Treasure Coast 2040 Land Use Forecast Updates

Mike Brown

Transportation Planning Services Inc.

Need For A Land Use Model

- MPO is required to prepare and regularly update a Long Range Transportation Plan.

- A Land Use Model is needed to help determine the future locations of population and employment to feed into the Travel Demand Model.

New Factors Affecting Growth

- Different Distribution of Growth
- Less Growth to Vacant Land
- More Redevelopment
- More Infill Development
- Higher Density Development
  - Less Single Family and more Multi-Family
- More Diversity of Land Uses
  - More mixed use development
- More Growth to Existing Facilities

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ABM Data Zonal Compared to Previous Data

- Residential Data by TAZ
  - Similar to previous Life Style model
  - Add Income by household
  - Add age, race and gender
  - Add group quarters data
  - No seasonal units or vacant units
  - Add mobile homes

- Employment by MAZ
  - 16 Employment Categories
  - School enrollment different

Population Growth to be Allocated

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	LRTP 2035	BEBR 2040	Difference	Percent
Indian River	208,993	193,700	-15,293	-7.32%
St. Lucie	469,600	454,200	-15,400	-3.28%
Martin	179,000	183,500	4,500	2.51%
	2010	**2040**	**Growth**	**Percent**
Indian River	136,239	193,700	57,461	42.18%
St. Lucie	275,598	454,200	178,602	64.81%
Martin	142,388	183,500	41,112	28.87%

2010 Housing Mix

	Indian River	St. Lucie	Martin
Single Family	44,514	92,399	38,833
Multi-Family	11,162	12,459	18,502
Mobile Home	4,500	3,982	6,757
Single Family	74.00%	84.90%	60.60%
Multi-Family	18.50%	11.40%	28.90%
Mobile Home	7.50%	3.70%	10.50%

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2010 Demographic Ratios

	Indian River	St. Lucie	Martin
PRE SCHOOL AGE	4.80%	6.00%	4.30%
SCHOOL AGE	14.10%	16.60%	13.60%
WORKING AGE	53.90%	57.60%	54.40%
RETIREES	27.30%	19.80%	27.70%
HHSIZE_1	29.80%	24.20%	31.00%
HHSIZE_2	41.70%	38.30%	41.80%
HHSIZE_3	12.10%	15.30%	11.70%
HHSIZE_4UP	16.50%	22.20%	15.50%
No Children	76.40%	69.40%	77.80%
Children	23.60%	30.60%	22.20%
HISPANIC	11.20%	16.70%	12.20%
WHITE	77.70%	61.20%	81.00%
RACEOTHER	11.10%	22.10%	9.60%
MALE	48.10%	48.70%	48.80%
FEMALE	51.90%	51.30%	51.20%

Projected Age Distribution

Indian River County	2010	2040	2010 Mix	2040 Mix	Change
AGE0TO4	6,508	8,793	4.71%	4.54%	-0.18%
AGE5TO14	14,487	18,324	10.50%	9.46%	-1.04%
AGE15TO17	4,957	5,704	3.59%	2.94%	-0.65%
AGE18TO24	9,092	11,712	6.59%	6.05%	-0.54%
AGE25_34	12,455	17,021	9.02%	8.79%	-0.24%
AGE35_49	23,383	31,419	16.94%	16.22%	-0.72%
AGE50_64	29,642	32,682	21.48%	16.87%	-4.60%
AGE65_79	25,571	44,280	18.53%	22.86%	4.33%
AGE80PLUS	11,933	23,764	8.65%	12.27%	3.62%
Total Population	138,028	193,699			
Pre-School	6,508	8,793	4.71%	4.54%	-0.18%
School Age	19,444	24,028	14.09%	12.40%	-1.68%
Working Age	74,572	92,834	54.03%	47.93%	-6.10%
Retirement Age	37,504	68,044	27.17%	35.13%	7.96%

Employment Control Totals

	2010	2040	Growth	Change	2010	2040	Change
Total Population	142,385	183,500	41,115	28.9%			
Total Employment	85,724	110,478	24,754	28.9%	0.6021	0.6021	
Industrial	15,787	20,868	5,081	32.2%	18.43%	18.89%	0.46%
Commercial	25,964	33,733	7,769	29.9%	30.30%	30.54%	0.23%
Service	43,925	55,872	11,947	27.2%	51.27%	50.58%	-0.69%
Agriculture	671	849	178	26.5%	0.78%	0.77%	-0.01%
Utilities	140	179	39	28.0%	0.16%	0.16%	0.00%
Construction	9,693	13,063	3,370	34.8%	11.31%	11.82%	0.51%
Manufacturing	4,023	5,156	1,133	28.2%	4.70%	4.67%	-0.03%
Wholesale	3,699	4,823	1,124	30.4%	4.32%	4.37%	0.05%
Retail	12,350	15,856	3,506	28.4%	14.41%	14.35%	-0.06%
Transportation	1,260	1,621	361	28.7%	1.47%	1.47%	0.00%
Professional	17,281	21,847	4,566	26.4%	20.17%	19.78%	-0.40%
Amusement	3,622	4,716	1,094	30.2%	4.23%	4.27%	0.04%
Education Emp .	3,370	4,349	979	29.1%	3.93%	3.94%	0.00%
College Emp.	879	1,134	255	29.0%	1.03%	1.03%	0.00%
Health	10,442	13,734	3,292	31.5%	12.19%	12.43%	0.24%
Personal	7,739	9,712	1,973	25.5%	9.03%	8.79%	-0.24%
Hotel	387	500	113	29.2%	0.45%	0.45%	0.00%
Restaurants	6,293	8,339	2,046	32.5%	7.35%	7.55%	0.20%
Public Admin	3,827	4,596	769	20.1%	4.47%	4.16%	-0.31%
Sum Employees	85,676	110,474	24,798	28.9%	100.00%	100.00%	

Problems with Using 2010 Employment & Population Ratio

- 2010 was the height of the recession and just after the real estate bubble burst
  - Residential Foreclosures
  - Business Closings
  - Employees Layoffs and Downsizing
- A lot of excess capacity available in 2010
  - Vacant Structures
  - More Growth to Existing Facilities
  - Existing Occupied and Under Utilized Facilities
    - Vacant Space (cubicles etc.) that can absorb new employees

2010 Excess Capacity

Vacancy and Occupancy Status, Summary, 2010 Census					
County	**Total Units**	**Occupied**	**Seasonal**	**Vacant**	**Vacancy Rate (%)**
Indian River	76,346	60,176	7,330	8,840	**11.58%**
Martin	78,131	63,899	7,475	6,757	**8.65%**
St. Lucie	137,029	108,523	12,486	16,020	**11.69%**

- Commercial Space Vacant
- Commercial Space Under Utilized

Future 2040 Projections

Land Use Allocation Process

- **Allocation Model Using <u>Control Totals</u>**
- **Approved Development**
- **Existing Facilities**
  - **Vacancy Rate**
  - **Existing Under Utilized Facilities**
- **Vacant Land**
  - **Vacant Buildable Land**
  - **Under Utilized Parcels**
  - **Redevelopment**

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2010-2014 Growth
- Single Family
- Multi-Family
- Industrial
- Commercial
- Service
- TAZs

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Approved Projects
- Residential
- Commercial
- Mixed Use
- TAZs

