

Hillsborough County 2045 Population and Employment Projections

*Technical Memorandum No. 3:
Alternative and Hybrid Scenarios*

prepared for

Hillsborough County MPO and Planning Commission

prepared by

Cambridge Systematics, Inc.

report

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July 31, 2019

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1.0 Introduction

This is the third of three technical memoranda that describe the development of alternative transportation and land use scenarios on behalf of the Hillsborough MPO and Planning Commission as part of the 2045 population and employment projection process. The first two memoranda describe existing conditions and trends, the development of the Trend Scenario and an associated land use model (LUM) using the CommunityViz Scenario 360 platform.

This Technical Memorandum describes the development of two alternative scenarios, Belt & Boulevard and TOD, and a final Hybrid Scenario. The emphasis is on those elements of the scenario planning and land use modeling process that have changed from the Trend Scenario.

2.0 Alternative Scenarios

2.1 Overview

The scenario planning process provides an opportunity to explore alternative futures that may address topics such as uncertain outcomes, policy decisions and infrastructure investments. Under the guidance of MPO and Planning Commission staff, the following alternative scenarios were developed:

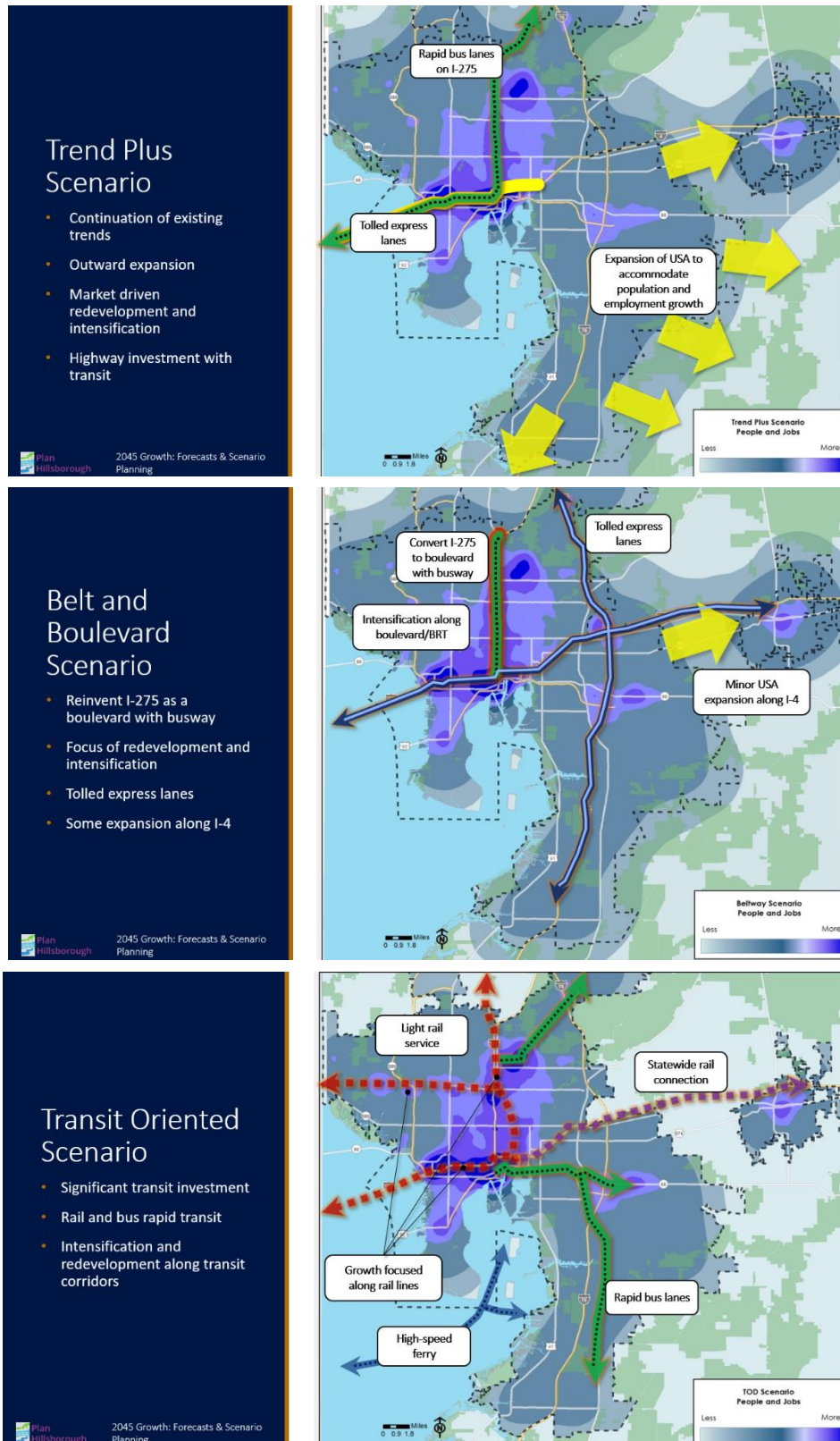
- Belt & Boulevard: Highlighted by the conversion of I-275 to a boulevard with a bus rapid transit line and associated intensification and redevelopment.
- Transit Oriented Development (TOD): Highlighted by significant investment in high capacity transit with associated intensification and redevelopment.

