



Town Council Agenda Report

SUBJECT: District Boundaries

CONTACT PERSON/NUMBER: Gail Reinfeld (954) 797-1020

TITLE OF AGENDA ITEM: Review of District Boundaries

REPORT IN BRIEF: On October 20th, Council established a District Boundaries Review Committee and subsequently appointed ten members. The Town retained Florida Atlantic University to aid in the Committee's review of the Town's district boundaries and the University provided three options for the Committee's consideration. The Committee met and developed a fourth option.

Since 1990, population figures from the University of Florida had triggered a review of the Town's district boundaries with the Town Council approving district boundaries and final population figures from the Florida Atlantic University. Because of conflicting figures, the Committee has recommended that the same source be used to trigger a review as well as to accept population figures.

PREVIOUS ACTIONS: not applicable

CONCURRENCES: The District Boundaries Review Committee approved the fourth option with Mr. Truex dissenting (Ms. Apolinario, Ms. Ast and Mr. Gill were absent).

FISCAL IMPACT: not applicable

RECOMMENDATION(S): Motion to approve one of the four options presented. If Council chooses to retain its current boundaries (Option One), the motion would be to retain the current boundaries based upon reasonably equal areas of population and geographic size.

Attachment(s): Redistricting Options Recommendations Report



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Table 1: Minimum Criteria for Redistricting

1. Population within each district is within +/- 10 percent of the mean of the total population for four districts
2. District boundaries are contiguous and compact
3. District boundaries coincide as practically as possible with district geographic features
4. Proposed district boundaries respect existing district boundaries.
5. "Communities of interest" such as ethnic enclaves or homeowner associations are not divided intentionally.

Town of Davie: Redistricting Options

Part I: Purpose

In accordance with the Town of Davie Charter, the Town's district boundaries must be reviewed when the population changes by 10 percent or more, or when five years have passed since the previous review of district boundaries. At the approval of the Town Council, the Florida Atlantic University Geographic Information Systems Laboratory (hereafter, FAU GIS LAB), housed in the Department of Urban and Regional Planning, was contracted to evaluate the Town's existing districts and prepare options for redrawing the district boundaries.

Applying the criteria outlined in Table 1, the FAU GIS LAB developed four (4) district options. One of the three district options was modified and approved by the Town's District Review Committee (refer to District Option 4). The report provides the following: qualification profile of the FAU GIS LAB, the methodology used to generate district options, review of existing district boundaries and the district options developed.

Part II: Qualifications

The FAU GIS LAB, under the direction of Scott Burton, is a subsidiary of the Department of Urban and Regional Planning, College of Architecture, Urban and Public Affairs. Established in 1989, the FAU GIS LAB has been involved in many redistricting projects, most notably the Broward County School Board (1998), City of Pembroke Pines (1999), City of Hollywood and the Town of Davie (1994 and 1997).

Part III: Methodology

For this review of district boundaries, the FAU GIS LAB utilized Traffic Analysis Zone (TAZ) data collected by the Broward County Department of Planning and Environmental Protection. The data sets included population estimates for the population as of October 1998, as well as estimated occupied housing units, number of single family units, and number of multi-family dwelling units. The data set was determined to be the *best available* data due to the fact that population estimates generated by the U.S. Census Bureau does not calculate population at the geographic level (TAZs) which, for this project, is required to estimate population based upon geographic distribution of population. The University of Florida's Business of Bureau and Economic Research (BEER) does not collect population estimates at the TAZ level. However, BEER is a state repository for U.S. Census Bureau, generating population estimates at the municipality level only.

The data collected were then used to complete the following process:

1. Calculate existing population within each of the Town's four districts.
2. Determine whether current district boundaries provide for an evenly distributed population.
3. If not, redraw district boundaries and recalculate population distribution.
4. Evaluate each option created in accordance to the Redistricting Criteria (Table 1).
5. Generate maps depicting redistricting options.