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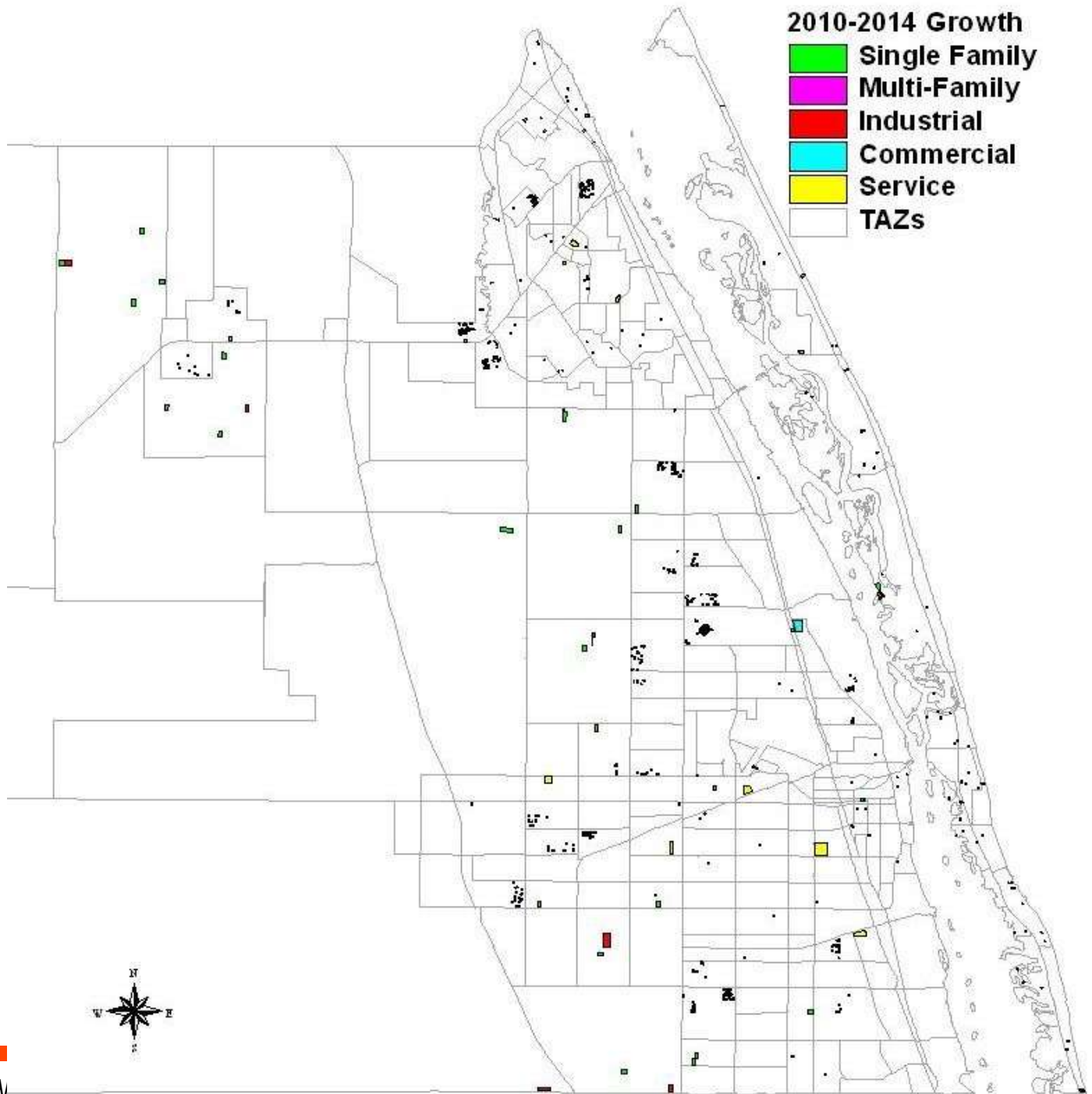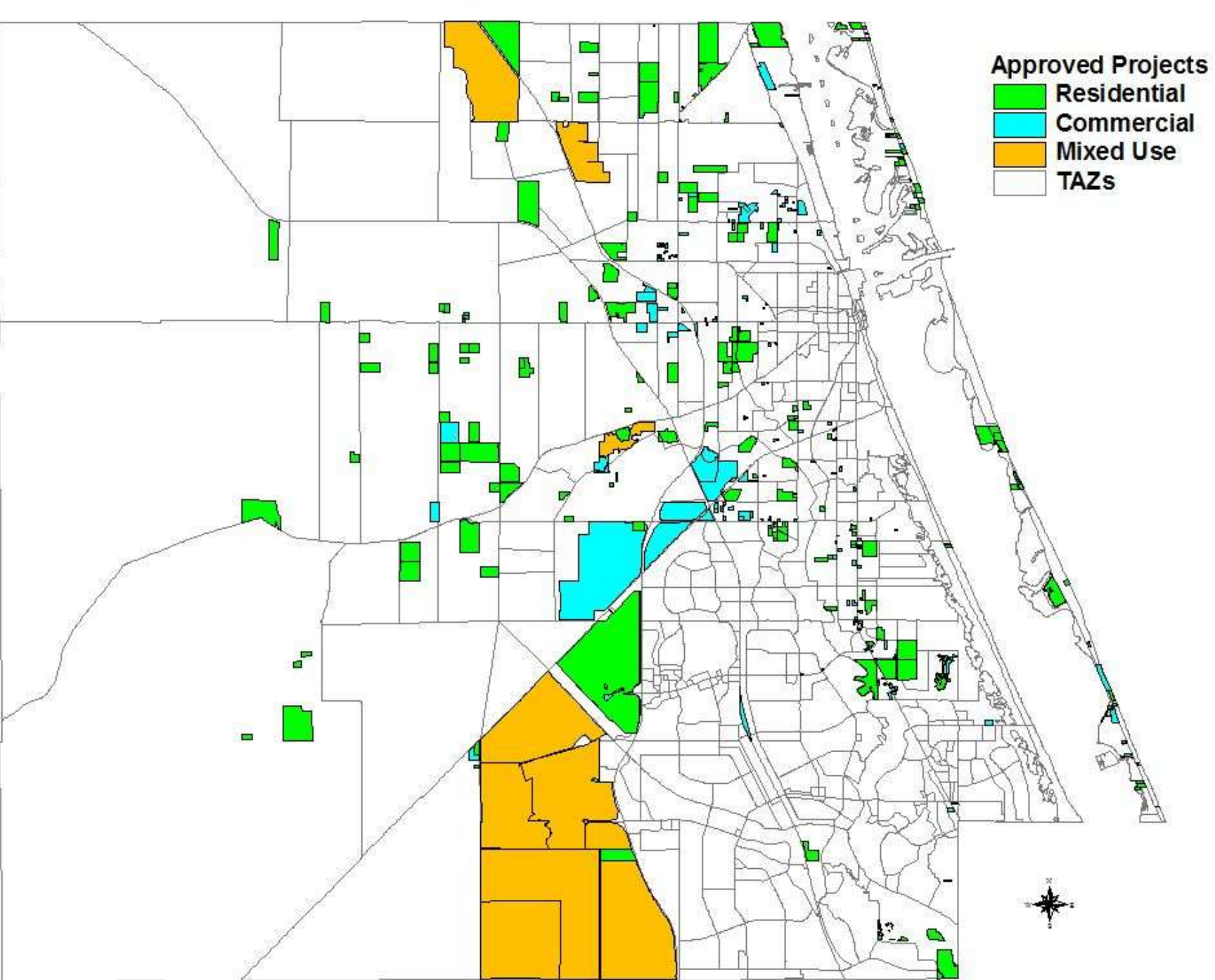
Vacant Parcel Data

- Convert Property Appraiser file to ULAM format
- Appended Zoning & Future Land Use
  - County
  - Cities
- Appended TAZs to Parcel Records
- Filter Wetlands & Conservation Areas
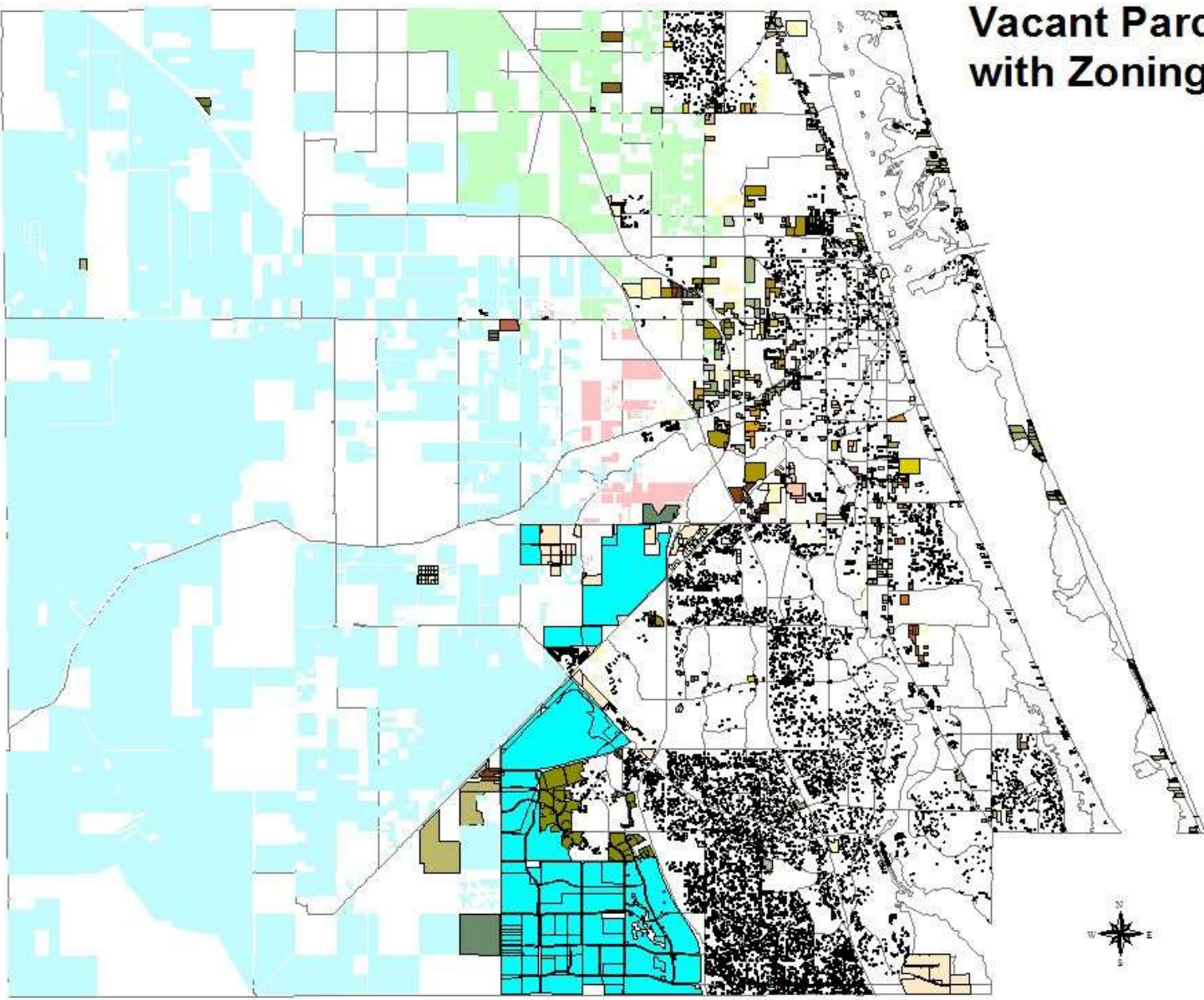- Identify Vacant Buildable Parcels and Net Buildable acres

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Filtering Process To Generate ULAM Vacant Land File

All Parcels

Vacant Parcels

Physical Constraints
Remove Parcels too Small
Slope Limitations

Environmental Constraints
Wetlands, Habitat etc.

