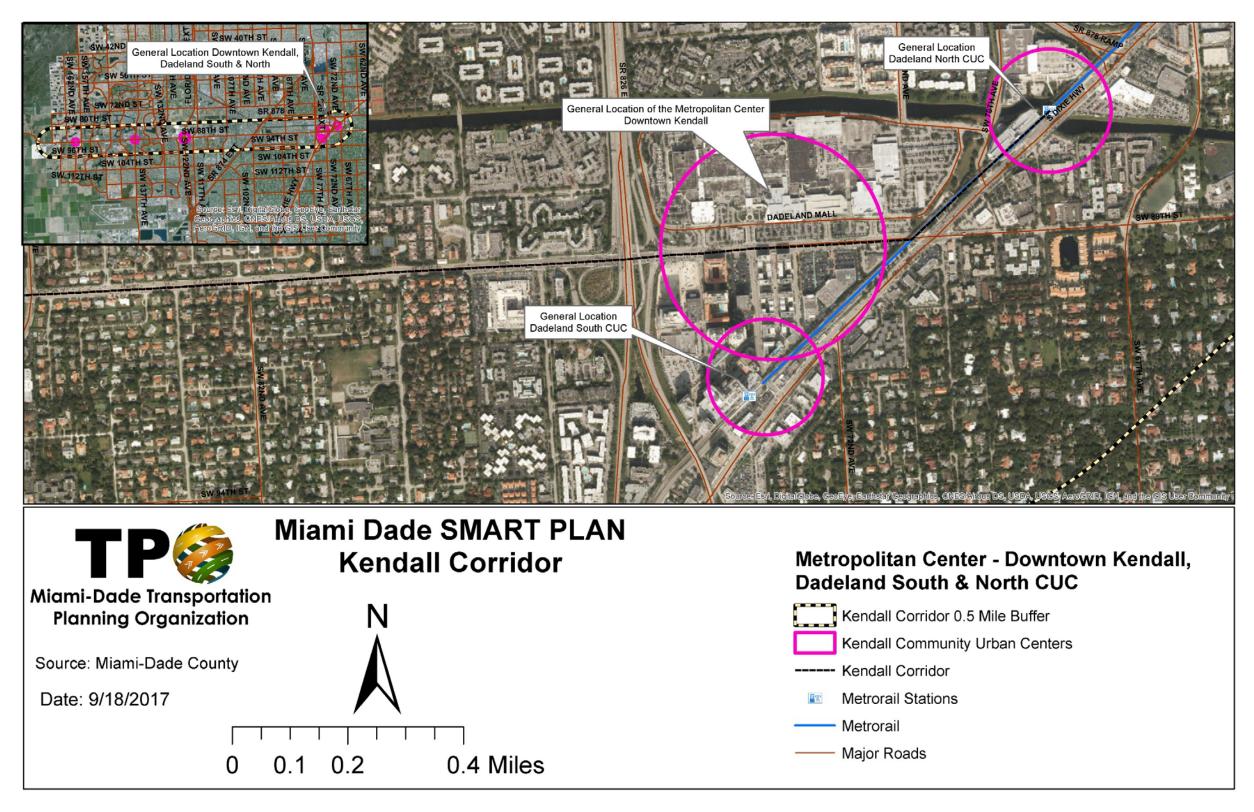


Figure 47 - Existing Infrastructure surrounding MUC Downtown Kendall & CUC Dadeland



## 3.5. Summary

As stated in the introduction, the main objective of this report is the collection of available demographic and socioeconomic data to prepare a preliminary inventory of the current land use along the Kendall SMART corridor.

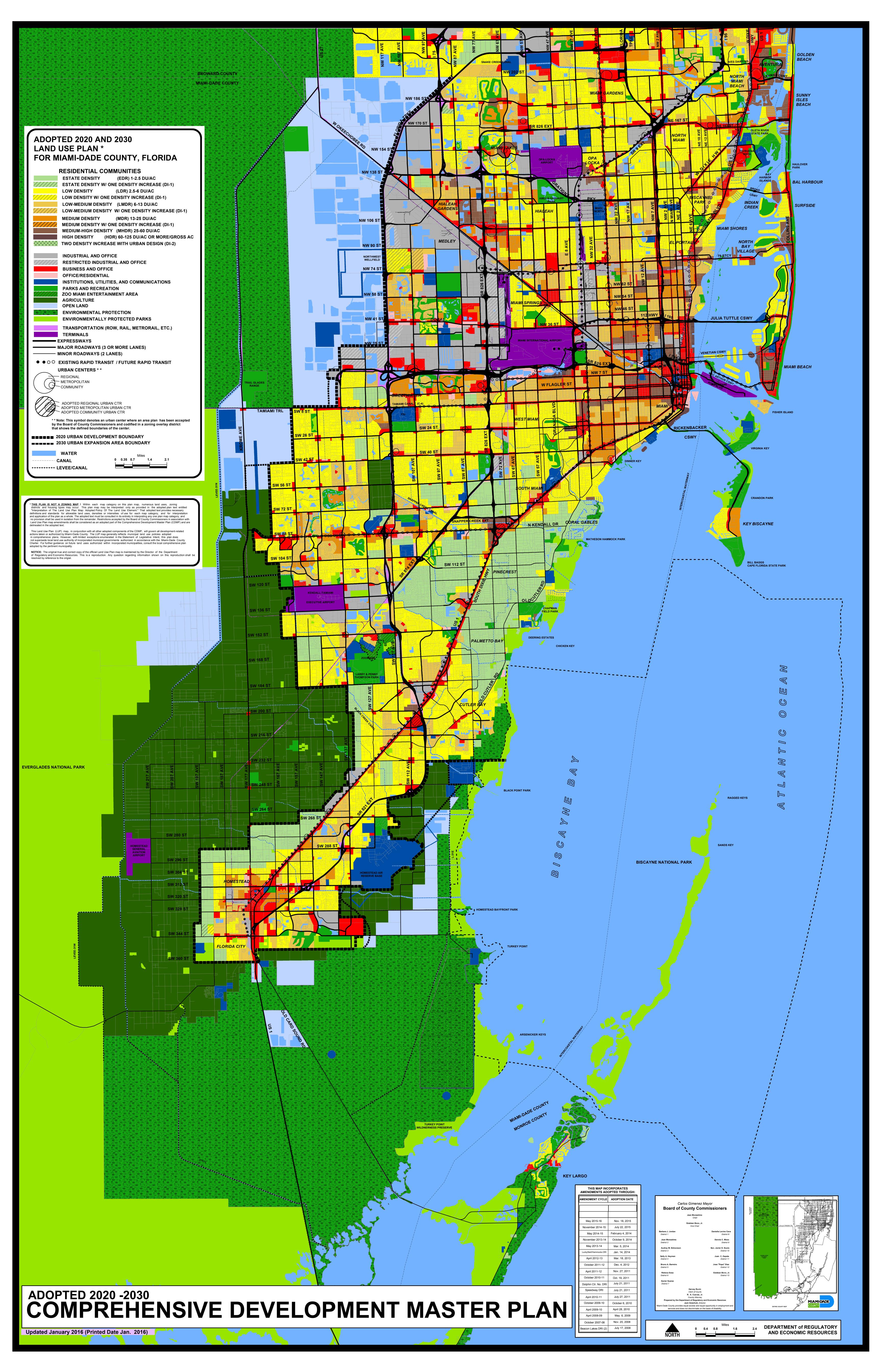
The information gathered in this report provides a basis for the continued study of the Kendall Corridor in an effort to keep the momentum going and provide greater insight into the next steps involved in transforming the Kendall Corridor into a major transit corridor.

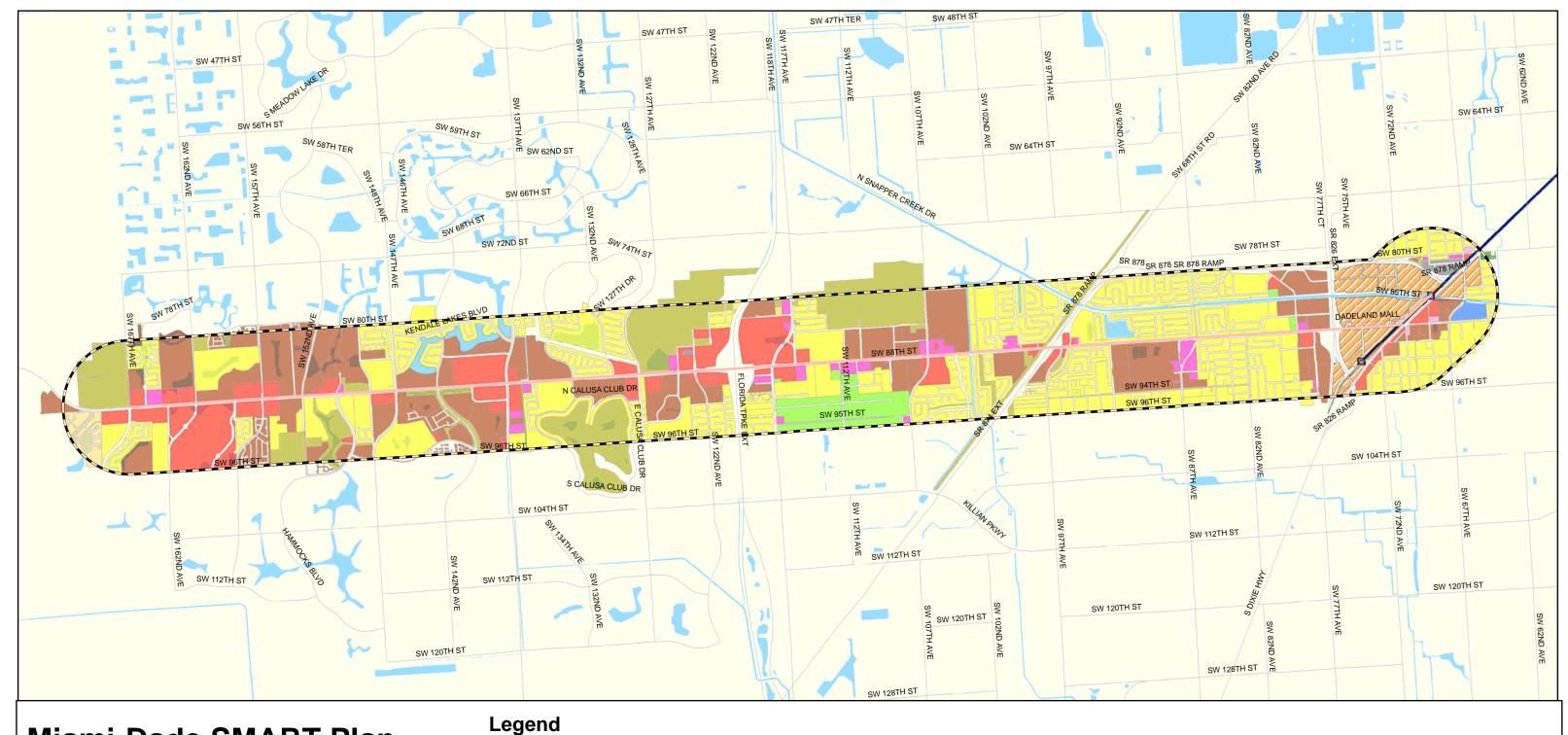
Based on the information summarized in the report, the Kendall Corridor has great potential due to its already relatively dense residential land use, relative clear work origins and destinations along the corridor, existing transit ridership, presence of sidewalks and the necessary zoning tools through the creation of the Urban Centers.