**Table 2: Population Growth
for split TAZ (# 573)**

1. TAZ #573 (western portion) had 1395 dwelling units digitized from the orthophoto.
2. TAZ #573 had a 2% vacancy rate -
 $100 - 2 = .98$
3. Number of Occupied Dwelling Units =
 $.98 * 1395$
= 1325
4. Estimated household population =
 $1325 * 2.1$
= 2795 persons
5. TAZ population =
 $2795 = 6051^*$

*6051 is the total estimated population for TAZ #573.

**Table 3: Existing District
Boundaries**

District	Pop	% of Mean	Deviation
1	20,475	105.2	5.2
2	17,533	90.1	-9.9
3	20,246	104.0	4.0
4	19,581	100.6	0.6
Total	77,835	Mean	19,459

Part III: Methodology

While calculating the population growth for the Town of Davie, it was discovered that several TAZs had been previously split. To calculate the growth in these areas, the following steps were taken:

1. Determine the number of housing units in split TAZ. The task was completed by locating each dwelling unit that was found on digital orthophotos and digitizing the location as a point in ArcView. To determine the type of dwelling unit (single vs. multi-family), the location of the digitized points were compared to Broward County Tax maps and the Town of Davie subdivision plats.
2. Determine the number of occupied dwelling units. (To calculate the number of occupied dwelling units, we subtracted the FCTVSSF (% Vacant Single Family) from 100.)
3. Establish the number of occupied single-family dwelling units. (Multiply the occupancy rate times the number of counted dwelling units- Step 1 * Step 2).
4. Estimate household population in single-family dwelling units. (Multiply occupied dwelling units by 2.1- Census Bureau standard for estimating number of persons per unit).
5. Subtract estimated household population to from the total population estimated for designated TAZ.

This number was subsequently added to the district boundary totals.

For an example of the above procedure, refer to Table 2. Note when estimating the number of persons using the suggested formula by the County, the multiplier was 1.5 to 2 times greater than that of the Census Bureau's multiplier, which may or may not over generalize the actual percent of population growth. By using the standard of 2.1, we attempted to minimize any possible gross over-estimation of the population for each of the districts.

IV. Review of Existing District Boundaries

According to the Town of Davie, 1998 population estimate, as reported by BEBR, was 66,999. The Town of Davie compared the 1998 population estimate to 1997 population estimates reported in the Town of Davie Redistricting Options, 1997 Report (60,814). Based upon the percent change between 1997 and 1998, the population of the Town increased by 10.2 percent. This growth exceeded the 10.0 percent threshold, prompting the Town of Davie to contract services for review of district boundaries.

At the December 6, 1999 District Review Committee meeting, the Committee members noted that the population estimates used to determine percent change were derived from two different sources: BEBR and the County. Because of this discrepancy in data sources it was recommended by the District Review Committee that an agreement is needed for a single source population estimates for future endeavors that the Town might encounter, particularly since the County and BEBR's population estimates vary significantly.

The population estimates depicted in Table 3 are derived from the Broward County Department of Planning and Environmental Protection. The population estimates are referred to as ZDATA1 and used for forecasting population for transportation and demographic purposes.

According to the County's 1998 population estimates, the Town of Davie has approximately 77,835 persons residing within the corporate boundaries. Comparing the County's 1998 population estimate to the County's 1997 population estimates, the percent change of growth exceeded 10 percent.

Although as a whole the population increased by more than 10 percent, examining the population counts within in each district, the population counts do not deviate from the overall mean (19,459) by more than 10 points. Ideally, it is preferred to have each district population roughly 19,459 persons, thus distributing the population evenly among the districts. As depicted in Table 3, the largest deviation is in District 2 (9.9 points below the mean). Because of this, the existing districts were also an option in this review. The purpose of this review was to generate district options that would best fit the criteria.



Department of
Urban & Regional Planning

OPTION 1:
"NO CHANGE"





**TOWN OF DAVIE
STATUS REPORT – OPTION ONE
“NO CHANGE”**

**MINIMUM
CRITERIA**

1. Population within each district is within +/- 10 percent of the mean of the total population for four districts.
2. District boundaries are contiguous and compact.
3. District boundaries coincide as practically as possible with district geographic features.
4. Proposed district boundaries respect existing district boundaries.
5. "Communities of interest" such as ethnic enclaves or homeowner associations are not divided intentionally.