Policy Constraints
Ag Land Conversion
Urban Services
Congestion Management

Zoning / Future Land Use

Traffic Zone

Vacant Buildable Land
By TAZ By Land Use

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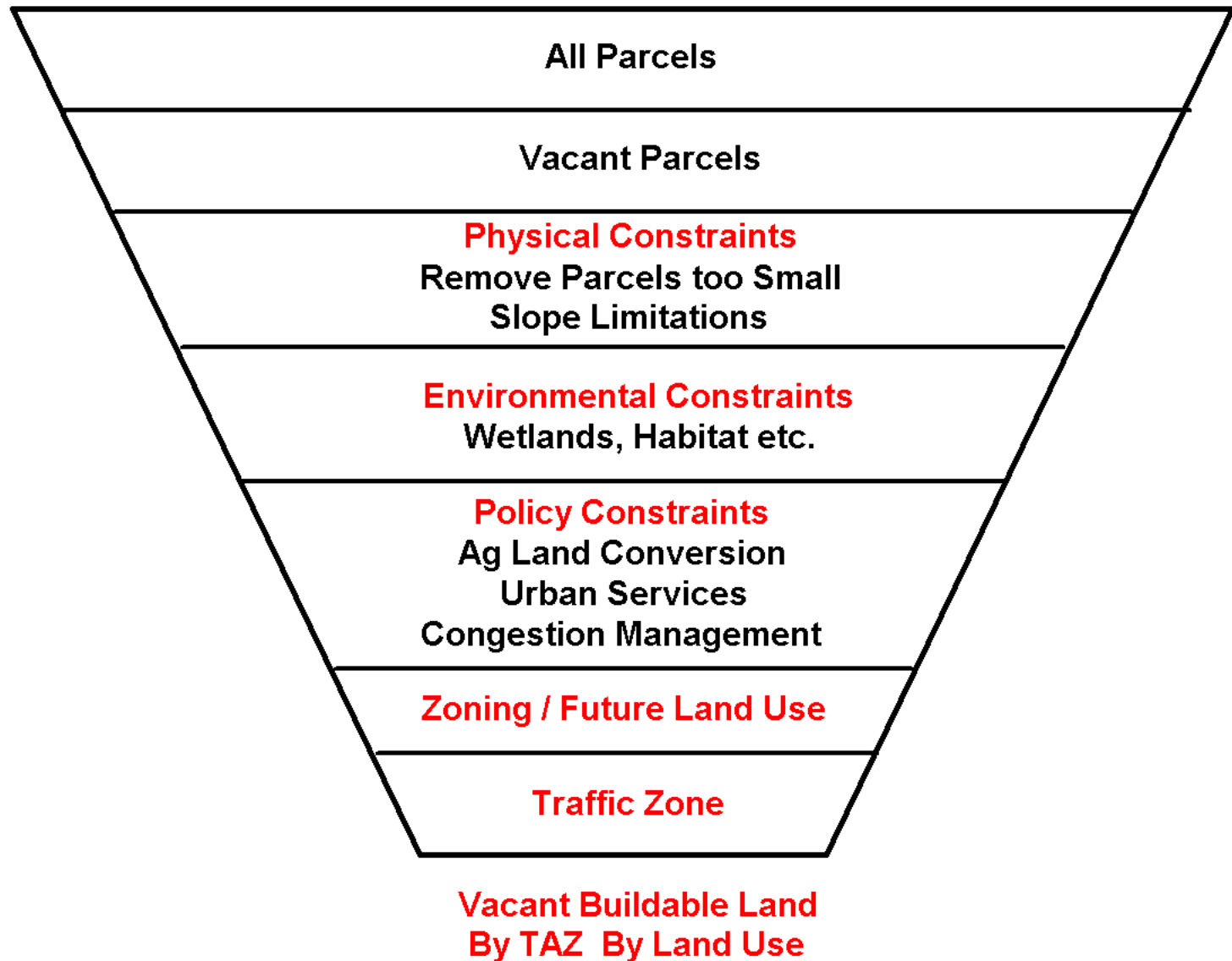
Vacant Parcels with Zoning

Vacant Parcels
- **Single Family**
- **Multi-Family**
- **Hotel**
- **Industrial**
- **Commercial**
- **Service**
- **TAZs**

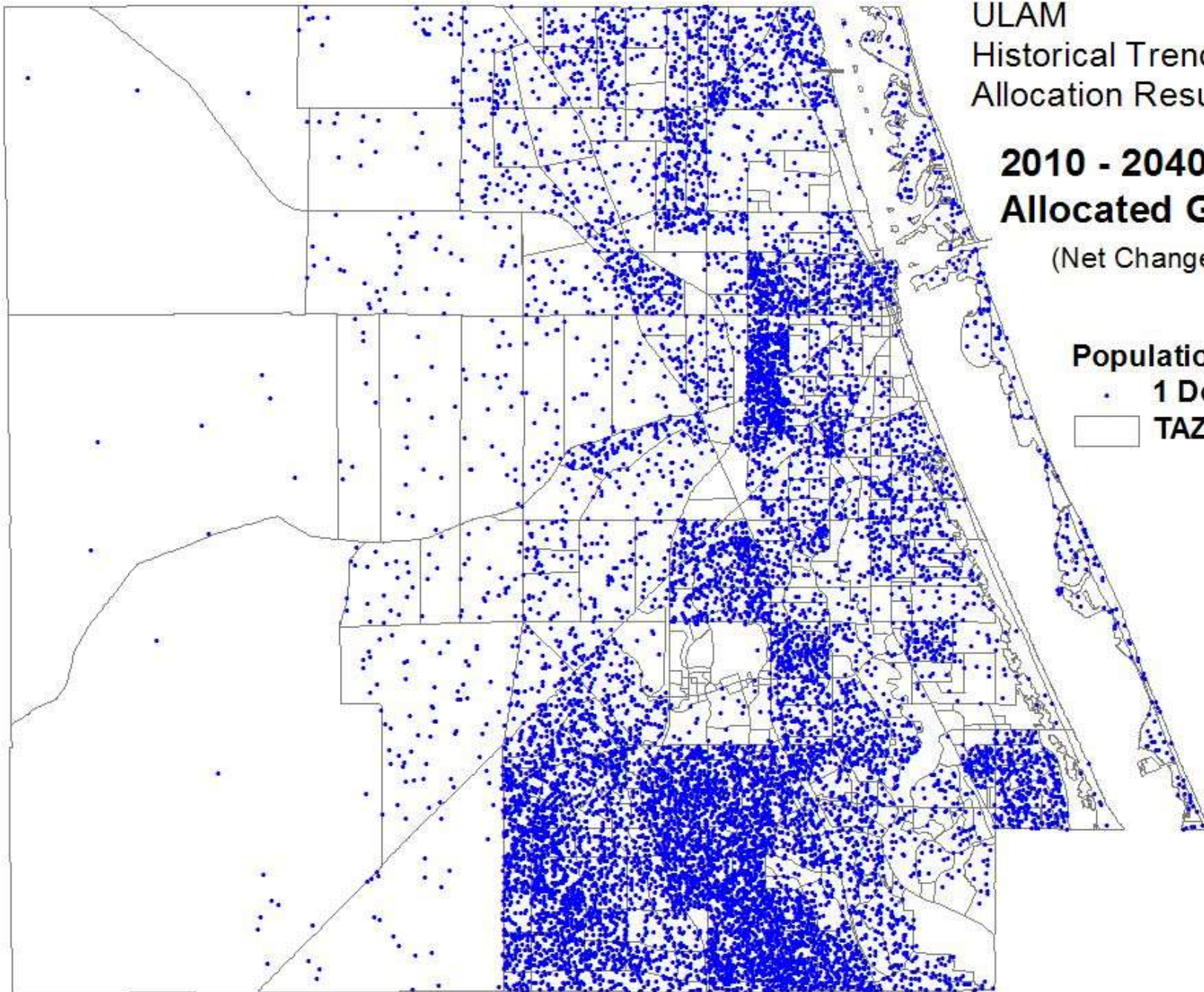# ULAM Development Capacity Process
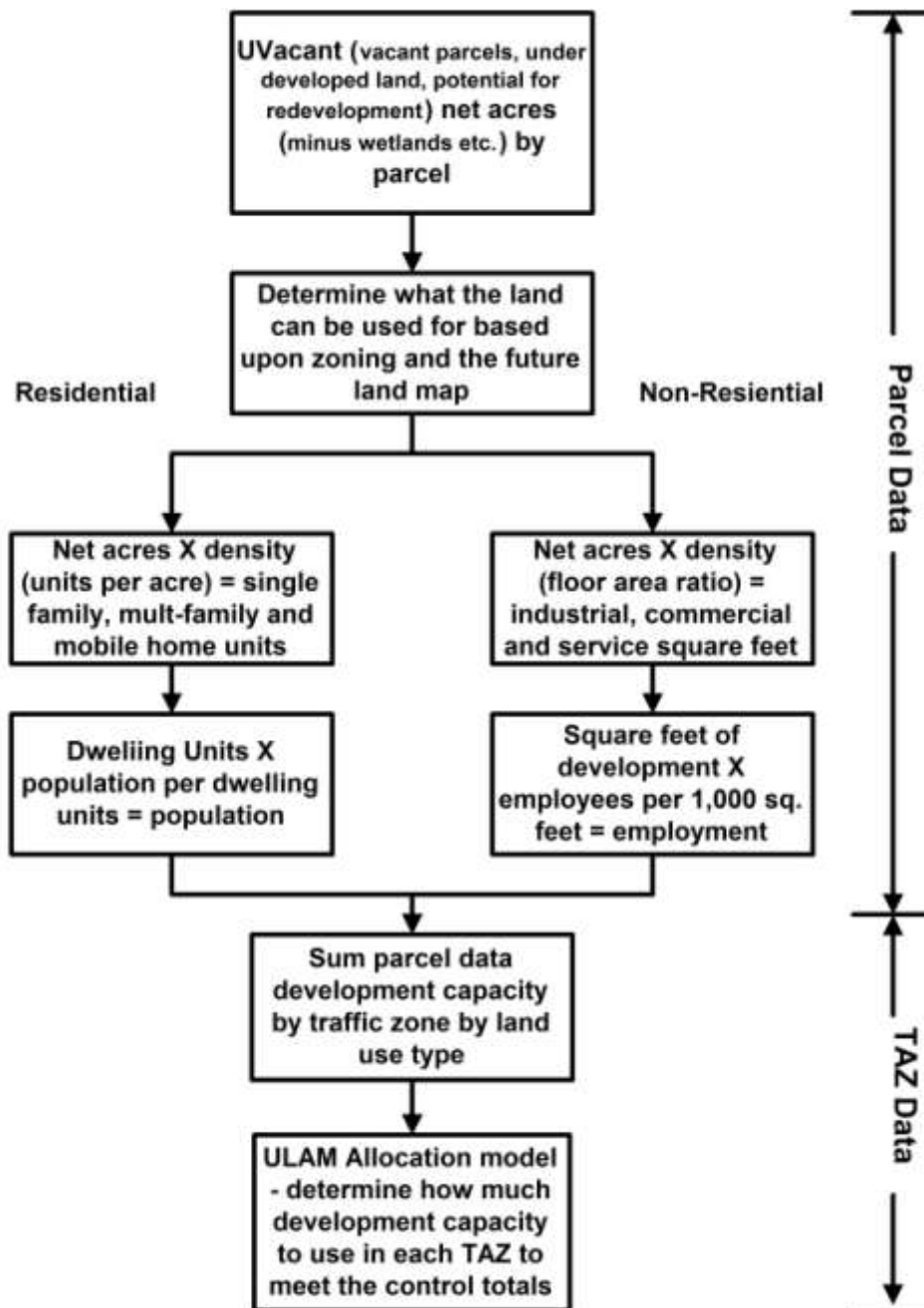
ULAM
Historical Trend
Allocation Results