In an effort to make the Urban Centers successful, new developments, park and ride lots, and transit transfer stations should be directed toward these centers. The access to the centers from the residential areas should be improved through easy access to these centers and the transit service on the main facilities. In additions, incentives perhaps through parking policies should be developed to make the transit choice more competitive with the private automobile.



Appendix 1 – Land Use Map and Zoning Map





Half Mile Buffer

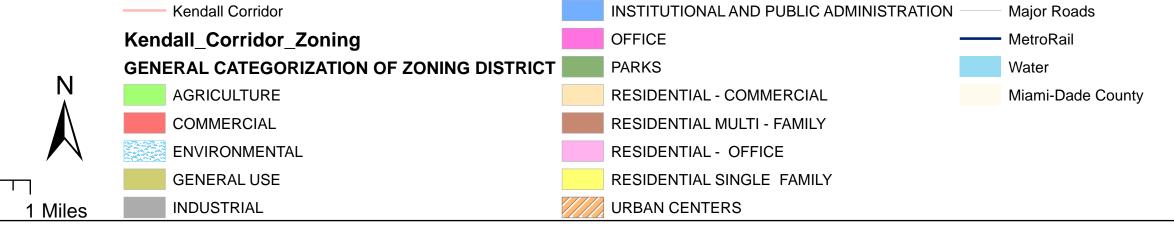
# Miami-Dade SMART Plan Kendall Corridor General Zoning Map

0 0.250.5

Source: Miami-Dade County

Date: 8/30/2017





INDUSTRIAL- COMMERCIAL

MetroRail Stations



| Αŗ | pen | dix | 2 | - Sub | District | Plan, | Street | Plan, | and O | pen S | pace | Plan |
|----|-----|-----|---|-------|----------|-------|--------|-------|-------|-------|------|------|
|    |     |     |   |       |          |       |        |       |       |       |      |      |

# **Downtown Kendall Urban Center (DKUC) District**

The Downtown Kendall Urban Center District was adopted into the zoning code in 1999 by Ordinance 99-166. This district has been subsequently amended by ordinances 01-129, 01-156, 01-161, 02-11, 02-152, 05-197, 06-114, and 09-81. This document is formatted for clarity in text and graphics. For the official adopted article, refer to the Code of Miami-Dade County published by the Municipal Code Corp., available online at www.municode.com.

## Sec. 33-284.55. Purpose and intent.

This article applies to two (2) contiguous areas on each side of US Highway 1. The western area is bounded by the Palmetto Expressway on the west, the Snapper Creek Expressway on the north and US Highway 1 on the east. The eastern area is bounded by US Highway 1 on the west, SW 80th Street on the north, SW 65th and SW 67th Avenues on the east, and SW 84th Street and Snapper Creek Canal on the south. The intention of this Article is to produce a Metropolitan urban center that fulfills the goals, objectives and policies of the County's Comprehensive Development Master Plan by:

- (A) Coordinating the development intensity within the district by the proximity to mass transit;
- (B) Organizing an interconnected network of colonnaded or tree lined streets to improve pedestrian access to transit; and
- (C) Creating good public open space with specific square and plaza locations and by shaping the way buildings front onto the open space and streets.

The Illustrative Plan (Figure 1), illustrates the vision and may be used to better interpret this Article. Where there is conflict between the illustrative plan and the text of this article, the text shall govern.



Figure 1. Illustrative Plan.

### Sec. 33-284.56. Definitions.

Terms used throughout this Article shall take their commonly accepted meaning unless otherwise defined in Chapter 33 or Chapter 28 of the Code of Miami-Dade County. Terms requiring interpretation specific to this article are as follows:

- (1) Anchor Point: The location depicted on the Designated Open Space Plan on which some portion of the required plaza or square must be situated.
- (2) Block: A combination of building lots, the perimeter of which abuts streets.
- (3) Block face: The right-of-way line or easement line which delineates a block edge.
- (4) Build-to line: A line parallel to the block face, along which a building shall be built.
- (5) Building Height: A limit to the vertical extent of a building measured in stories above grade. Building height shall be measured in stories from the average elevation of the enfronting curb to the eave line.
- (6) Civic Use: Premises used primarily for public education, cultural performances, gatherings and displays administered by non-profit cultural, educational, governmental, and religious organizations.
- (7) Clear Zone: An area within the curb radius, which shall be kept clear of all objects to a prescribed height to provide vehicle clearance.
- (8) Colonnade: A roofed structure, extending over the sidewalk, open to the street that is supported by columns or piers.
- (9) Courtyard Garden: A grade-level garden which may be included as part of the open space requirement and is described in this Article's General Requirements.
- (10) Curb Radius: The curved edge of street paving at an intersection, measured at the inside travel edge of the travel lane.
- (11) Designated Open Space: Colonnades, Squares, and Plazas as indicated on the Designated Open Space Plan.
- (12) Expression Line: A horizontal line, the full width of a facade, expressed by a material change or by a

- continuous projection not less than three (3) inches nor more than one (1) foot.
- (13) Floorplate: The total indoor and outdoor area of any given story of a building, measured to the exterior of the wall.
- (14) Frontage: The property line or lines of a lot which coincide with a right-of-way or other public open space line as shown on the Regulating Plan.
- (15) Garden Wall: A wall separating a courtyard garden from a public open space.
- (16) Habitable Space: Building space whose use involves human presence with direct view of the enfronting streets or open space, excluding parking garages, self-service storage facilities, warehouses, and display windows separated from retail activity.
- (17) Open Space: An outdoor, at grade space which is accessible to the public all or most of the time, including parks, plazas, squares, canal-walks, colonnades, courtyard gardens, paseos (when designed predominantly for pedestrians), and pedestrian paths and/or associated ornamental or shading landscaped areas.
- (18) Paseo: A cross-block, primarily pedestrian passage connecting one (1) right-of-way or paseo to another. Paseos shall be designed for pedestrian comfort, but may serve vehicles when minimum standards set forth in this Article are met. Also known as a C Street.
- (19) Penthouse: Topmost built area of a building with a floorplate area less than that of the tower below.
- (20) Pedestal: The bottom portion of a building that creates the street frontage.
- (21) Plaza: An open space with a majority of paved surface. Plazas are fronted with buildings that continue the adjacent street frontage requirements and uses.
- (22) Retail Use: Premises used for the exchange of services or goods.
- (23) Square: An open space surrounded by streets or other vehicular passages.
- (24) Shared Parking: Parking used by more than one (1) use or building.

- (25) Storefront: The portion of a building at the first story of a retail frontage that is made available for retail use.
- (26) Story: A floor level within a building as described in this Article's General Requirements.
- (27) Street: A thoroughfare for the movement of pedestrians and/or vehicles, as provided in this Article.
- (28) Streetwall: The vertical surface of a building or structure that faces public open space.
- (29) Tower: The middle portion of a building above the pedestal and below the penthouse.
- (30) Turnout Radius: the inside turning radius between intersecting travel lanes, which may be independent from the actual curb of the street edge.

### Sec. 33-284.57. Review procedure.

Projects following the provisions of this Article and the Regulating Plans shall be processed and approved administratively. The Miami-Dade County Department of Planning and Zoning shall review the applications including exhibits listed below for completeness and compliance with the provisions of this Article and the Regulating Plans. All complete submissions to the Department shall be reviewed and approved or denied, within twenty-one (21) days from the date of submission. The applicant shall have the right to extend the twenty-one (21) day period by an additional twenty-one (21) days upon timely request made in writing to the Department. The Department shall have the right to extend the twenty-one (21) day period by written notice to the applicant that additional information is needed to process the site plan. Denials shall be in writing and shall specifically set forth the grounds for the denial. Any final decision of the Director may be appealed in accordance with the public hearing procedure established in Article XXXVI of this Code and in accordance with the procedure established for appeals of administrative decision.

Exhibits prepared by design professionals such as architects and landscape architects shall be submitted to the Department and shall include, but not be limited, to the following:

- (A) Site plan(s) including:
  - (1) Lot lines and setbacks.

- (2) Location, shape, size and height of existing and proposed building construction and landscaping.
- (3) Location of on-street and off-street parking, loading facilities, waste collection areas, and all above ground utilities.
- (4) Indication of signage.
- (5) Indication of any site or building design methods used to conserve energy.
- (6) Street type designations as per this Article.
- (7) Indication of Sub-District boundaries as per this Article.
- (B) Landscape plans including specification of plant material, location and size.
- (C) Floor plans and elevations of all structures, including total gross square foot area of each floor and all dimensions relating to the requirements of this Article.
- (D) Figures indicating the following:
  - (1) Gross and net acreage.
  - (2) Amount of landscaped open space in square feet and percentage required and provided.
  - (3) Total square footage of all land uses.
  - (4) Amount of building coverage at ground level in square feet and percentage.
  - (5) Total trees required and provided, indicating on site and off site contribution within the District.
  - (6) Parking required and provided.
  - (7) Total amount of paved area in square feet.
  - (8) Total number of dwelling units.
  - (9) Such other design data as may be needed to evaluate the project.

In the case of multiple-phase development, each phase of the development, whether standing independently or in conjunction with existing developed or proposed future contiguous phases, shall meet all the requirements of this Article. For future development outside the Center DRI Sub-District, expansions or additions to legal structures, if not in substantial compliance with previously approved plans,

shall be subject to those requirements of this Article applicable to the entire block or blocks in the Regulating Plans for which the expansion or addition is proposed.

Notwithstanding the review procedure contained herein, all requests for the subdivision of property within the Downtown Kendall Urban Center District shall have previously received site plan approval in accordance with the requirements of this section or Section 33-284.58 below.

### Sec. 33-284.58. Zoning hearing review.

Applications for zoning hearing which seek relief from the regulations contained within this Article shall be in accordance with the procedures set forth in Article XXXVI of this Code. In no event, however, shall the following provisions of this Article be varied:

- (1) Building height restrictions.
- (2) Habitable space regulations.
- (3) Colonnade regulations.
- (4) Landscape regulations for streets, squares, and medians.