**NO CHANGE
OPTION 1**

District	Pop	% of Mea n	Dev
1	20,475	105.2	5.2
2	17,533	90.1	-9.9
3	20,246	104.0	4.0
4	19,581	100.6	0.6
MEAN	19,459		

Option 1: No Change

Criteria 1.

Ideally, each should have a population of 19,459, the mean of the Town's estimated 1998 total population (77,835) for four districts.

Currently, all four districts fall within the range of acceptability. That is, each district's population deviates less than 10 points from the Town's mean population. However, District 2 barely meets these criteria (-9.9 points). Nonetheless, Option 1 is to keep intact the existing district boundaries.

Criteria 2.

Districts are contiguous and compact.

Criteria 3.

District boundaries coincide as practically as possible with distinct geographic boundaries, streets.

Criteria 4.

Not applicable (N/A)

Criteria 5.

Using the October 1999 Registered Voters Demographics from Broward County" Supervisor of Elections Office, the ethnic enclaves are preserved. Refer to Criteria 5 Map.

Boundary Descriptions for Option 1: “No Change”

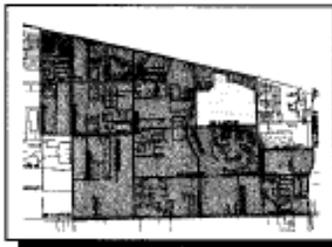


Option 1: District 1

District 1 begins at the I-595/ SR 84 Corridor at the point of intersection with University Drive following corridor east to its intersection with SR 7 (US 441) including all points eastward of the Town's corporate boundaries. From State Road 7, starting the intersection of SR 7 (US 441) and the on-off ramps of I-595 the boundary continues south towards its intersection with the Corporate Limits and includes all points south and west to its intersection with Davie Road. The boundary continues northward along Davie Road to Nova Road thence westward until University Drive. The boundary proceeds northward along the centerline for University Drive to the point of beginning.

Option 1: District 2

District 2 begins at I-595 and Pine Island Road intersection and follows the I-595/SR 84 corridor eastward towards its intersection with University Drive, thence southward to Nova Drive towards its intersection with Davie Road. Starting at the center point of Nova Dr and Davie Rd, the boundary travels southward on Davie Rd to its point of intersection with the City's corporate boundary, including all points south and west until the corporate boundary intersects Griffin Road. Continuing eastward on Griffin Road to its point of intersection with University Drive, thence northward on University Drive until its intersection with SW 30th Street. The boundary continues westward on SW 30th Street until its point of intersection with Pine Island Road travelling north to the point of beginning.

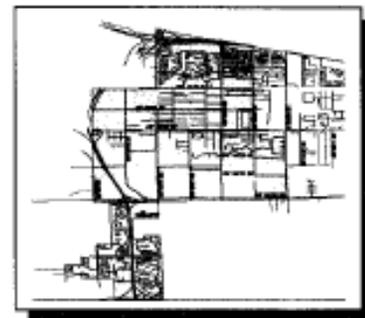


Option 1: District 3

District 3 begins at the intersection of I-595/SR 84 corridor and SW 130th Avenue following the centerline easterly towards I-595's intersection with Pine Island Road, thence southward along Pine Island Road to its intersection with SW 30th Street. The boundary continues eastward on SW 30th Street to its point of intersection with University Drive, thence southward along the centerline of University Drive to its point of intersection with Griffin Road, thence westward along Griffin Road's centerline to its point of intersection with Flamingo Road. The boundary continues northward along the centerline of Flamingo Road to its intersection with SW 130th Street, thence northward to the point of beginning.