**2010 - 2040
Allocated Growth**

(Net Change)

Population
1 Dot = 20
TAZs

ULAM
Historical Trend
Allocation Results
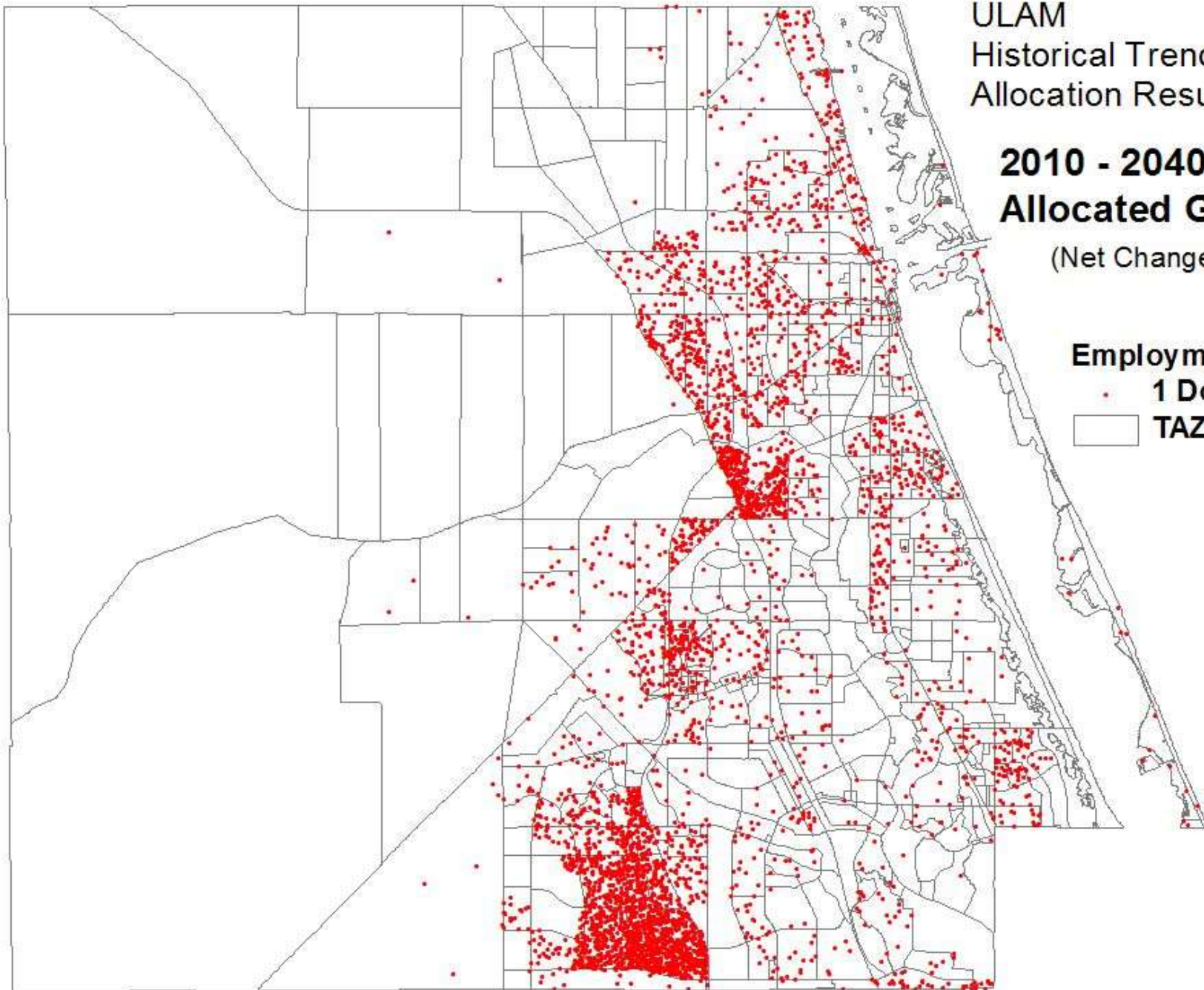
**2010 - 2040
Allocated Growth**

(Net Change)

Employment
1 Dot = 20
TAZs

**ULAM
Historical Trend
Allocation Results**

2010 -2040
Allocated Growth

Population
. 1 Dot = 20
Urban Service Area
TAZs

(Net Change)

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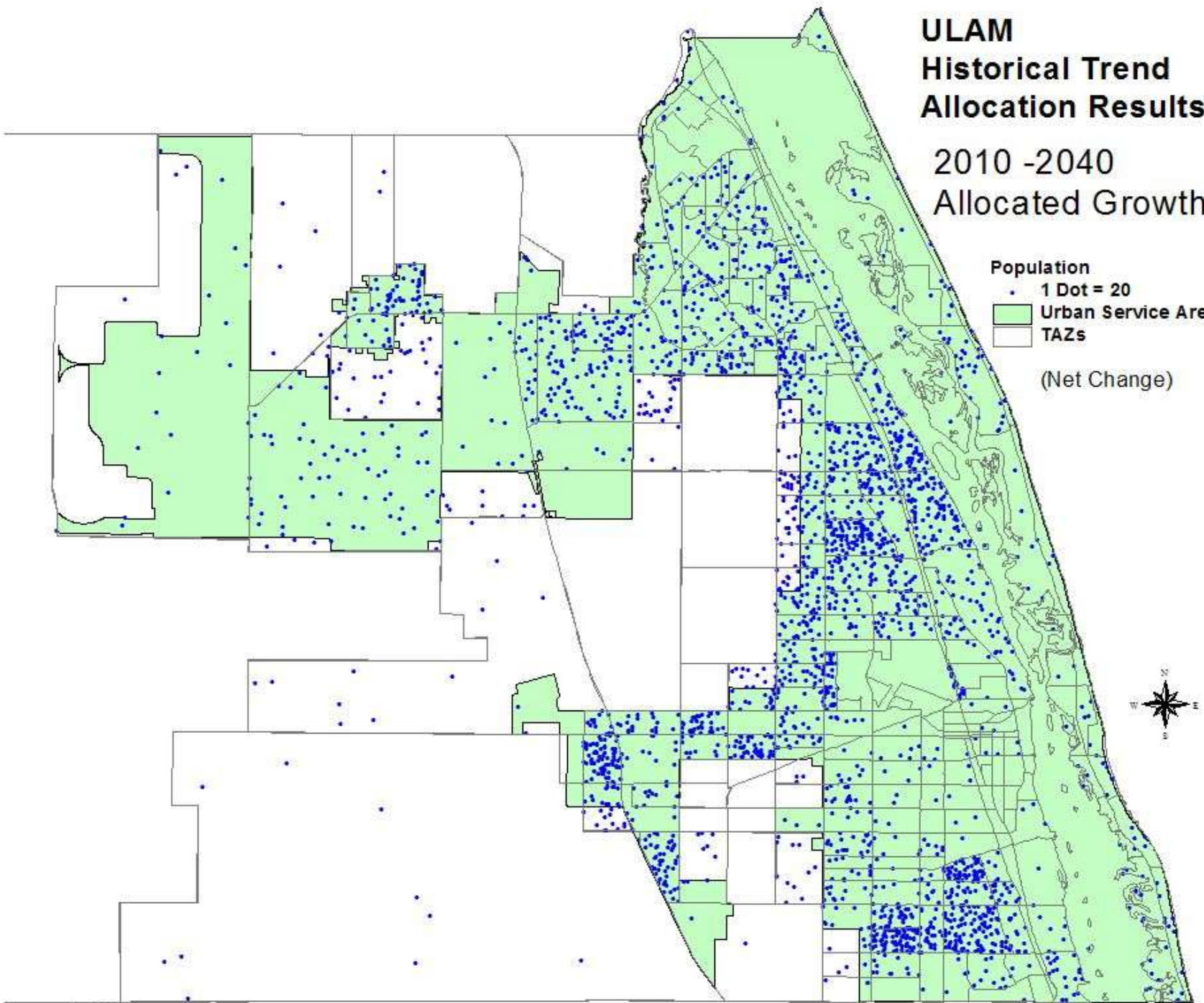
ULAM
Historical Trend
Allocation Results