# Sec. 33-284.59. Conflicts with other chapters and regulations.

When conflicts with other Zoning, Subdivision or the Landscape regulations occur, the Downtown Kendall Urban Center District Article shall take precedence. Where conflicts occur with Miami-Dade Department of Public Works Manual of Public Works, unless otherwise approved by the Director of the Public Works Department and the Director of the Department of Planning and Zoning, this Article shall take precedence.

# Sec. 33-284.60. Organization of this article.

- (A) This Article is organized into three (3) primary sections:
  - (1) The Regulating Plans allocate Sub-Districts, street frontages, and designated open space that serve as the controlling factors of the plan;
  - (2) The Development Parameters are the instructions for implementing the Regulating Plans; and

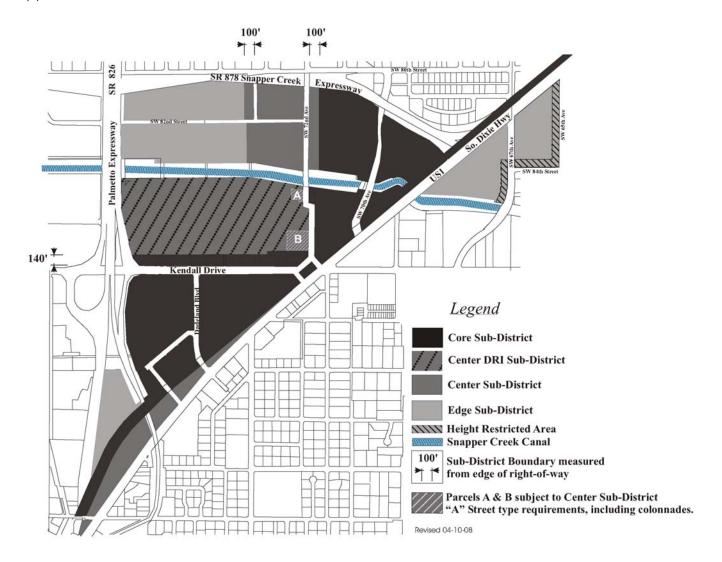
(3) The Additional Parameters address issues of quality in the design of buildings and their grounds.

- (B) The controlling factors are the three (3) Regulating Plans which establish four Sub-Districts, five (5) street frontage types and a number of designated open spaces that interact. Each different interaction is illustrated as part of this Article.
  - (1) The Sub-District Plan delineates four subdistricts, the Core, the Center, the Center
    DRI and the Edge. These Sub-Districts
    control land use and intensity of development in accordance with the County's
    Comprehensive Development Master
    Plan. Unless developed in accordance
    with Section 33-284.63.1 below, property
    in the Center DRI Sub-district shall be
    subject to the provisions of this article
    applicable to the Center Sub-district.
  - (2) The Street Frontage Plan establishes a hierarchy of street types in existing and future locations which shall be provided and shown in all future development. The five (5) street types are lettered "A" through "E." An "A" street is the most important street to accommodate pedestrian activity.
  - (3)The Designated Open Space Plan establishes essential open spaces which shall be provided in all future development and construction. The designated open spaces are controlled by anchor points which are shown on a larger map at a scale of one (1) inch equals two hundred (200) feet on file at the Miami-Dade County Department of Planning and Zoning. The Downtown Kendall Urban Center District Designated Open Space Plan Map's legend contains colonnades, squares & greenspaces, and anchor point. The map, shown below, specifies the exact location and size of all squares and greenspaces required within the Downtown Kendall Urban Center District.

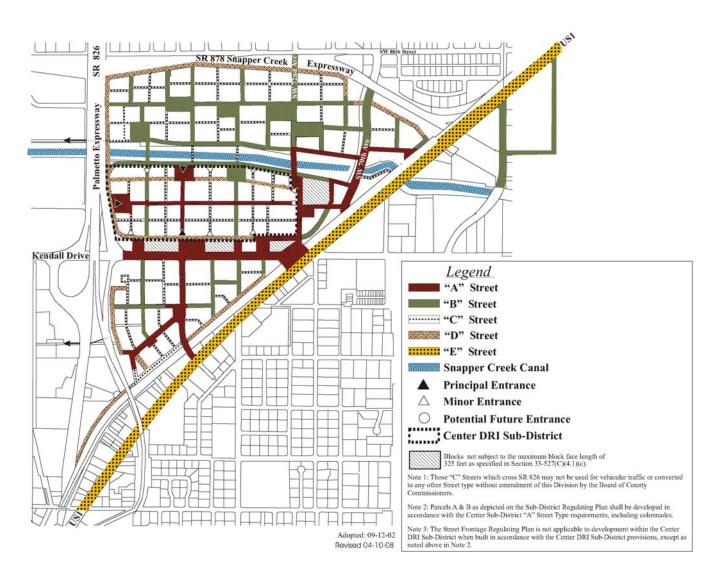
[Obsolete Open Space Plan omitted]

# Sec. 33-284.61. Regulating plans.

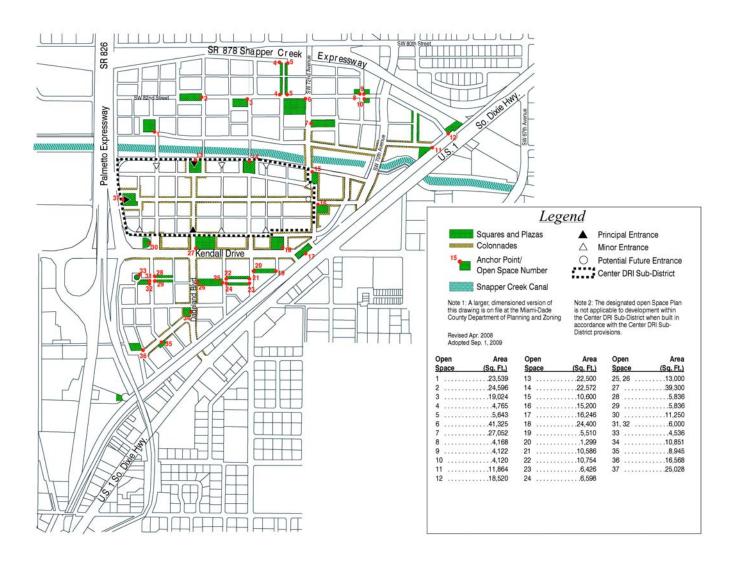
### (A) Sub-District Plan



### (B) Street Frontage Plan



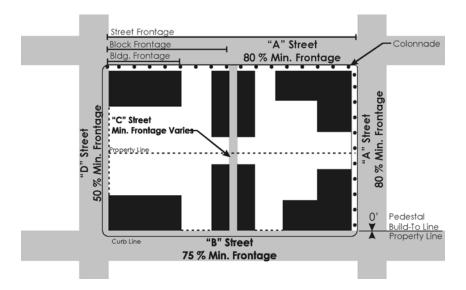
### (C) Designated Open Space Plan



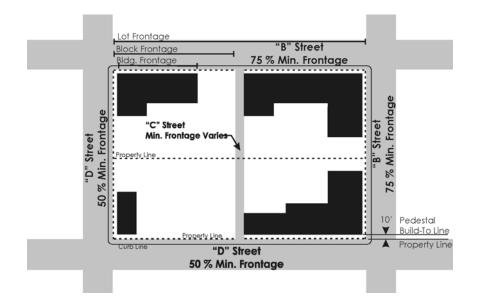
# Sec. 33-284.62. Development parameters.

(A) Placement Diagrams. The following diagrams in this section identify design parameters specifically for the thirteen (13) Sub-district and frontage type situations.

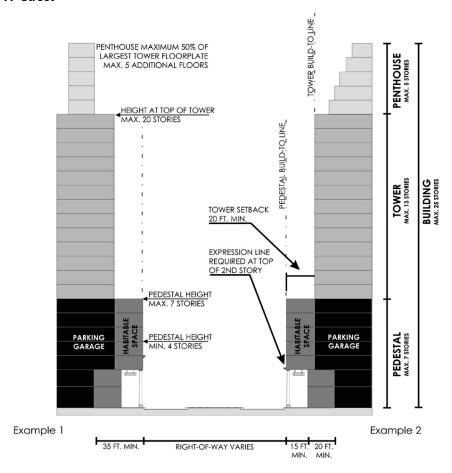
### **Core/Center Sub-District Placement Diagram**



### **Edge Sub-District Placement Diagram**



### Core Sub-District—"A" Street



**Building Height** 

Pedestal—At street front four (4) stories minimum/seven (7) stories maximum.

Tower—Thirteen (13) stories maximum.

Penthouse—Five (5) stories maximum. Floorplate maximum is fifty (50) percent of largest tower floorplate below.

**Building Placement** 

Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum eighty (80) percent of lot width. Free standing colonnades shall not count for frontage length.

Streetwalls

Colonnade—Two (2) story high for full required frontage at build-to line. Fifteen (15) foot minimum depth. Colonnade depth shall not exceed colonnade height. Exterior of colonnade shall be no closer than two (2) feet from curb line.

Vehicular Entries—Not permitted, except when not accessible from a street of lesser hierarchy. If other frontages do not permit vehicular entries, the maximum vehicular entry width permitted shall be thirty-three (33) feet.

Habitable Space—Twenty (20) foot minimum depth for full height and length of pedestal.

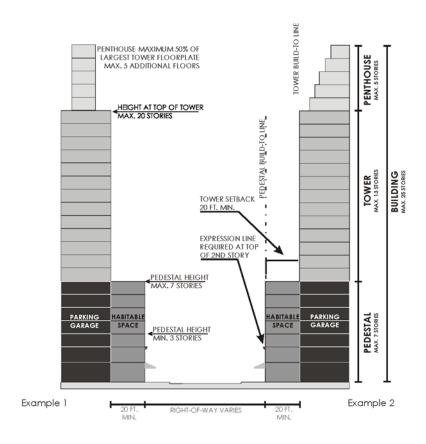
Expression Line—Required at the top of the second story.

Off-Street Parking

Colonnade Levels—Twenty (20) foot minimum setback from interior wall of colonnade.

Other Levels—Twenty (20) foot minimum setback from pedestal's build-to line.

### Core Sub-District—"B" Street



Building Height Pedestal—At street front three (3) stories minimum/seven (7) stories maximum.

Tower—Thirteen (13) stories maximum.

Penthouse—Five (5) stories maximum. Floorplate maximum is fifty (50) percent of largest tower

floorplate below.

Building Placement Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and

penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum seventy-five (75) percent of lot width.