Option 1: District 4

District 4 begins at the Town's western most corporate Boundary and the I-595/SR 84 corridor and proceeds eastward to SW 130th Avenue, thence southward along SW 130th Avenue's centerline until the point of intersection with SW 26th Street. The boundary then proceeds eastward along the centerline of SW 26th Street to Flamingo Road, thence south along Flamingo Road to its intersection with Griffin Road (the southern most boundary of the Town's Corporate Limits) and including all points south and west of this point.





OPTION 2:
"LEAST CHANGE"





MINIMUM CRITERIA

1. Population within each district is within +/- 10 percent of the mean of the total population for four districts.
2. District boundaries are contiguous and compact.
3. District boundaries coincide as practically as possible with district geographic features.
4. Proposed district boundaries respect existing district boundaries.
5. "Communities of interest" such as ethnic enclaves or homeowner associations are not divided intentionally.

LEAST CHANGE OPTION 2

District	Pop	% of Mean	Dev
1	19,140	98.4	-1.6
2	18,868	97.0	-3.0
3	20,246	104.0	4.0
4	19,581	100.6	0.6

TOWN OF DAVIE STATUS REPORT - OPTION TWO "LEAST CHANGE"

Option 2: Least Change

In an effort to improve the population distribution more evenly, the FAU GIS LAB designed a "least change" option to improve the distribution of populations within each district while making minimal geographic changes to the boundaries.

Criteria 1.

As compared to Option 1, the population deviations from the Town's population mean for District 1 and District 2 improved. District 1 decreased from 5.2 points to 1.6 points from the Town's population mean, while the population deviation for District 2 decreased from 9.9 to 3.0 points from the Town's population mean.

Criteria 2.

Districts are contiguous and compact.

Specific geographic boundaries were *removed* from District 1 and *assigned* to District 2.

- North boundary - I-595
- South boundary - Nova Drive
- East boundary - University Drive
- West boundary - College Avenue

Criteria 3.

District boundaries coincide as practically as possible with distinct geographic boundaries, streets.

Criteria 4.

This option provides the least changes to geographic boundaries of District 1 and District 2, while distributing the population in the districts more evenly.

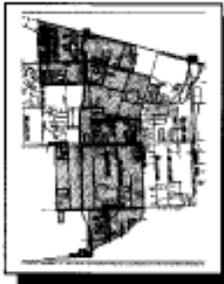
Criteria 5.

Using the October 1999 Registered Voters Demographics from Broward County Supervisor of Elections Office, the ethnic enclaves are intact. Refer to Criteria 5 Map.

Boundary Descriptions for Option 2: “Least Change”

Option 2: District 1

District 1 begins starting at the point of intersection with College Rd. and I-595/SR84 corridor following the centerline east to its intersection with SR 7 (US 441) and points east and south along Corporate City Boundaries to its intersection with Davie Road. Following the centerline of Davie Rd northward to its intersection with Nova Dr thus travelling westward to its intersection with College Ave. northward to the beginning.

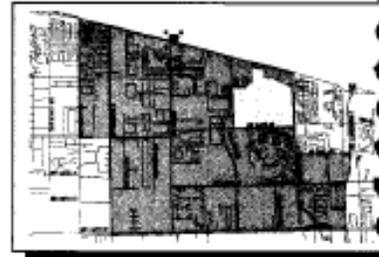


Option 2: District 2

District 2 begins at the intersection of I-595/SR 84 and Pine Island Rd. Travelling eastward along the centerline of the I-595 corridor to the intersection with College Ave thus south on College Ave to its intersection with Nova Drive. The boundary continues along Nova Drive's centerline east to the point of intersection of Nova Drive and Davie Road. Travelling south along the centerline of Davie Road, the boundary continues to the City's corporate limits including all points south and west on this boundary, until the point of intersection with the Pine Island Road, thus north to its intersection with Griffin Road east to University Drive. Continuing north along the centerline of University Drive, the boundary intersects with SW 30th Avenue, thence west to the point of intersection with Pine Island Road, thence north to the point of beginning.