2010 - 2040

Allocated Growth
(Net Change)

Single Family DUs
- 0
- 1 - 205
- 206 - 438
- 439 - 821
- 822 - 1811
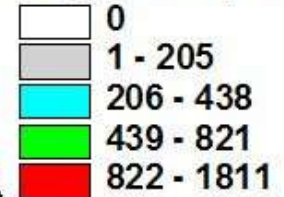
ULAM
Historical Trend
Allocation Results

2010 - 2040
Allocated Growth
(Net Change)

Multi-Family DUs
- 0
- 1 - 108
- 109 - 229
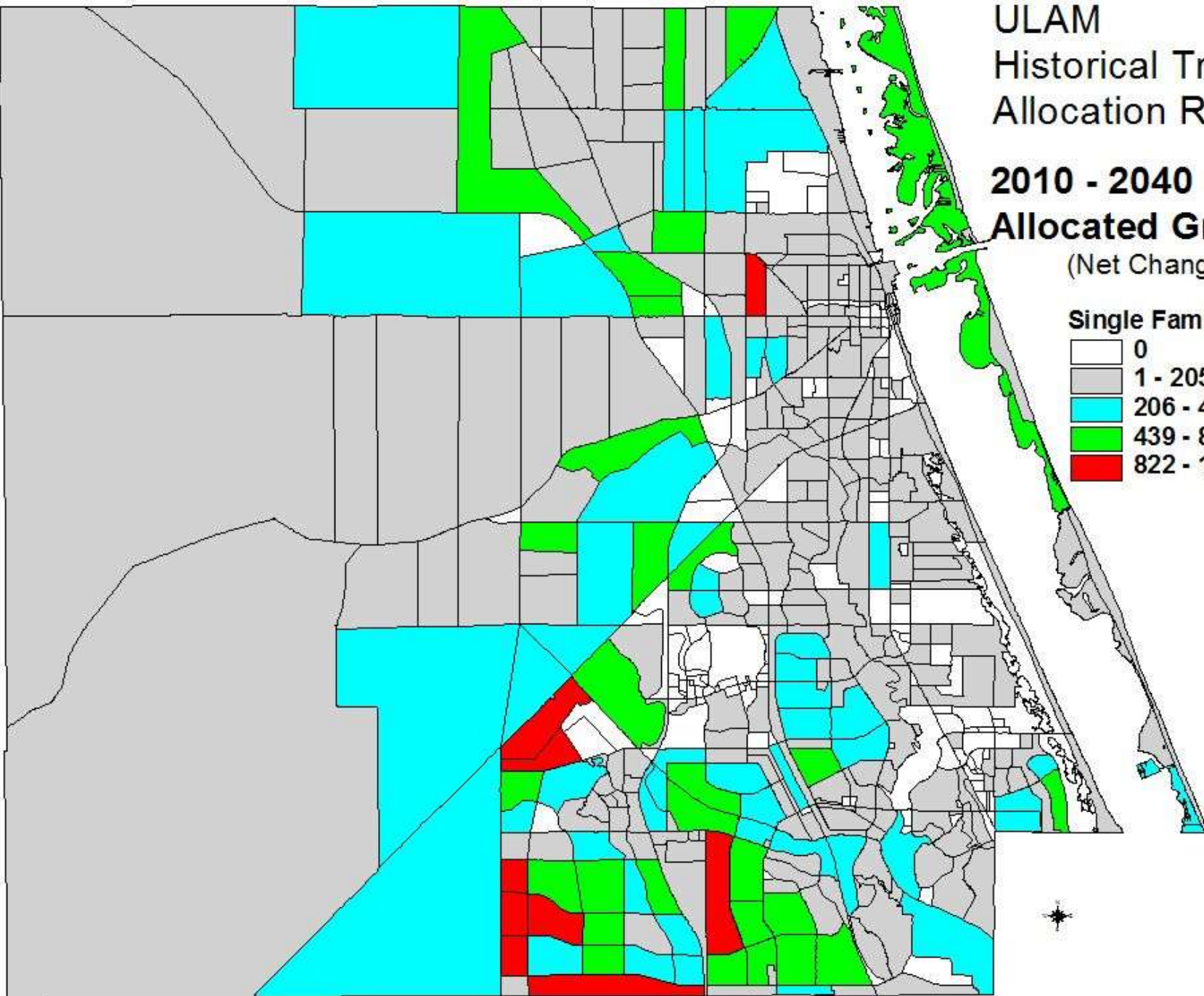- 230 - 377
- 378 - 844
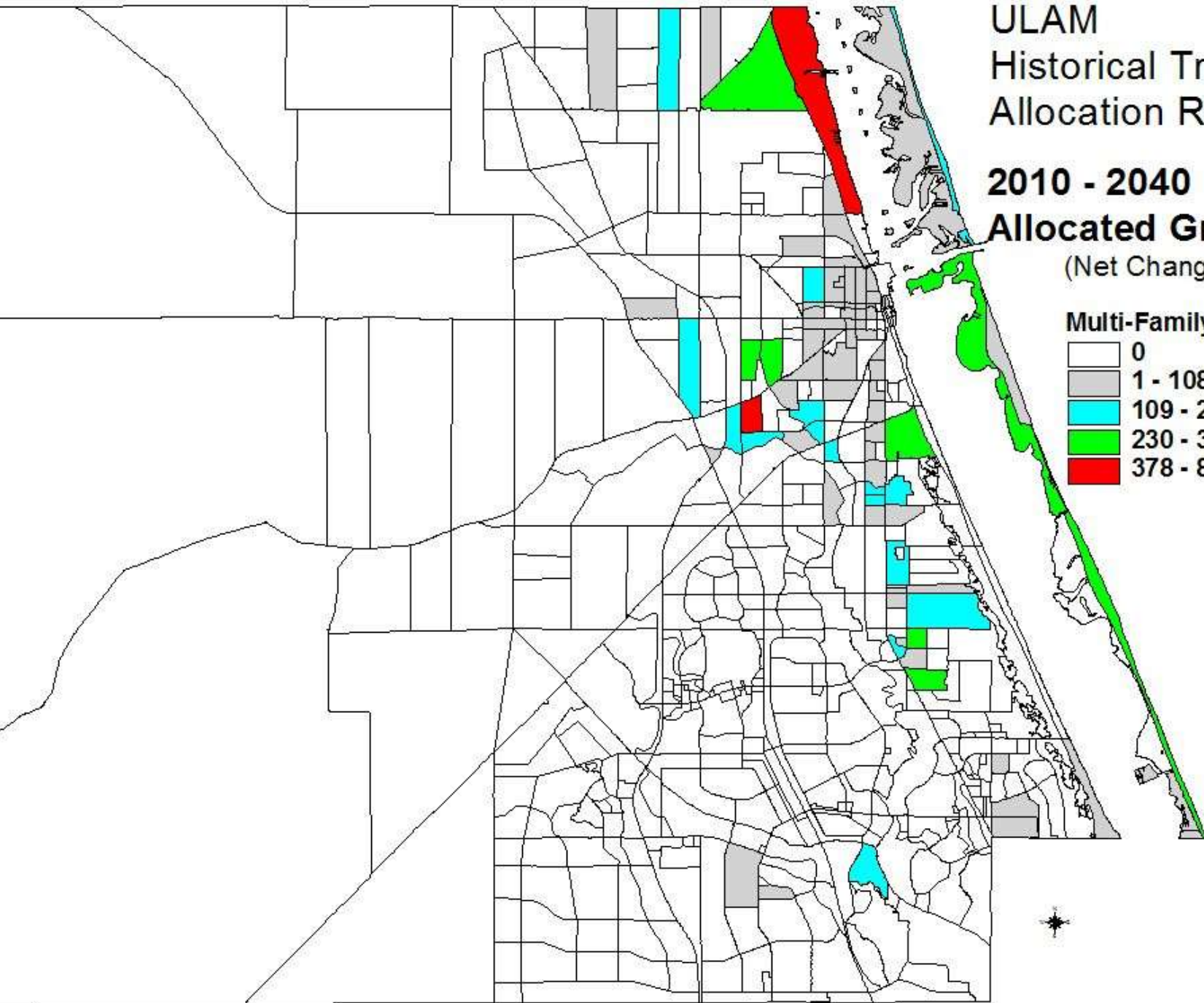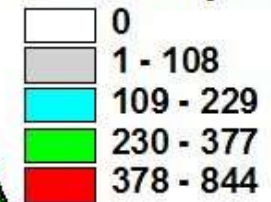
Conversion to ABM 2040 Population and Household Data