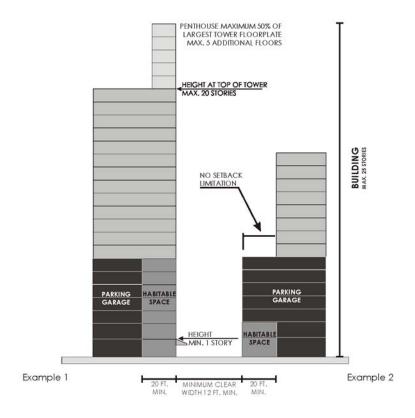
Streetwalls Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

terval of sixty (60) feet of habitable space between each vehicular entry -along frontage. Habitable Space—Twenty (20) foot minimum depth for full height and length of pedestal.

Expression Line—Required at the top of the second story.

Off-Street Parking All Levels—Twenty (20) foot minimum setback from pedestal's build-to line.

### Core Sub-District—"C" Street



**Building Height** 

Pedestal—At street front one (1) story minimum/seven (7) stories maximum.

Tower—Thirteen (13) stories maximum.

Penthouse—Five (5) stories maximum. Floorplate maximum is fifty (50) percent of largest tower floorplate.

**Building Placement** 

Spacing—A minimum clear width of twelve (12) feet is required between buildings. For vehicular access, a minimum clear width of sixteen (16) feet is required.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Overhead Cover—A maximum of twenty-five (25) percent of the street may be covered above the first floor with structures connecting buildings including roofs, upper story terraces, pedestrian bridges, or automobile bridges between parking garages.

Frontage Length—Minimum seventy-five (75) percent of lot width.

Streetwalls

Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum interval of sixty (60) feet of habitable space between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot minimum depth for first two (2) stories and full length of pedestal.

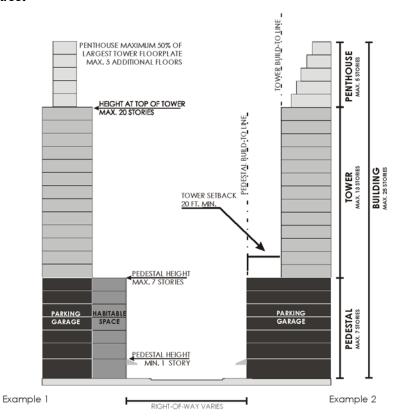
Expression Line—None required.

Off-Street Parking

Street Level—Twenty (20) foot minimum setback from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

### Core Sub-District—"D" Street



Building Height Pedestal—At street front one (1) story minimum/seven (7) stories maximum.

Tower—Thirteen (13) stories maximum.

Penthouse—Five (5) stories maximum. Floorplate maximum is fifty (50) percent of largest tower

floorplate below.

Building Placement Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and

penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum fifty (50) percent of lot width.

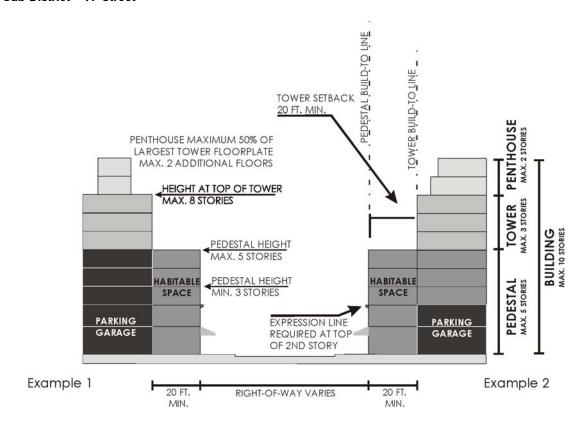
Streetwalls Vehicular Entries—Vehicular entries and utility entries are permitted.

Habitable Space—No limitations. Expression Line—None required.

Off-Street Parking Street Level—No setback required from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

#### Center Sub-District—"A" Street



**Building Height** 

Pedestal—At street front three (3) stories minimum/five (5) stories maximum.

Tower—Three (3) stories maximum.

Penthouse—Two (2) stories maximum. Floorplate maximum is fifty (50) percent of largest tower floorplate below.

**Building Placement** 

Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum eighty (80) percent of lot width. Free standing colonnades shall not count for frontage length.

Streetwalls

Colonnade—Two (2) story high for full required frontage at build-to line. Fifteen (15) foot minimum depth. Colonnade depth shall not exceed colonnade height. Exterior of colonnade shall be no closer than two (2) feet from curb line.

Vehicular Entries—Not permitted, except when not accessible from a street of lesser hierarchy. If other frontages do not permit vehicular entries, the maximum vehicular entry width permitted shall be thirty-three (33) feet.

Habitable Space—Twenty (20) foot minimum depth for full height and length of pedestal.

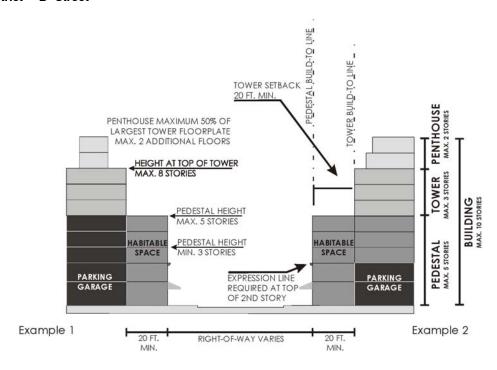
Expression Line—Required at the top of the second story.

Off-Street Parking

Colonnade Levels—Twenty (20) foot minimum setback from interior wall of colonnade.

Other Levels—Twenty (20) foot minimum setback from pedestal's build-to line.

### Center Sub-District—"B" Street



Building Height Pedestal—At street front three (3) stories minimum/five (5) stories maximum.

Tower—Three (3) stories maximum.

Penthouse—Two (2) stories maximum. Floorplate maximum is fifty (50) percent of largest tower

floorplate below.

Building Placement Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and

penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum seventy-five (75) percent of lot width.

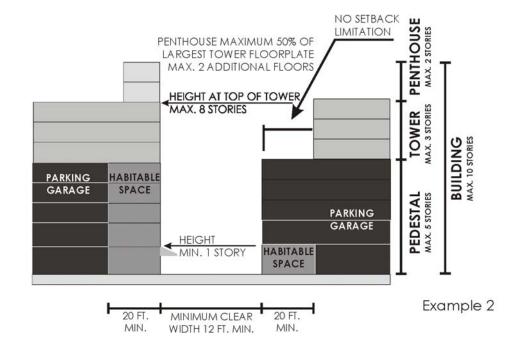
Streetwalls Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

terval of sixty (60) feet of habitable space between each vehicular entry along frontage. Habitable Space—Twenty (20) foot minimum depth for full height and length of pedestal.

Expression Line—Required at the top of the second story.

Off-Street Parking All Levels—Twenty (20) foot minimum setback from pedestal's build-to line.

### Center Sub-District—"C" Street



**Building Height** 

Example 1

Pedestal—At street front one (1) story minimum/five (5) stories maximum.

Tower—Three (3) stories maximum.

Penthouse—Two (2) stories maximum. Floorplate maximum is fifty (50) percent of largest tower

floorplate below.

**Building Placement** 

Spacing—A minimum clear width of twelve (12) feet is required between buildings. For vehicular

access, a minimum clear width of sixteen (16) feet is required.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Overhead Cover—A maximum of twenty-five (25) percent of the street may be covered above the first floor with structures connecting buildings including roofs, upper story terraces, pedestrians bridges, or automobile bridges between parking garages.

Frontage Length—Minimum fifty (50) percent of lot width.

Streetwalls

Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

terval of sixty (60) feet of habitable space between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot minimum depth for first story and full length of pedestal.

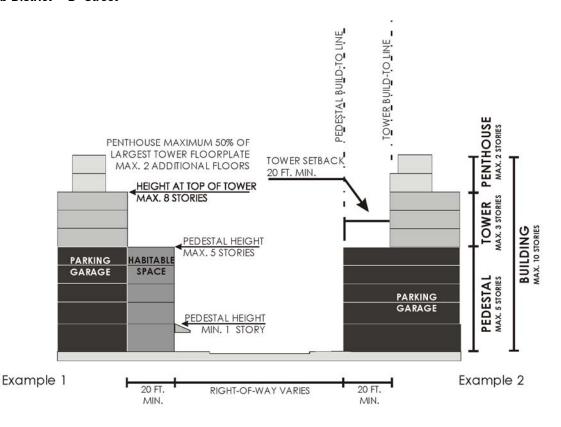
Expression Line—None required.

Off-Street Parking

Street Level—Twenty (20) foot minimum setback from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

### Center Sub-District—"D" Street



Building Height Pedestal—At street front one (1) story minimum/five (5) stories maximum.

Tower—Three (3) stories maximum.

Penthouse—Two (2) stories maximum. Floorplate maximum is fifty (50) percent of largest tower

floorplate below.

Building Placement Front—Zero (0) foot build-to line for pedestal/twenty (20) foot minimum setback for tower and

penthouse.

Interior Side/Rear—Zero (0) foot minimum setback for pedestal, tower and penthouse.

Frontage Length—Minimum fifty (50) percent of lot width.

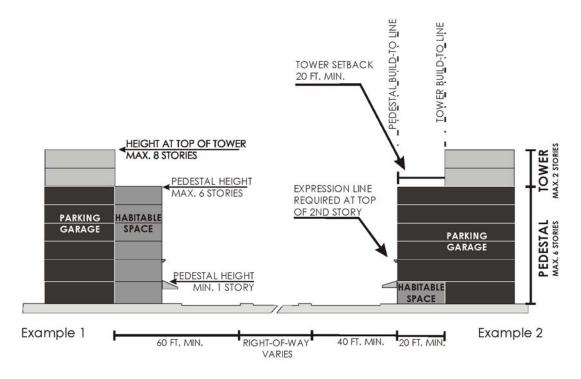
Streetwalls Vehicular Entries—Vehicular entries and utility entries are permitted.

Habitable Space—No limitations. Expression Line—None required.

Off-Street Parking Street Level—Twenty (20) foot minimum setback from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

### Center Sub-District—"E" Street



Building Height Pedestal—At street front one (1) story minimum/six (6) stories maximum.

Tower—Two (2) stories maximum.

Building Placement Front—Build-to line forty (40) feet from right-of way for pedestal/sixty (60) foot minimum setback

from right-of-way for tower.

Interior Side/Rear—Twenty (20) foot minimum setback for pedestal/thirty (30) foot minimum set-

back for tower.

Frontage Length—Minimum fifty (50) percent of lot width.

Streetwalls Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

terval of seventy (70) feet between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot depth minimum for first story and entire length of pedestal.

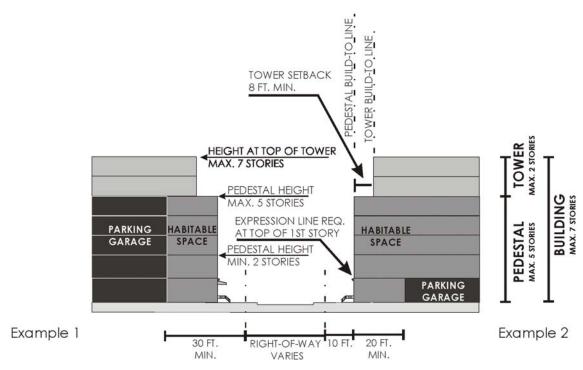
Expression Lines—Required at the top of the second story.