Option 2: District 3

District 3 begins at the intersection of I-595/SR 84 and SW 130th Avenue, thus eastward to the I-595/SR 84 intersection with Pine Island Road. The boundary continues south on Pine Island Road to its point of intersection with SW 30th Avenue thus eastward towards University Drive. At the point of intersection with University Drive and SW 30th Avenue the boundary continues south towards the intersection with Griffin Road, thence westward along the centerline of Griffin Road to its point of intersection with Flamingo Road. Following Flamingo Road northward, the boundary proceeds to the intersection with SW 26th Avenue and goes westward along the centerline of SW 26th Street to SW 130th Avenue northward to the point of beginning.



Option 2: District 4

District 4 begins at the Town's western most corporate Boundary and the I-595/SR 84 corridor and proceeds eastward to SW 130th Avenue, thence southward along SW 130th Avenue's centerline until the point of intersection with SW 26th Street. The boundary then proceeds eastward along the centerline of SW 26th Street to Flamingo Road, thence south along Flamingo Road to its intersection with Griffin Road (the southern most boundary of the Town's Corporate Limits) and including all points south and west of this point.



**MINIMUM
CRITERIA**

1. Population within each district is within +/- 10 percent of the mean of the total population for four districts.
2. District boundaries are contiguous and compact.
3. District boundaries coincide as practically as possible with district geographic features.
4. Proposed district boundaries respect existing district boundaries.
5. "Communities of interest" such as ethnic enclaves or homeowner associations are not divided intentionally.

**MINIMUM CHANGE
OPTION 3**

District	Pop	% of Mean	Dev
1	19,140	98.4	-1.6
2	19,504	100.2	0.2
3	19,610	100.8	0.8
4	19,581	100.6	0.6
MEAN	19,459		

**TOWN OF DAVIE
STATUS REPORT – OPTION THREE
“MINIMUM CHANGE”**

Option 3: Minimum Change

To further improve the population distribution more evenly, the FAU GIS LAB adjusted a few more geographic areas than compared to Option 2. This option is referred to as the "minimal" change option.

Criteria 1.

As compared to Options 1-2, the population deviations from the Town's population mean for Districts 1-3 improved, while the population deviation for District 4 remained in tact.

- District 1 *decreased* from 5.2 points to 1.6 points from the Town's population mean.
- District 2 population deviation *decreased* from 9.9 to 0.2 points from the Town's population mean.
- District 3 population deviation *decreased* from 4.0 to 0.8 points from the Town's population mean.

Criteria 2.

Districts are contiguous and compact.

Specific geographic boundaries were *removed* from District 1 and *assigned* to District 2.

- North boundary – I-595
- South boundary – NOVA DRIVE
- East boundary – COLLEGE AVENUE
- West boundary – UNIVERSITY DRIVE

Specific geographic boundaries were *removed* from District 3 and *assigned* to District 2.

- North boundary – SW 30TH ST
- South boundary – SW 36TH ST
- East boundary – UNIVERSITY DRIVE
- West boundary – S PINE ISLAND DR

Criteria 3.

District boundaries coincide as practically as possible with distinct geographic boundaries, streets.

Criteria 4.

This options provides a "minimum" about of changes to geographic boundaries of District 1 and District 2, while distributing the population in the districts more evenly.

Criteria 5.

Using the October 1999 Registered Voters Demographics from Broward County's Supervisor of Elections Office, the ethnic enclaves are intact. Refer to Criteria 5 Map.

Due to the growth in the Town, this option reflects a "positive deviation of population" in all the districts compared to the Town's mean population. Additionally, District 2 boundaries are expanded in a "east-west" direction, particularly area near I-595.

Changes are made to District 1 – decrease in geographic area/population:

- North boundary –I595
- South boundary –NOVA DRIVE
- East boundary – COLLEGE AVE
- West boundary – UNIVERSITY DRIVE

The boundaries outlined above are assigned to District 2.