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ULAM South Florida Household Disaggregation Process

Dwelling Units (single family, multi-family, mobile home and hotel units) by traffic zone

↓

Dweling units - vacancy rate = occupied units or households by traffic zone

Household Size	Income	Workers	Children
→ HHSIZE_1	→ INC_25K	→ WRKRS_0	→ No_CHILD
→ HHSIZE_2	→ INC_50K	→ WRKRS_1	→ CHILDREN
→ HHSIZE_3	→ INC_75K	→ WRKRS_2	
→ HHSIZE_4UP	→ INC_100K	→ WRKRS_3+	
	→ INC_100K+		
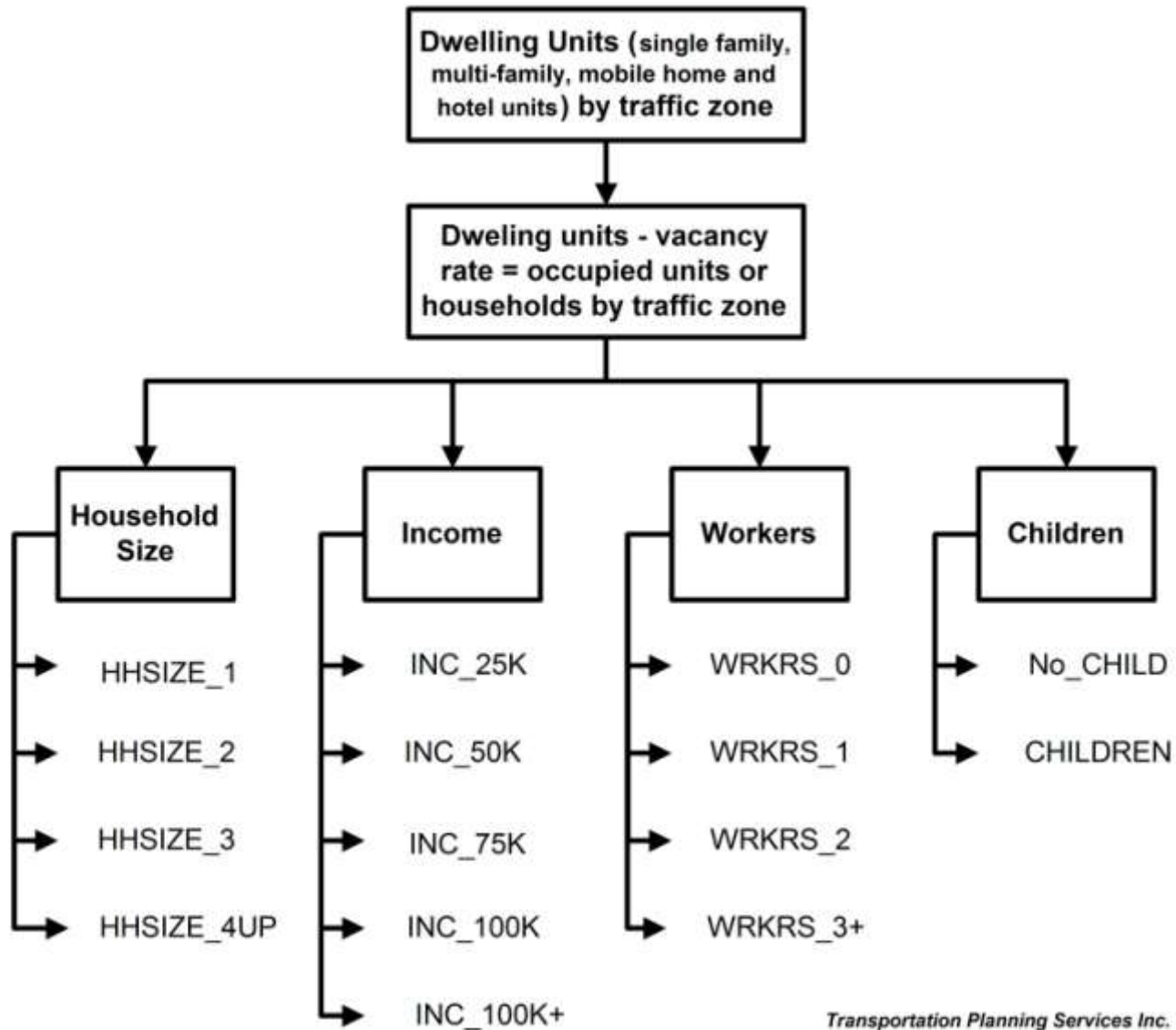
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ULAM South Florida ABM Population Disaggregation Process

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Total Population by Traffic Zone from ULAM allocation

Disaggregate population by Age using adjusted base year data
- AGE 0TO4
- AGE 5TO14
- AGE 15TO17
- AGE 18TO24
- AGE 25TO34
- AGE 35TO49
- AGE 50TO64
- AGE 65TO79
- AGE 80PLUS

Disaggregate population by Age using adjusted base year data
- HISPANIC
- WHITE
- RACE OTHER

Disaggregate population by Age using adjusted base year data
- MALE
- FEMALE

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Conversion to ABM 2040 Employment Data

Employment Allocation Process

- Employment Control Totals identified for all 16 categories

- Allocate 3 major categories to TAZ

- Disaggregate within each TAZ to the 16 categories

- Difficult to allocate 16 employment categories because zoning is done at the municipal level by general categories ex. Office, retail and industrial

ULAM ABM Employment Disaggregation Process

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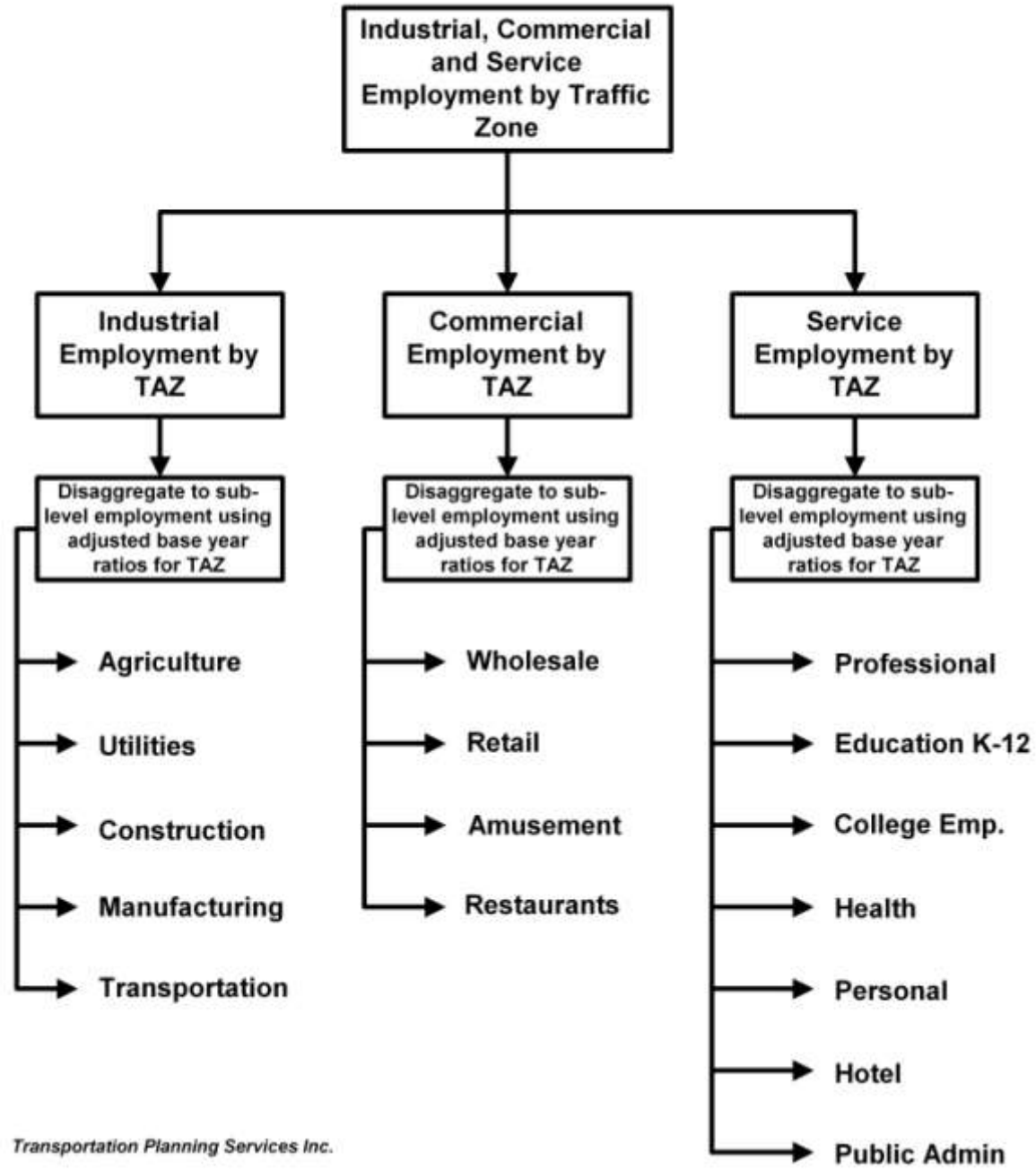
Zoning vs ABM Employment