Off-Street Parking Street Level—Eight (8) foot minimum setback from the front property line.

Other Levels—Parking garages may be no closer to the front property line than the build-to line. At least one (1) vehicular connection shall be provided between surface parking lots and garages,

across property lines.

## Edge Sub-District—"B" Street



Building Height Pedestal—At street front two (2) stories minimum/five (5) stories maximum.

Tower—Two (2) stories maximum, including pedestal.

Building Placement Front—Build-to line ten (10) feet from right-of-way for pedestal/eighteen (18) foot minimum set-

back from right-of-way for tower.

Interior Side/Rear-Eight (8) foot minimum setback for first two (2) stories, two (2) foot additional

setback for each additional story.

Frontage Length—Minimum seventy-five (75) percent of lot width.

Streetwalls Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

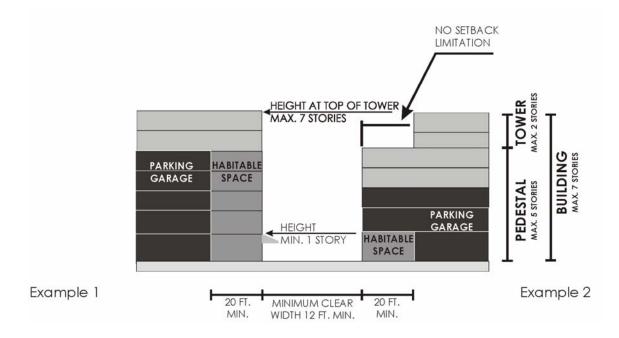
terval of sixty (60) feet of habitable space between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot minimum depth for full height and length of pedestal.

Expression Line—Required at the top of the first story.

Off-Street Parking All Levels—Twenty (20) foot minimum setback from pedestal's build-to line.

#### Edge Sub-District—"C" Street



**Building Height** 

Pedestal—At street front one (1) story minimum/five (5) stories maximum.

Tower—Two (2) stories maximum.

**Building Placement** 

Spacing—A minimum clear width of twelve (12) feet is required between buildings. For vehicular access, a minimum clear width of sixteen (16) feet is required. For a minimum fifty (50) percent of its length. C street width shall be at a minimum thirty-three (33) percent of its abutting building height. If a C street abuts a property line, there shall be a twelve (12) foot minimum setback for the pedestal and thirty (30) foot minimum setback for the tower.

Overhead Cover—A maximum of twenty-five (25) percent of the street may be covered above the first floor with structures connecting buildings including roofs, upper story terraces, pedestrians bridges, or automobile bridges between parking garages.

Frontage Length—Minimum twenty-five (25) percent of lot width.

Streetwalls

Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum interval of sixty (60) feet of habitable space between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot minimum depth for first story and full length of pedestal.

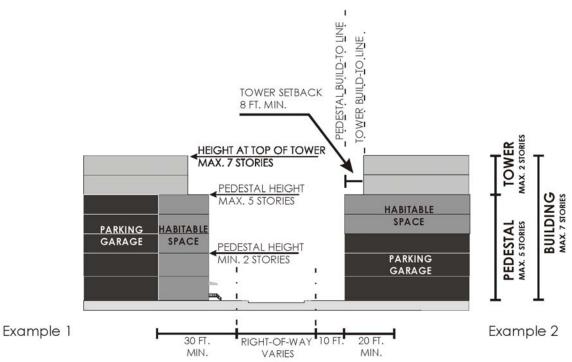
Expression Line—None required.

Off-Street Parking

Street Level—Twenty (20) foot minimum setback from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

## Edge Sub-District—"D" Street



Building Height Pedestal—At street front two (2) stories minimum/five (5) stories maximum.

Tower—Two (2) stories maximum.

Building Placement Front—Build-to line ten (10) feet from right-of-way for pedestal/eighteen (18) foot minimum set-

back from right-of-way for tower.

Interior Side/Rear-Eight (8) foot minimum setback for first two (2) stories, two (2) foot additional

setback for each additional story.

Frontage Length—Minimum fifty (50) percent of lot width.

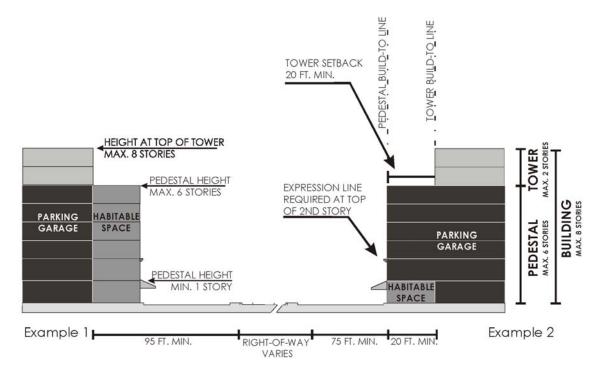
Streetwalls Vehicular Entries—Vehicular entries and utility entries are permitted.

Habitable Space—No limitations. Expression Line—None required.

Off-Street Parking Street Level—Twenty (20) foot minimum setback from pedestal's build-to line.

Other Levels—No setback required from pedestal's build-to line.

#### Edge Sub-District—"E" Street



Building Height Pedestal—At street front one (1) story minimum/six (6) stories maximum.

Tower—Two (2) stories maximum.

Building Placement Front—Build-to line seventy-five (75) feet from right-of-way for pedestal/ninety-five (95) foot mini-

mum setback from right-of-way for tower.

Interior Side/Rear—Twenty (20) feet minimum setback for pedestal/thirty (30) foot minimum set-

back for tower.

Frontage Length—Minimum fifty (50) percent of lot width.

Streetwalls Vehicular Entries—Allowed. Each entry may be up to thirty-three (33) feet wide, with a minimum in-

terval of seventy (70) feet between each vehicular entry along frontage.

Habitable Space—Twenty (20) foot minimum depth for first story and entire length of pedestal.

Expression Lines—Required at the top of the second story.

Off-Street Parking Street Level—Eight (8) foot minimum setback from the front property line.

Other Levels—Parking garages may be no closer to the front property line than the build-to-line. At

least one (1) vehicular connection shall be provided.

(B) General Requirements. All new development and redevelopment shall comply with the following parameters irrespective of Sub-District and frontage categories:

- (1) Permitted Uses.
  - (a) Permitted uses in Core and Center Sub-Districts shall be as follows:

All business and civic uses permitted in the BU-1, BU-1A, BU-2 Districts, and the following:

- i. Area for residential uses shall not require public hearing.
- ii. The following BU-3 uses shall be permitted:
  - a. Bakeries, retail and wholesale.
  - Cabinet working and carpentry shops.
  - c. Locksmith shops.
  - d. Secondhand stores.
  - e. Television and broadcasting stations.
  - f. Upholstery and furniture repairs.
- iii. Outside food sales and services including but not limited to outdoor dining, cart vendors, and merchandise displays shall not require public hearing.
- iv. Drive-in services shall be concealed from "A", "B" and "C" streets by buildings or garden walls.
- v. The provisions of Section 33-150(A) and (B) of this Code regarding alcoholic beverages shall not apply.
- (b) Land uses permitted in Edge Sub-Districts shall be as follows:
  - Edge Sub-district west of SW
     72nd Avenue and north of Snapper Creek Canal.

- i. All residential and civic uses permitted in the RU-4, RU-4A, and RU-4M Districts.
- ii. Up to one (1) percent of each building's floor area may be BU-1 business uses. Up to four (4) percent of each building's floor area that fronts a street or a square may have BU-1 business uses facing the street or square.
- Edge Sub-district east of U.S. Highway 1.
  - All residential and civic uses permitted in the RU-4, RU-4M and RU-4A Districts.
  - ii. All business and civic uses permitted in the BU-1, BU-1A, BU-2, BU-3, RU-5, RU-5A Districts, except as follows:
  - iii. Area for residential uses shall not require public hearing.
  - iv. Outside food sales and service including but not limited to outdoor dining, cart vendors, and merchandise displays shall not require public hearing.
  - v. Drive-in services shall be concealed from "A", "B" and "C" streets by buildings or garden walls.

For Edge Sub-District properties east of US Highway 1 that border an adjacent residential zone, the buildings located within of one hundred (100) feet of the affected rear or side of the property boundary shall not exceed the adjacent district height restrictions by more than two (2) stories.

Primary access to all retail uses fronting on both a street and a paseo, or on both a street and a courtyard garden, shall be from the street.

- (2) Lots and Buildings.
  - (a) Minimum lot size is two thousand (2,000) square feet with a minimum frontage of twenty (20) feet.
  - (b) All lots shall share a frontage line with a street or square.
  - (c) Each story shall be between eight (8) feet and fourteen (14) feet high from floor to ceiling. Floors more than fourteen (14) feet, as measured from floor to ceiling, will count as additional floors. Within the pedestal, one (1) story may exceed fourteen (14) feet, up to thirty (30) feet, provided no mezzanine area intended for commercial use exceeds ten (10) percent and no mezzanine area intended for residential use exceeds eighty (80) percent of the area of the floor immediately below.
  - (d) No replatting or subdivision shall serve as a basis for deviating from this Article.
  - (e) All buildings shall have their main pedestrian entrance opening to an "A", "B", "C", or "E" street, courtyard garden or square. There shall be pedestrian entrances at maximum intervals of seventy-five (75) feet along "A," and "B" Streets. When ground level uses have entries from both streets and other public open space, the primary entrance will be from the street. Doors facing streets shall remain operational during business hours.
  - (f) Maximum building floorplates above eight stories for all uses shall be twenty thousand (20,000) square feet. Cantilever

- balconies six (6) feet or less in depth shall not be counted towards the maximum building floorplate area.
- (g) Minimum spacing between towers within any one (1) continuous property line is sixty (60) feet.
- (h) Aggregate tower frontage facing any street may not exceed two hundred twenty-five (225) feet per block or seventy (70) percent of street frontage, whichever is greater.
- Where an "A" "B" or "D" street intersects (i) with another street, the corner of the building may need to be chamfered (angled) or rounded to satisfy view triangle and minimum sidewalk width requirements, and to make room for traffic signal poles (see diagram 1). The angled wall of the building shall count toward frontage requirements for both streets that it fronts. In situations where the view triangle causes the front facade to "bend" at a shallow angle from the street, the angled or rounded wall may set back farther from the street intersection for esthetic and structural reasons. However, the setback shall not be farther than twenty (20) feet measured from the intersection of the two (2) property lines perpendicularly to the front plane of the angled wall. For curved walls this will be measured to the midpoint of the curve. The depth of the colonnade underneath the angled wall of the building shall also be a minimum of fifteen (15) feet.