Changes made to District 3 – decrease in geographic area/population

- North boundary –I-595

Boundary Descriptions for Option 3: "Minimal Change"

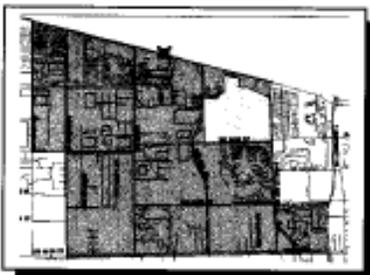


Option 3: District 1

District 1 begins starting at the point of intersection with College Rd. and I-595/SR84 corridor following the centerline east to its intersection with SR 7 (US 441) and points east and south along Corporate City Boundaries to its intersection with Davie Road. Following the centerline of Davie Rd northward to its intersection with Nova Dr thus travelling westward to its intersection with College Ave, northward to the beginning.

Option 3: District 2

District 2 begins at the intersection of I-595/SR 84 corridor and proceeds eastward to its point of intersection with College Avenue, thence southward along the centerline of College Avenue to its intersection with Nova Drive. The boundary continues eastward along centerline of Nova Drive to its point of intersection with Davie Road, thence south along Davie Road to its intersection with the Town's corporate boundary including all points south and west until the point of intersection with Stirling Road and Griffin Road. The boundary continues east along the centerline of Griffin Drive to its point of intersection with University Drive. Continuing northward along University Drive the boundary then proceeds westward along the centerline of SW 36th Street to its point of intersection with Pine Island Road. The boundary continues northward along Pine Island Road to the point of beginning.



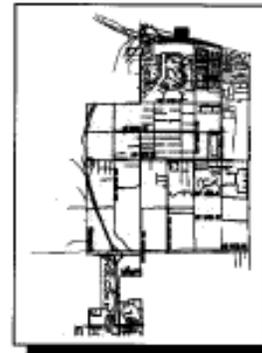
Option 3: District 3

District 3 begins at the intersection of I-595/SR 84 corridor and SW 130th Avenue, thence eastward to I-595/SR 84's intersection with Pine Island Road. The boundary continues south along the centerline of Pine Island Road to the point of intersection with Griffin Road, thence westward along Griffin Road to its intersection with Flamingo Road, thence northward to its point of intersection with SW 26th Street. The boundary then follows SW 26th Street west to the point of

intersection of SW 26th Street and SW 130th Avenue, thence northward to the point of beginning.

Option 3: District 4

District 4 begins at the Town's western most corporate Boundary and the I-595/SR 84 corridor and proceeds eastward to SW 130th Avenue, thence southward along SW 130th Avenue's centerline until the point of intersection with SW 26th Street. The boundary then proceeds eastward along the centerline of SW 26th Street to Flamingo Road, thence south along Flamingo Road to its intersection with Griffin Road (the southern most boundary of the Town's Corporate Limits) and including all points south and west of this point.





OPTION 4:
"COMMITTEE OPTION"





MINIMUM CRITERIA

1. Population within each district is within +/- 10 percent of the mean of the total population for four districts.
2. District boundaries are contiguous and compact.
3. District boundaries coincide as practically as possible with district geographic features.
4. Proposed district boundaries respect existing district boundaries.
5. "Communities of interest" such as ethnic enclaves or homeowner associations are not divided intentionally.

MINIMUM CHANGE OPTION 3

District	Pop	% of Mean	Dev
1	19,140	98.4	-1.6
2	19,504	100.2	0.2
3	19,610	100.8	0.8
4	19,581	100.6	0.6
MEAN	19,459		

TOWN OF DAVIE STATUS REPORT – OPTION FOUR “COMMITTEE OPTION”

Option 4: Committee Option

To further improve the population distribution more evenly, the FAU GIS LAB adjusted a few more geographic areas than compared to Option 3. This option is referred to as the “committee” option.

Criteria 1.

As compared to Options 1-2, the population deviations from the Town’s population mean for Districts 1-3 improved, while the population deviation for District 4 remained in tact.

- District 1 *decreased* from 5.2 points to 1.6 points from the Town’s population mean.
- District 2 population deviation *decreased* from 9.9 to 0.2 points from the Town’s population mean.
- District 3 population deviation *decreased* from 4.0 to 0.8 points from the Town’s population mean.

Criteria 2.

Districts are contiguous and compact.