St. Lucie County Example

Code	Zoning
AG-1	Agricultural - 1 du/ 1 acre
AG-2.5	Agricultural - 1 du/2.5 acre
AG-5	Agricultural - 1 du/5 acre
AR-1	Agricultural Residential 1 du/1 acre
CG	**Commercial General**
CN	**Commercial Neighborhood**
CO	**Commercial Office**
CPUB	Conservation Public
HIRD	Hutchinson Island Residential
I	**Institutional**
IH	**Industrial Heavy**
IL	**Industrial Light**
IX	**Industrial Extraction**
PCS	Planned Country Subdivision
PMUD	**Planned Mixed Use Development**
PNRD	**Planned Non-Residential Development**
PUD	Planned Unit Development
R/C	Residential/Conservation 1 du/5 acre
RE-1	Residential Estate - 1 du/1 acre
RE-2	Residential Estate - 2 du/1 acre
RF	Religious Facility
RM-11	Multiple Family - 11 du/1 acre
RM-5	Multiple Family - 5 du/1 acre
RM-9	Multiple Family - 9 du/1 acre
RMH-5	Residential, Mobile Home
ROW	Rights of Way
RS-2	Single Family - 2 du/1 acre
RS-3	Single Family -3 du/1 acre
RS-4	Single Family - 4 du/1 acre
RVP	Recreational Vehicle Park ? 14 lots
SPIS	Spoil Island
SUBM	Submerged
U	Utilities

FLUM	ABM Employment
AG-2.5	Agriculture
AG-5	Utilities
COM	Construction
CPUB	Manufacturing
H	Wholesale Trade
IND	Retail Trade
MXD	Transportation
P/F	Professional Services
R/C	Amusement Services
RE	Education K-12
RHRM	Education College
ROW	Health Services
RS	Personal Services
RU	Hotel & Motel Services
SD	Restaurants & Bars Services
SPIS	Public Administration
SUBM	
T/U	
TVC	

School Enrollment Projections

Enrollment Projections

- ## Public School Enrollment
  - – School enrollment provided for each individual school by type of school separate from ULAM.

- ## Private School Enrollment
  - – Factor up based upon changes in the school age population.

- ## University Enrollment
  - – Use University projections where available
  - – Factor up based upon change in the age18-24 adult population.

St. Lucie Schools

Schools
- 1 Elementary
- 2 Middle
- 3 High
- 4 Magent
- 6 Private
- 8 Jr. College
- 9 University
- TAZs

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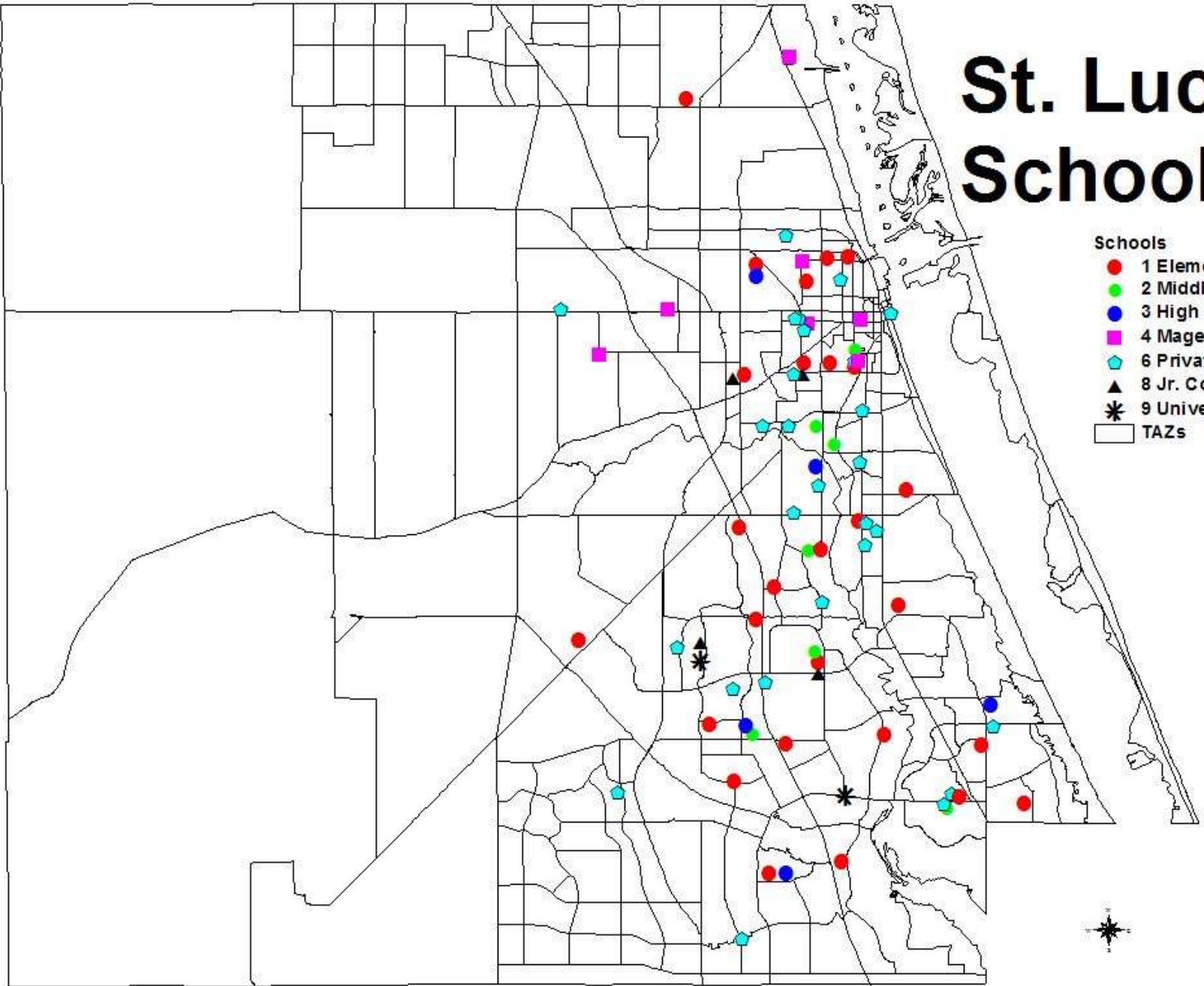
School Enrollment Data

Shape	Staz	Base_y	Yr_2015	Yr_2040	Typ	Name	Cap_pem	Cap_port	Sch_staff	Yr_built
Point	219	115	70	172	6 Private	NEW LIFE CHRISTIAN ACADEMY	0	0	12	1999
Point	386	0	0	0	9 University	BARRY UNIVERSITY	0	0	0	1987
Point	454	0	177	0	6 Private	MORNINGSIDE ACADEMY	0	0	27	1981
Point	469	0	0	0	6 Private	CALVARY ACADEMY	0	0	0	1986
Point	43	1465	1461	2150	3 High	WESTWOOD HIGH SCHOOL	0	0	97	0
Point	93	1227	1228	1898	1 Elementary	SAMUEL S GAINES ACADEMY K8	0	0	106	0
Point	8	664	664	1027	1 Elementary	LAKEWOOD PARK ELEMENTARY SCHOOL	0	0	63	0
Point	54	1822	1822	2730	6 Private	LINCOLN PARK ACADEMY	0	0	113	0
Point	156	590	590	913	1 Elementary	LAWNWOOD ELEMENTARY SCHOOL	0	0	60	0
Point	157	1771	640	2740	1 Elementary	ST LUCIE ELEMENTARY SCHOOL	0	0	61	0
Point	157	0	785	0	2 Middle	DAN MCCARTY MIDDLE SCHOOL	0	0	71	0
Point	157	0	72	0	4 Magent	INDIAN HILLS SCHOOL	0	0	17	0
Point	145	72	238	105	4 Magent	DELAWARE AVENUE SCHOOL	0	0	31	0
Point	52	640	639	990	1 Elementary	CHESTER A MOORE ELEMENTARY SCHOOL	0	0	59	0
Point	148	328	328	480	4 Magent	FT PIERCE MAGNET SCHOOL OF THE ARTS	0	0	37	0
Point	51	907	610	1403	1 Elementary	FRANCIS K SWEET ELEMENTARY SCHOOL	0	0	55	0
Point	200	546	547	845	1 Elementary	WEATHERBEE ELEMENTARY SCHOOL	0	0	53	0
Point	401	881	882	1363	1 Elementary	WINDMILL POINT ELEMENTARY SCHOOL	0	0	73	0
Point	401	2506	2502	3678	3 High	TREASURE COAST HIGH SCHOOL	0	0	134	0
Point	291	1303	1303	1917	2 Middle	ST LUCIE WEST MIDDLE SCHOOL	0	0	99	0
Point	291	2487	2487	3650	3 High	ST LUCIE WEST CENTENNIAL HIGH SCHOO	0	0	146	0
Point	364	1512	1513	2339	1 Elementary	OAK HAMMOCK ELEMENTARY SCHOOL	0	0	106	0
Point	115	1141	1140	1765	1 Elementary	ALLAPATTAH FLATS ELEMENTARY	0	0	81	0
Point	179	0	18	0	4 Magent	DATA HOUSE	0	0	0	0
Point	246	695	695	1075	1 Elementary	SAVANNA RIDGE ELEMENTARY SCHOOL	0	0	60	0
Point	223	1722	764	2664	1 Elementary	RIVERS EDGE ELEMENTARY SCHOOL	0	0	65	0
Point	87	0	0	0	8 Jr. College	INDIAN RIVER COMMUNITY COLLEGE	0	0	0	0
Point	138	0	35	0	4 Magent	TREASURE COAST - PACE	0	0	12	0
Point	92	0	0	0	Admin	ST LUCIE COUNTY SUPERINTENDENT OFFI	0	0	14	0