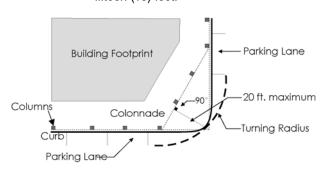


Diagram 1

(j) Building design shall use energy conservation measures including but not limited to self-shading, natural lighting, natural ventilation, outdoor circulation, and reduced dependence on artificial lighting and air conditioning. Porches, balconies, breezeways, pergolas, deep eaves, eyebrows and other elements promoting natural ventilation and shading are encouraged. Each building shall dedicate a specific location for recycling separation, storage and access.

- (k) Vehicular entry gates at garage entries shall be positioned a minimum of twenty (20) feet behind the front wall of the building. At colonnaded frontages, this distance is measured from the interior/rear wall of the colonnade. To increase safety during off-hours, the setback area between the entry gate and the public sidewalk may be gated at the sidewalk edge during times when the garage is closed.
- (I) Exterior finish material shall be limited to concrete, stucco, quarried stone, cast stone, decorative concrete block, terra cotta, tile, metal, and glass. Wood and marble door and window surrounds are permitted, as are wood pergolas and trellises. Fabric awnings are permitted without back lighting.
- (m) Glazing and Transparency Requirements:
  - (1) Building streetwall surfaces shall be a minimum thirty (30) percent glazed. Mirror-type glass shall not be allowed. All glazing shall be of a type that permits view of human activities and spaces within. Glazing shall be clear or very lightly tinted, except where used for screening garages, where it may be translucent.
  - (2) Storefronts shall be provided on the first floor, directly accessible from Public Space. Storefronts

shall be a minimum of sixty (60) percent clear-glazed except for jewelry stores, which may be a minimum of twenty (20) percent, and for residential uses which may be a minimum of forty (40) percent. Except for entrance doors, the bottom edge of the glazed areas shall be between eighteen (18) and thirty-six (36) inches above the sidewalk.

- (3) Storefront security screens, if any, shall be of the mesh type that pedestrians can see through and shall be located behind storefront displays. Storefronts shall remain open to view and lit from within at night.
- (4) Parking garage and loading area security screens and gates shall be a minimum of fifty (50) percent transparent.
- (n) Colonnade column spacing, windows, and doors shall have a vertical proportion. The spacing of the columns of a colonnade, measured from the centerline of the columns, shall not be greater than the height of the colonnade.
- (o) Cantilevers and moldings shall not exceed three (3) feet in extension beyond the vertical wall surface, unless visibly supported by brackets or other supports.
- (p) Parking garages shall have all architectural expression facing public open space consistent and harmonious with that of habitable space. The architectural expression shall include vertically proportioned openings, balconies, glazing, awnings, or other similar architectural elements. Ramping is encouraged to be internalized wherever possible. Exposed spandrels are prohibited. The exposed top level of parking structures shall be covered a minimum of sixty (60) percent with a shade producing structure such as

- a vined pergola or retractable canvas shade structure. All garage lighting installations shall be designed to minimize direct spillage, sky glow and hazardous interference with vehicular traffic on adjacent rights-of-way and all adjacent properties; this may be achieved through the use of down-turned building beams, garage screening, landscaping, or other similar architectural elements.
- (q) No building fixtures such as backflow preventers, pumps, underground ventilation exhausts, substations or similar shall be permitted above the ground within colonnades, sidewalks and open spaces.
- (3) Streets, Alleys, and Paseos. New streets shall be located according to the Street Frontage Plan. These locations are schematic to allow flexibility in the design of the site plan. The design of new streets and modifications to existing streets shall follow the requirements below:
  - (c) Streets shall provide access to all building lots and tracts.
  - (d) All streets, alleys and paseos shall connect to other streets. Cul-de-sacs, and Tturnarounds are not permitted. Dead-end streets are only permitted for those shown on the Street Frontages Plan when the adjacent property has not been developed or redeveloped.
  - (e) No block face shall have a length greater than three hundred and twenty-five (325) feet without a street, paseo, courtyard garden or alley providing through access to another street, alley, or paseo.
  - (f) All new "A", "B" and "D" streets, both public and private, shall have a minimum right-of-way width of fifty-four (54) feet. All new "A", "B" and "D" streets shall have curb and gutter, and have sidewalks on both sides of the travel lanes. Where possible, there shall be parking lanes which in addition to on-street parking may be used for "drop off" areas, valet stands, or bus stops.

- i. All sidewalks shall have a minimum width of ten (10) feet, and a continuous unobstructed area of a width no less than sixty (60) inches. This area shall be unobstructed by utility poles, fire hydrants, benches or any other temporary or permanent structures. Free and clear public use of sidewalk area outside of the right-of-way shall be protected by a public access easement.
- ii. On-street parking lanes shall not be closer than twenty-five (25) feet to intersections measured from the intersecting property lines (see diagram 2).
- iii. All streets, except "C" streets, shall have at least two (2) travel lanes, one (1) in each direction; however, streets around squares may have one (1) travel lane with one-way traffic.

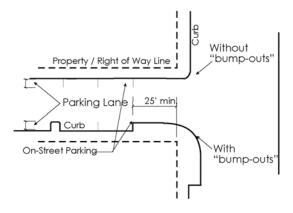


Diagram 2

- (g) In addition to the required "D" streets designated in the Street Frontage Plan, "D" streets or alleys are encouraged to the rear of building lots.
- (h) Curb radii at intersections shall be thirtyfour (34) feet six (6) inches or less.
- (i) A minimum turning radius of thirty-six(36) feet shall be provided at street inter-

sections. A clear zone is required when the curb extends beyond the turnout radius.

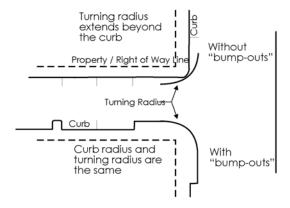


Diagram 3

- (j) Awnings, balconies, roof eaves, signs, porches stoops and ramps may encroach into setbacks. Awnings, balconies, roof eaves and signs may encroach into rights-of-way; however, they shall not extend a distance closer than six (6) inches from the curb face. All right-of-way encroachments shall be a minimum one hundred thirty-two (132) inches above the sidewalk. Encroachments shall not be taller than the building or pedestal, whichever is lower.
- (k) With the exception of fire hydrants, utilities shall run underground and above-ground projections of utilities shall be placed in or along rights-of-way of streets of lower pedestrian quality, wherever practicable.
- (4) Courtyard Gardens, Street and Garden Walls, Fences and Hedges. Street and garden walls, fences and hedges may be placed along property lines, at a height not to exceed ninety-six (96) inches, except in the Edge Sub-District, where side and rear yard walls are limited to seventy-two (72) inches in height. At street frontages, street and garden walls and fences shall be minimum fifty (50) percent transparent, and between thirty-six (36) inches and seventy-two (72) inches above

grade for at least eighty (80) percent of the length. Pillars and posts shall average no more than ten (10) feet apart. Chain link fences are not permitted, except for temporary construction fences.

Only where necessary, walls, fences and hedges along street frontages shall angle away from street intersections and driveways to avoid obstructing the sight visibility triangles or to provide the minimum eight (8) foot sidewalk width at the intersecting streets.

A courtyard garden shall have at least two (2) sides enclosed by building walls; the remaining sides shall be enclosed by either fences or garden walls, and a minimum thirty (30) percent of its area shall be landscaped. The street opening to the courtyard garden shall not exceed the width of the street or square that it opens on to.

- (5) Open Space and Recreation Areas.
  - (a) Private Open Spaces. A minimum of fifteen (15) percent of each net site shall be reserved for private open space. Colonnades, greens, landscaped roof terraces on buildings or garage structures can be counted towards this requirement.
  - Designated Open Spaces. Designated (b) open space in the form of colonnades, squares and plazas shall be located according to the Designated Open Space Plan. All designated open spaces shall be at grade level and shall be accessible to the public. No replatting or other land division shall divide property in such a way that the provision of the required designated open space is avoided or its location changed. Designated open space areas provided in compliance with this section of the code shall count towards the private open space requirement provided herein.

Location, area and dimensions of the designated open spaces shall conform with the Designated Open Space Plan. Total square area must be in accordance with the Designated Open Space Plan; and the square must include the anchor

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point specified on the Designated Open Space Plan. At least three (3) corners of a square shall have a street intersection; and squares shall have a minimum dimension of one hundred fifty (150) feet between surrounding vehicular access ways.

Squares and plazas shall be densely shaded and provide seating. Trees and shrubs (shrubs are not permitted in plazas) shall be of sufficient quantity and located as to define a specific geometry of open space and shall promote security by allowing visibility through all areas. Ground surface shall be a combination of paving, lawn or ground cover integrated in design with trees and shrubs. Fountains, sculpture, and works of art are encouraged. Street furniture in squares such as trash containers and bus benches shall be permanently secured to the sidewalk. Street furniture shall not obstruct sight visibility triangles at street intersections.

(c) (c) Recreation Areas. Educational and child care facilities located within an Urban Center District shall be exempt from the outdoor recreation area requirements of Section 33-151.18(a) of this Code and shall be required to provide indoor and/or outdoor recreation areas subject to the following requirements:

| Categories                     |          |                      | Required Recreation   |
|--------------------------------|----------|----------------------|-----------------------|
|                                |          |                      | Area (*)              |
| Child                          | care/day | nurs-                | 22.5 square feet per  |
| ery/kindergarten and preschool |          | child calculated in  |                       |
| and after-school care          |          | terms of half of the |                       |
|                                |          |                      | proposed maximum      |
|                                |          |                      | number of children    |
|                                |          |                      | for attendance at the |
|                                |          |                      | school at one (1)     |
|                                |          |                      | time.                 |

Recreation Area consists of indoor and outdoor recreation areas. Indoor-recreation areas may consist of indoor playgrounds, indoor pools, gymnasiums and/or indoor ball courts and/or similar indoor recreation facilities. Outdoor recreation areas may include rooftop facilities.

- (6) Parking.
  - (a) Parking shall be provided as per Section33-124 of this Code, except as follows:
    - (1) In the Core Sub-District, for all single use projects, the minimum parking permitted shall be:
      - Residential—One (1)
         parking space per dwelling unit.
      - ii. Office—One (1) parking space per fourhundred (400) square feet of gross floor area.
      - iii. Hotel—One (1) parking space for every two (2) guest rooms.
      - iv. Other uses—Use parking standard as specified in Section 33-124 of this Code.
    - (2) In the Core Sub-District, required parking for mixed-use projects shall be calculated by applying the Urban Land Institute (ULI) Shared Parking Methodology, on file with the Director, to the parking standards above. Required parking shall fulfill between ninety (90) percent and one hundred ten (110) percent of the calculated requirement.
    - (3) In the Center and Edge Sub-Districts, parking requirements for mixed-use projects shall be calculated by applying the (ULI) Shared Parking Methodology to

the parking standards as specified in Section 33-124 of this Code. Parking shall fulfill between ninety (90) percent and one hundred ten (110) percent of the ULI calculated requirement.