Specific geographic boundaries were *removed* from District 1 and *assigned* to District 2.

- North boundary – I-595
- South boundary – NOVA DRIVE
- East boundary – DAVIE ROAD
- West boundary – UNIVERSITY DRIVE

Specific geographic boundaries were *removed* from District 3 and *assigned* to District 2.

- North boundary – SW 30TH ST
- South boundary – SW 36TH ST
- East boundary – UNIVERSITY DRIVE
- West boundary – S PINE ISLAND DR

Criteria 3.

District boundaries coincide as practically as possible with distinct geographic boundaries, streets.

Criteria 4.

This options provides a “minimum” about of changes to geographic boundaries of District 1 and District 2, while distributing the population in the districts more evenly.

Criteria 5.

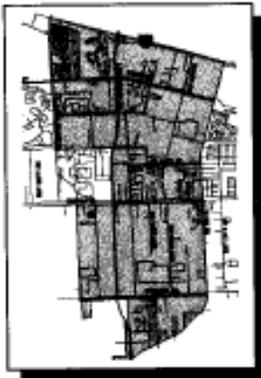
Using the October 1999 Registered Voters Demographics from Broward County” Supervisor of Elections Office, the ethnic enclaves are intact. Refer to Criteria 5 Map.

The review committee recommended that Option 3 be altered to give District 1 a straight-line boundary on the west. Therefore, the new boundary between District 1 and 2 is Davie Road.

Boundary Descriptions for Option 4: "Committee Option" (12/07/99)

Option 4: District 1

District 1 begins at the intersection of I-595/SR 84 and Davie Road intersection, thence eastward to the Town's corporate boundary to include all points east and south to its intersection with Davie Road. The boundary continues northward along Davie Road to the point of beginning.

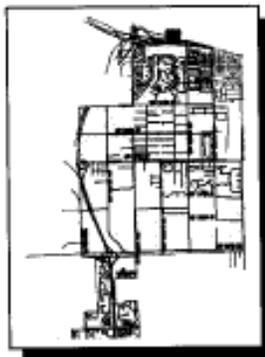
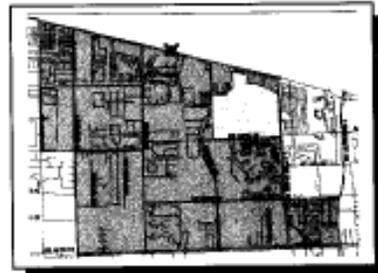


Option 4: District 2

District 2 begins at the point of intersection of I-595/SR 84 corridor and Pine Island Road, following the centerline of the interstate eastward to its intersection with Davie Road. The boundary continues south along the centerline of Davie Road to its point of intersection with the Town's corporate boundary to include all points south and west until the point of intersection with Stirling Road and Griffin Road. The boundary continues east along the centerline of Griffin Drive to its point of intersection with University Drive. Continuing northward along University Drive the boundary then proceeds westward along the centerline of SW 36th Street to its point of intersection with Pine Island Road. The boundary continues northward along Pine Island Road to the point of beginning.

Option 4: District 3

District 3 begins at the intersection of I-595/SR 84 corridor and SW 130th Avenue, thence eastward to I-595/SR 84's intersection with Pine Island Road. The boundary continues south along the centerline of Pine Island Road to the point of intersection with Griffin Road, thence westward along Griffin Road to its intersection with Flamingo Road, thence northward to its point of intersection with SW 26th Street. The boundary then follows SW 26th Street west to the point of intersection of SW 26th Street and SW 130th Avenue, thence northward to the point of beginning.



Option 4: District 4

District 4 begins at the Town's western most corporate Boundary and the I-595/SR 84 corridor and proceeds eastward to SW 130th Avenue, thence southward along SW 130th Avenue's centerline until the point of intersection with SW 26th Street. The boundary then proceeds eastward along the centerline of SW 26th Street to Flamingo Road, thence south along Flamingo Road to its intersection with Griffin Road (the southern most boundary of the Town's Corporate Limits) and including all points south and west of this point.