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Census Group Quarters Conversion to ABM Data

|		
10	**Correctional Facilities for Adults**	GQ_INST
11	Correctional Residential Facilities	GQ_INST
12	Federal Detention Centers	GQ_INST
13	Federal and State Prisons	GQ_INST
14	Local Jails and Other Municipal Confinement Facilities	GQ_INST
15	Military Disciplinary Barracks and Jails	GQ_INST
20	**Juvenile Facilities**	GQ_INST
21	Correctional Facilities Intended for Juveniles	GQ_INST
22	Group Homes for Juveniles (non-correctional)	GQ_INST
23	Residential Treatment Centers for Juveniles	GQ_INST
30	**Nursing Facilities/Skilled Nursing Facilities**	GQ_OTHER
40	**Other Health Care Facilities**	GQ_OTHER
41	Hospitals with Patients Who Have No Usual Home	GQ_OTHER
42	In-Patient Hospice Facilities	GQ_OTHER
43	Mental (Psychiatric) Hospitals	GQ_OTHER
44	Military Treatment Facilities with Assigned Patients	GQ_OTHER
45	Residential Schools for People with Disabilities	GQ_OTHER
50	**College/University Student Housing**	GQ_COLL
60	**Military Group Quarters**	GQ_MIL
70	**Other Noninstitutional Facilities**	GQ_OTHER
71	Emergency and Transitional Shelters for Homeless	GQ_OTHER
72	Group Homes Intended for Adults	GQ_OTHER
73	Residential Treatment Centers for Adults	GQ_OTHER
74	Religious Group Quarters	GQ_OTHER
75	Workers' Group Living Quarters	GQ_OTHER

Projected Group Quarters Data

- Data by TAZ
  - Institutionalized Group Quarters
  - Non-Institutionalized College Group Quarters
    - Use planned dorm construction data
  - Non-Institutionalized Other Group Quarters
- Future Projections
  - Add known construction projects
  - Compute current ratio of group quarters to the current housing stock or population
  - Adjust based upon population change by age group

Land Use Alternatives

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Infill Districts

Infill Districts
- 1 Downtown District
- 2 Neighborhood Commerical
- 3 Neighborhood Infill District
- 4 U.S. 1 Development Corridor
- 5 Regional Workplace
- 6 Airport/Port Workplace
- 7 Conversion District
- TAZs

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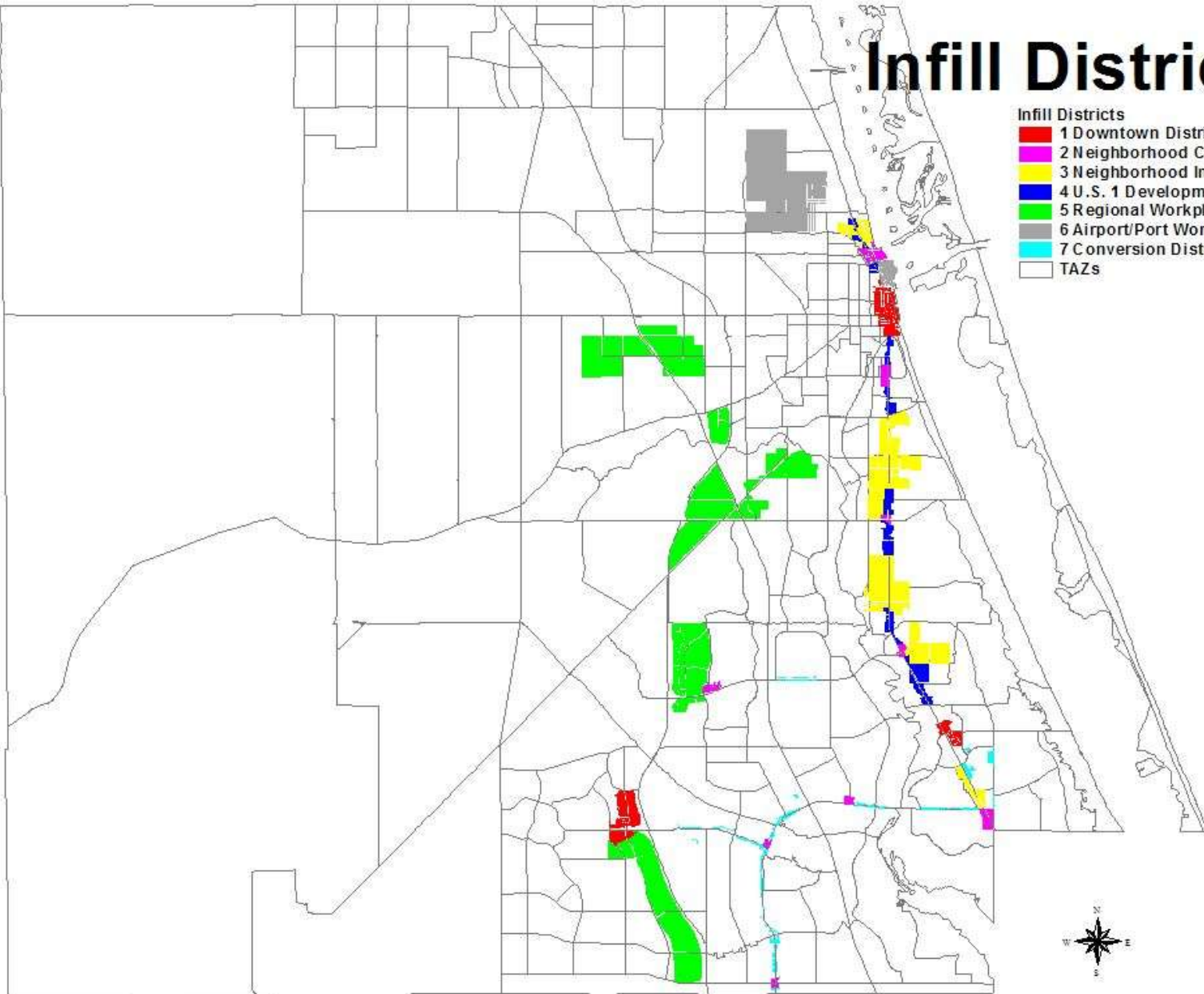
Guidelines for Redevelopment

- **St. Lucie County**

INFILDESC	RESID_MIX	NON_RESID	MIN_DU	MIN_FAR	PCT_IND	PCT_COM	PCT_SER
1 Downtown District	0.40	0.60	9.50	1.00	0.00	0.45	0.55
2 Neighborhood Commercial	0.80	0.20	6.00	0.50	0.00	0.45	0.55
3 Neighborhood Infill District	0.80	0.20	6.00	0.35	0.00	0.45	0.55
4 U.S. 1 Development Corridor	0.60	0.40	12.00	0.50	0.17	0.28	0.55
5 Regional Workplace	0.20	0.80	6.00	0.50	0.17	0.28	0.55
6 Airport/Port Workplace	0.00	1.00	0.00	0.50	0.17	0.28	0.55
7 Conversion District	0.60	0.40	12.00	0.50	0.17	0.28	0.55

- **Fort Pierce**

INFILDESC	RESID_MIX	NON_RESID	MIN_DU	MIN_FAR	PCT_IND	PCT_COM	PCT_SER
1 Downtown District	0.40	0.60	30.00	0.90	0.00	0.45	0.55
2 Neighborhood Commercial	0.80	0.20	17.90	0.60	0.00	0.45	0.55
3 Neighborhood Infill District	0.80	0.20	8.00	0.60	0.00	0.45	0.55
4 U.S. 1 Development Corridor	0.60	0.40	15.00	0.50	0.17	0.28	0.55
5 Regional Workplace	0.20	0.80	6.00	0.50	0.17	0.28	0.55
6 Airport/Port Workplace	0.00	1.00	0.00	0.50	0.17	0.28	0.55

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Schedule

- ABM zonal data files for Historical Trend Alternative - Sept. 30.

- Infill Alternative the second week in Oct.

- Final Report 3rd week in Oct.

End

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