- (4) Off-street parking areas shall be located on the same lot, parcel or premises as the use to be served; or may be on a lot or parcel of land that is in the Downtown Kendall Urban Center District and is within three hundred (300) feet from the site of such use(s) to be served; provided such use(s) shall immediately terminate in the event such parking area therefor is not available and all those having any right, title or interest in and to such property site shall execute and place on the public records of this County a covenant approved by the Director that such use(s) shall cease and terminate upon the elimination of such parking area, and that no use shall be made of such property until the required parking area is available and provided.
- (5) On-street parking spaces directly abutting a lot shall count toward the parking requirement for development of that lot, except that such spaces shall not count toward parking requirements for disabled persons or persons transporting baby strollers. All such on-street spaces shall be designed in accordance with the requirements of Section 33-284.62(C) of this code.

- (b) Surface parking lots shall be located a minimum of twenty (20) feet from the front property line along "A" and "B" Streets. Streetwalls and/or habitable space shall be built at the frontage line or at the build-to line to screen parking from view.
- (c) Parking garages shall be screened at all frontages except "D" streets by a minimum setback of twenty (20) feet of habitable space.
- (d) Parking garages on parcels of record as of the date of approval of this Article facing "A" streets that have a lot depth at any one (1) point of less than one hundred fifty (150) feet are required to provide habitable space only at the colonnade levels. However, architectural expression shall remain required as per this article.
- (e) Drop off drives and porte-cocheres fronting onto "A" or "B" street frontages may only occur behind habitable space, in courtyard gardens, on "C" and "D" streets, and alleys.
- (f) Loading and service entries shall be allowed only on "D" streets, alleys and within parking lots and structures. For those properties with frontages only on "A", "B" and "C" streets loading and servicing shall be allowed on the street frontage.
- (g) Pedestrian entries to parking garages shall be directly from the street or paseo as well as from the contiguous building. Pedestrian entries to garages shall be linked to cross-block paseos wherever possible.
- (h) Vehicular entries to garages shall be allowed only from rights-of-way, paseos and alleys. Vehicular entries on "A", "B", "C", and "E" frontages shall have a maximum width of thirty-three (33) feet with a minimum separation of seventy (70) feet between entries. On "D" streets they shall not be limited.

- Parking lots shall provide for pedestrian and vehicular cross access to existing and prospective adjacent parking lots.
- (j) Parking stall dimensions and spaces for persons with disabilities and/or strollers shall be in accordance with Article VII of the Miami-Dade County Code.
- (k) Bicycle racks shall be provided on all sites as per Ordinance No. 99-81.
- (I) Mechanized parking shall be allowed for residential multi-family and nonresidential buildings and when provided it shall be exempt from the provisions of Section 33-122 of this Code. For the purpose of this article, mechanized parking shall be defined as a mechanism with vertical and horizontal transport capability that provides for automobile storage or retrieval. A mechanized parking space may be counted as a parking space required in this section provided that:
  - A queuing analysis is submitted and approved during the Administrative Site Plan and Architectural Review.
  - b. Mechanized parking shall be located within an enclosed building/garage which shall be screened along all frontages, except along a service road or a pedestrian passage, by a liner building containing a minimum depth of 20 feet of habitable space.
- (m) The provisions of Section 33-131 of this Code shall not apply to the required parking for mixed-use developments.
- (n) Child care facilities located within a mixed-use building shall be exempt from the auto-stacking requirements of Section 33-151.18(c) of this Code.

## Sec. 33-284.63. Additional parameters.

The following are required irrespective of frontage and Sub-District categories:

- (A) Landscape. With the exception of Sections 18A-7, 18A-8, 18A-9, 18A-11, 18A-12 and 18A-13, the provisions of Chapter 18A of the Code of Miami-Dade County, Florida, shall not apply, except as provided for below. Trees and landscape shall be required for streets, medians, squares, plazas, and private property in accordance with the following:
  - (1) Street Trees: Street trees shall be placed along "B", "C" and "E" Streets at a maximum average spacing of twenty (20) feet on center. Street trees shall have a minimum caliper of six (6) inches and shall have a minimum clear trunk of eight (8) feet at the time of planting. Palms shall not be used as street trees. Street trees are not required when colonnades are provided along the street.
  - (2) Median Trees: Median trees shall have a minimum caliper of six (6) inches and shall have a minimum clear trunk of eight (8) feet at time of planting. Median planting shall provide a one hundred (100) percent canopy coverage within two (2) years of installation. Median trees may be a maximum of twenty (20) percent flowering trees or palms, which at time of planting shall have a minimum height of fifteen (15) feet, a minimum spread of ten (10) feet, and a minimum caliper of three (3) inches.
  - (3) Square and Plaza Trees: Trees on squares and plazas shall have a minimum caliper of six (6) inches and shall have a minimum clear trunk of eight (8) feet. Trees on squares and plazas shall provide a one-hundred (100) percent canopy coverage for eighty (80) percent of the entire square within five (5) years of installation. Trees for squares and plazas may be ten (10) percent palms of the following species: phoenix canariensis

(Canary Island Date Palm); phoenix dactylifera (North African Date Palm); 'Medjool' (Date Palm); and 'Zahidi' (Date Palm); phoenix sylvestris (Wild Date Palm); roystonea elata (Florida Royal Palm) and regia (Cuban Royal Palm).

- (4) With the exception of squares as provided in Section 33.284.62 (C)(6) above, no shrubs are required.
- (5) Tree requirements for private property shall be based on sixteen (16) trees per net acre of lot area and, in addition to the lot, may be placed in squares, plazas and medians within the District. Trees shall have a minimum caliper of six (6) inches and shall have a minimum clear trunk of eight (8) feet at time of planting.
- (6) At grade parking lots shall follow all requirements of Section 18A(6)(J) of this Code.
- (7) All landscaped areas of squares and required setbacks shall be continuously maintained in a good, healthy condition, and sprinkler systems of sufficient size and spacing shall be installed to serve all required landscaped areas and parking lots. Irrigation shall supply a minimum of the equivalent one and one-half (1½) inch rainfall per week. Rain sensors shall be installed in all systems.
- (8) To ensure quality and longevity, the following additional conditions for tree planting in streets, medians, squares, and plazas shall apply:
  - i. All trees shall be Florida Grade #1 or better.
  - ii. All trees shall be shaped and branched typical for the species and variety.
  - iii. A signed and sealed "Professional Preparer's Statement of Compliance" shall be submitted by the Project Landscape Architect at time of submission for

- Administrative Site Plan Approval (ASPR), zoning, or other approval.
- iv. A signed and sealed "Professional Preparer's Certification at time of Final Inspection" shall be submitted by the project Landscape Architect before a Certificate of Occupancy may be issued.
- A minimum of thirty (30) percent of the total of all trees or palms planted shall be of a native species.
- vi. A minimum six (6) foot by six (6) foot opening, clear of utilities, shall be provided for all trees.
- vii. Root barriers shall be provided for all tree plantings.
- viii. Tree grates or other approved devices shall be provided around all trees in hard surfaced areas to ensure adequate water and air penetration.
- (B) Signage. Three (3) types of signs are allowed: temporary signs, point of sale signs and directional signs. Outdoor advertising signs, automatic electric changing signs, and entrance features are not permitted. All signs shall not obstruct sight visibility triangles at street intersections. Lawful freestanding signs existing on December 16, 1999, shall be permitted to remain, and shall be permitted to be updated and maintained in substantial compliance with plans approved as of that date.
  - (1) Temporary Signs.
  - (a) Real Estate for sale, lease, or rent.
    - (i) Size: One hundred fifty (150) square inches maximum.
    - (ii) Number: One (1) sign per street frontage.
    - (iii) Setback and Spacing: The outer edge of real estate signs shall be no closer than: five (5) feet to

- an official right-of-way line unless attached to an existing building; fifteen (15) feet to an interior side property line; or they shall be centered on a lot between interior side property lines.
- (iv) Illumination: Section 33-96, Illumination, of this Code, shall apply, except that revolving, rotating and otherwise moving signs shall be prohibited.
- (v) Maximum Height: Maximum height to top of sign shall be six (6) feet above grade for detached signs. For attached signs, minimum height shall be five (5) feet above grade.
- (vi) Special Conditions: No permit shall be required for signs that are no larger than one hundred fifty (150) square inches and which are not electrically illuminated. Real estate signs shall only be permitted on premises advertised for lease or sale. Upon sale or lease, the sign shall be immediately removed.
- (b) Construction Signs.
  - (i) Size: Thirty-two (32) square feet maximum for a detached sign. When construction signs are painted on an approved construction shed or trailer, there is no size limitation.
  - (ii) Number: One (1) per street frontage.
  - (iii) Setback and Spacing: The outer edge of the sign shall be no closer than zero (0) feet from official right of way, and five (5) feet minimum from property under different ownership.

- (iv) Illumination: Section 33-96, Illumination, of this Code, shall apply, except that revolving, rotating and otherwise moving signs shall be prohibited.
- (v) Maximum Height: Maximum height to top of sign shall be six(6) feet above grade for detached signs.
- (vi) Special Conditions: No permit shall be required for signs that are no larger than thirty-two (32) square feet and which are not electrically illuminated. Construction signs shall only be permitted on premises visibly under construction. Upon sale or lease, the sign shall be immediately removed.
- (c) Special Event Signs.
  - (i) Size: Thirty-two (32) square feet maximum for a detached sign.
  - (ii) Number: One (1) per street frontage.
  - (iii) Setback and Spacing: The outer edge of the sign shall be no closer than zero (0) feet from official right-of-way and five (5) feet minimum from property under different ownership.
  - (iv) Illumination: Section 33-96, Illumination, of this Code, shall apply, except that revolving, rotating and otherwise moving signs shall be prohibited.
  - (v) Maximum Height: Maximum height above grade to top of sign shall be six (6) feet for detached signs, except for suspended fabric signs.
  - (vi) Special Conditions: Back lit awnings and balloon signs are not allowed. Special event signs require permits and shall be re-

moved within five (5) days after the special event or last election which candidate or issue was on ballot. Promoters, sponsors and candidates shall be responsible for compliance with the provisions of this section and shall remove signs promoting or endorsing their respective special events or candidacies when such signs are displayed or used in violation of this section. Additionally, any private owner who fails to remove an unlawful special events sign from his or her property shall be deemed in violation of this section.

- (vii) No sign shall exhibit thereon any lewd or lascivious matter.
- (2) Permanent Point of Sale Signs.
- (a) Permanent point of sale signs in the Edge Sub-District North of Snapper Creek Canal and west of US Highway 1: Detached, flat, awning, projecting, pylon signs are all allowed:
  - (i) Size: Maximum six (6) square feet except for churches, schools and universities which are permitted twenty-four (24) square feet. Cantilever projecting signs shall be mounted perpendicular to buildings.
  - (ii) Number: One (1) sign per tenant per street frontage.
  - (iii) Setback and spacing: The outer edge of the sign shall be no closer than zero (0) feet from right-of-way, and five (5) feet minimum from interior side property.
  - (iv) Illumination: Section 33-96, Illumination, of this Code, shall apply, except that revolving, rotating and otherwise moving signs shall be prohibited.

- (v) Maximum Height: Four (4) feet maximum height above grade to top of sign for detached signs; nine (9) feet minimum from bottom of sign to grade for awning and projecting signs; no limits for flat attached signs, or signs painted on the facade of a building.
- (vi) Special Conditions: No permit required for awnings following these regulations. Letters attached or painted to fabric shall be limited to the identification of the occupant and/or use of the property. Back-lit awnings and balloon signs are not allowed. Decorative neon may be used only inside windows. Building name and quotations carved in stone or stucco relief may occupy up to ten (10) percent of facade.
- (vii) No sign shall exhibit thereon any lewd or lascivious matter.
- (b) Permanent point of sale signs in the Core and Center Sub-Districts and in the Edge Sub-District north of Snapper Creek Canal and East of US Highway 1: Detached, flat, awning, projecting, pylon and marquee are all allowed:
  - (i) Size: Twenty-four (24) square feet maximum, except eight (8) square feet maximum for cantilever projecting signs, which shall be mounted perpendicular to buildings. Further, in the Edge Sub-District north of Snapper Creek Canal and East of U.S. Highway 1 flat wall signs are permitted at a maximum size no greater than seven and one half (7.5) percent of the wall area for the first fifteen (15) feet of building height and 1.5 per-

- cent for each foot of building height above the 15 feet measured to the bottom of the sign.
- (ii) Number: One (1) of each sign type, up to a total of three (3) per street frontage for each tenant.
- (iii) Building identification wall signs shall be permitted in the Core and Center Sub-Districts above the eighth floor. One (1) sign per frontage is permitted, each sign shall be a maximum of three hundred (300) square feet.
- (iv) Setbacks and Spacing: The outer edge of the sign shall be no closer than zero (0) feet from right-of-way and five (5) feet minimum from side or rear property line.
- (v) Illumination: Section 33-96, Illumination, of this Code, shall apply, except that revolving, rotating and otherwise moving signs shall be prohibited.
- (vi) Maximum Height: Four (4) feet maximum height above grade to top of sign for detached signs.
- (vii) Special Conditions: No permit required for awnings following these regulations. Letters attached or painted to fabric shall be limited to the identification of the occupant and/or use of the property. Back-lit awnings and balloons signs are not allowed. Decorative neon may be used only inside windows. Building name and quotations carved in stone or stucco relief may occupy up to ten (10) percent of a facade.
- (viii) No sign shall exhibit thereon any lewd or lascivious matter.

(4) Directional Signs. Directional signs, to direct traffic flow and locate entrances and exits shall be permitted on private property in connection with any permitted use provided they do not exceed three (3) square feet in area and do not exceed four (4) feet in height above grade; and providing they are shown and approved on site plans which indicate sign size, location, copy, etc. Logos, names and advertising are not permitted on such signs.

Maintenance: In addition to the general maintenance requirements for this section, the owner and/or the tenant of the sign shall be responsible for maintaining the landscaping and the signs concerned in good condition and appearance and the site free from trash or debris. Failure to do so shall constitute cause for cancellation of the permit and removal of the sign, if owner and/or tenant fails to correct same within ten (10) days after written notice of nonconformance.

Removal of dilapidated signs. The Director may cause to be removed any sign which shows neglect or become dilapidated or where the area around such sign is not maintained as provided herein after due notice has been given. The owner and/or tenant of the sign and/or the property shall be financially responsible for the removal of the sign.

# Sec. 33-284.63.1. Center DRI Sub-District Alternative Development Parameters.

Notwithstanding the provisions of sections 33-284.62 and 33-284.63, property within the Center DRI Sub-district may be developed in compliance with the following provisions. Development undertaken pursuant to the following provisions shall be subject exclusively to those provisions and not to any of the provision or requirements of sections 33-284.62 or 33-284.63. Development in the Center DRI Sub-district pursuant to sections 33-284.62 and 33-284.63 shall be subject exclusively to the provisions and requirements of those sections and not to the provision contained herein.

(A) Uses permitted. No land, body of water or structure in the Center DRI Sub-district shall be used or permitted to be used, and no structure shall be hereafter erected, constructed, arranged or intended to be used, occupied or maintained for any purpose, except for one or more of the following uses:

- (1) All uses permitted in the BU-2 District.
- (B) Setbacks, cubic content, yard area and lot size requirements. There shall be no setback requirements, minimum cubic content requirements, yard area requirements, or minimum lot size requirements.
- (C) Building height and number of stories. Building height shall be limited to eight (8) stories. A story shall be measured from floor to ceiling, with a minimum clearance of eight (8) feet and a maximum clearance of fourteen (14) feet. In the event that the clearance in any story is greater than fourteen (14) feet, it shall be counted as more than one story.
- (D) Floor area and lot coverage. The floor area ratio and lot coverage are not limited.
- (E) Landscaped open space. There shall be no landscaping requirement. However, if landscaping is provided, all plant material shall be in accordance with Chapter 18A of this Code.
- (F) Parking. No parking spaces are required, but if parking spaces are provided, such spaces shall comply with sections 33-122, 33-122.2, 33-122.3 and 33-131 of this Code.
- (G) Enclosed uses. All uses in the Center DRI Subdistrict shall be conducted within completely enclosed buildings, unless otherwise specifically provided herein. All materials and products shall be stored within the building or within an area completely enclosed with masonry walls not less than six (6) feet in height. Storage shall not be made above the height of the walls.
- (H) Plan review standards for the Center DRI Subdistrict.
  - (1) The purpose of the plan review is to encourage logic, imagination and variety in the design process and thereby insure the congruity of the proposed development and its compatibility with the surrounding area. The Department shall review plans for compliance with zoning regulations and for compliance with the site plan review criteria contained herein. The decision of the Department in rela-

tion to the plan review criteria may be appealed by the applicant to the Board of County Commissioners within thirty (30) days of the date the project was denied approval in writing. Such appeals shall be in accordance with Section 33-309 and shall be heard as expeditiously as possible. All final plans submitted for building permits shall be substantially in compliance with the plans approved under the plan review procedure herein established.

- (2) Exhibits which the applicant shall submit to the Department shall include, but not be limited to, the following:
  - (a) Schematic and fully dimensioned site plan including the following information:
    - (i) Lot lines and setbacks.
    - (ii) Location, shape, size, height and use of all existing and proposed buildings.
    - (iii) Location of decorative walls, entrance features and signage.
    - (iv) Location of landscaping, if any.
    - (v) Location of off-street parking, if any, and parking layout.
    - (vi) Location of outdoor lighting.
    - (vii) Location of loading facilities, waste collection areas and other service areas.
    - (viii) Location of internal drives, including ingress and egress drives to existing or proposed roadway and sidewalk systems.

- (ix) Location of pedestrian access points, including connections to existing or proposed bridges, roadways, or sidewalk areas.
- (b) Floor plans and elevations of all structures, including total gross square footage of each floor, the floor area ratio of each building and the total floor area ratio.
- (c) Figures indicating the following:
  - (i) Gross and net acreage.
  - (ii) Amount of building coverage at ground level in square feet.
  - (iii) Total trees and shrubs, if any, percentage of landscaping and type of plant material.
  - (iv) Location and number of parking spaces, if any, parking layout and total amount of paved areas in square feet.
  - (v) Such other design data as may be needed to evaluate the project.
- (3) The following checklist of criteria shall be utilized by the Department in the review process:
  - (a) Circulation. Pedestrian and auto circulation shall be separated insofar as is practicable, and all circulation systems shall adequately serve the needs of the development and be compatible and functional with circulation systems outside the development.
  - (b) Signs and outdoor lighting. All signs and outdoor lighting shall be designed as an integral part of and be harmonious with the

- building design and the surrounding landscape.
- (c) Service areas. Service areas shall be screened and so located as not to be visible from view.
- (d) Roof installations and facilities. All permitted installations housing mechanical equipment located on the roof shall be screened from ground view at the level at which the installations are located, and shall be designed as an integral part of and be harmonious with the building design.
- (e) Outdoor furniture and graphics. All outdoor furniture and graphics shall be designed as an integral part of the overall design of the project.
- (f) Art display. Permanent interior and exterior art displays, sculptures and water features should be encouraged in the overall design of the project.

## Sec. 33-284.64. Effective date.

This Article shall become effective (10) days after the date of enactment, unless vetoed, and if vetoed, shall become effective only upon an override by this Board. The Director is hereby authorized to make the necessary notations upon the maps and records of the Miami-Dade County Department of Planning and Zoning and to issue all permits in accordance with the terms and conditions of this article. It is provided however that this Article shall not apply to any project or structure located within the Downtown Kendall Urban Center District that has previously received site plan approval through a public hearing or administrative site plan review (ASPR), yet has not been constructed at the time of adoption of this Article. Said projects may be constructed in accordance with the terms of its approval within the ensuing five (5) years. Any structure that has been issued a valid building permit which is still valid five (5) years

from the date of adoption of this Article, may proceed to construction under the terms of that permit. For the purpose of calculating the five (5) year period under this section, the time shall be tolled during the pendency of administrative or judicial proceedings relating to development permits or development orders.

## Sec. 33-284.65. Nonconforming structures, uses and occupancies.

All legal nonconforming structures, uses, and occupancies in the Downtown Kendall Urban Center District that either: (1) were existing on December 16, 1999, or (2) on or before December 16, 1999, had received final site plan approval through a public hearing pursuant to Chapter 33 of this Code or through administrative site plan review (ASPR), by the date specified in Section 33-284.64, shall be exempt from the provisions of Section 33-35(c) of this Code upon compliance with the requirements of this section. Such nonconforming structures shall be allowed to be rebuilt and such uses and occupancies resumed in compliance with plans of record and certificates of use and occupancy approved as of December 16, 1999. Such structures, uses and occupancies shall be in compliance with all other provisions of this Code in effect at the time of the application to rebuild or resume occupancy. Building permits for rebuilding pursuant to this section shall be obtained within one year after the date of damage or destruction of the nonconforming structure. If the building permits necessary to rebuild a nonconforming structure have not been obtained within one year after the date of damage or destruction, or if such permits expire or are revoked after that year has concluded, the structure shall be subject to the provisions of 33-35(c).