Figure 1 provides a conceptual overview of each scenario. A number of changes to the land use model are necessary in order to replicate the alternative scenarios. These include:

- New placetypes;
- Assumptions about redevelopable land;
- A new buildout analysis;
- Different control totals, and
- A new allocation.

Each of these is described in the following sections.

Figure 1. Overview Trend and Alternative Scenarios



2.2 Placetypes

A number of new placetypes were developed to replicate intensification associated with development around high capacity transit and, in the case of the Belt & Boulevard Scenario, new growth along the I-4 corridor.

New placetypes include:

- Park and Ride Suburban Residential
- Employment Center
- Neighborhood Center - Suburban
- Neighborhood Center - Urban
- Community Center - Suburban
- Community Center - Urban
- MU Regional - Urban
- High Intensity Center
- Community Center Urban In-Town Neighborhood
- Community Center Suburban Infill

Placetype assignments for the Belt & Boulevard and TOD Scenarios are provided in Figure 2. Detailed placetype definitions are provided in the Appendix.

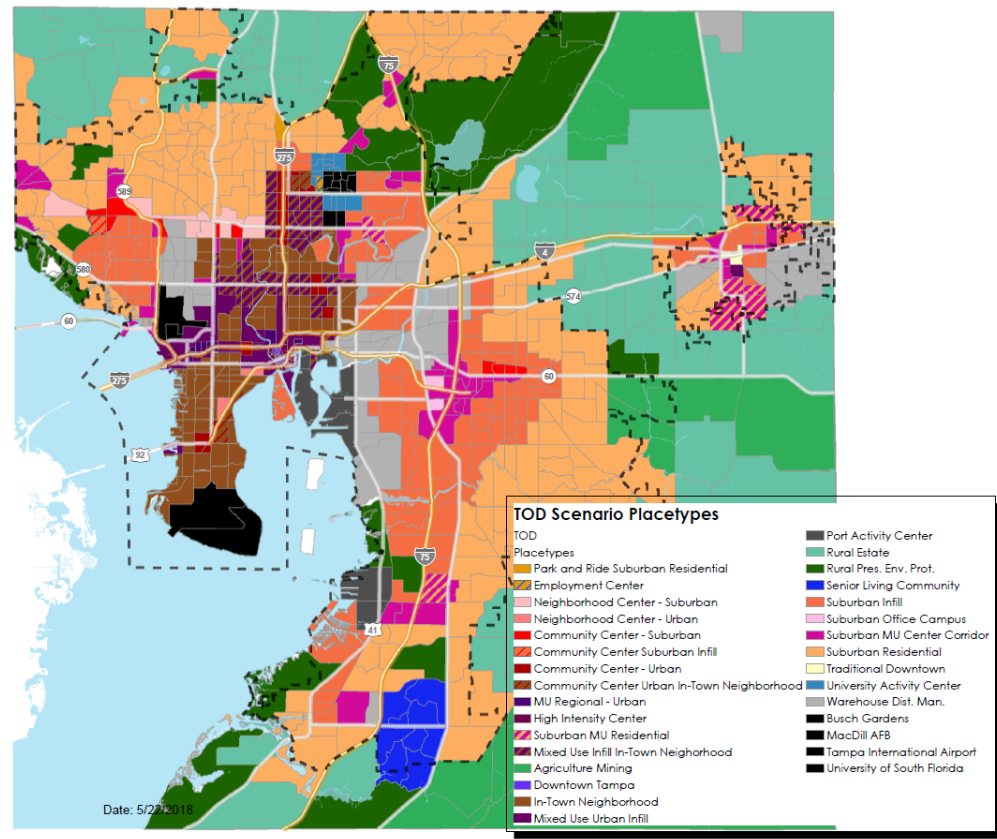
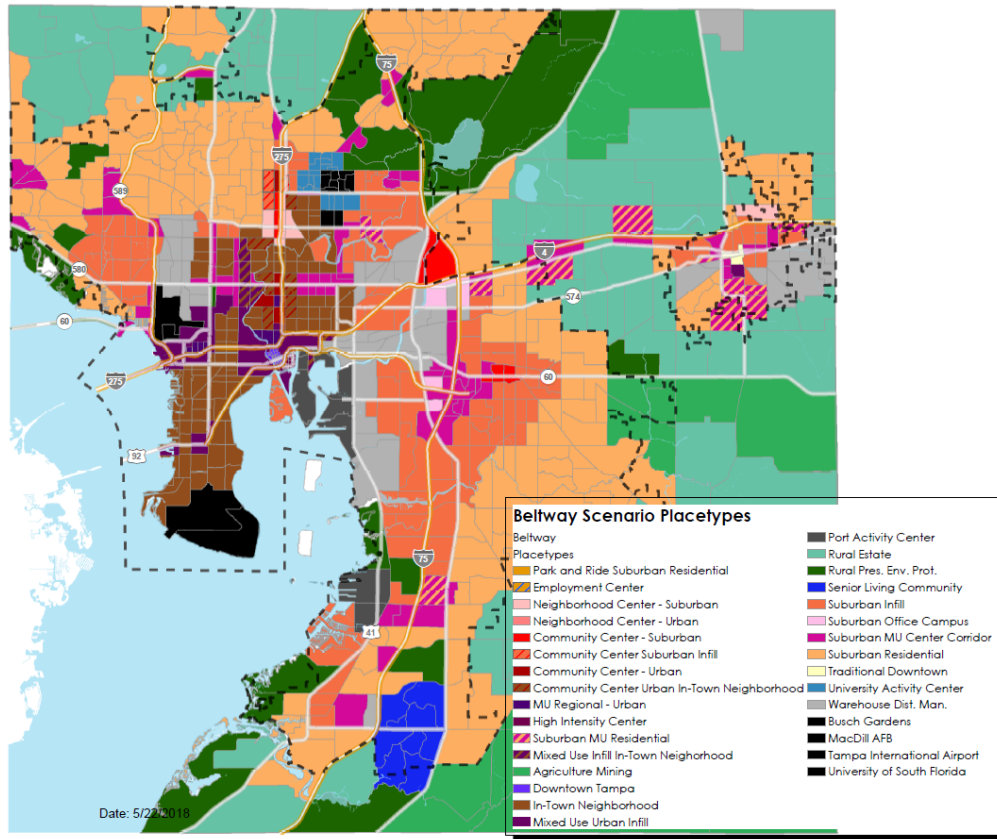
2.3 Redevelopable Land

Major transportation investments, such as high capacity transit, have the potential to activate and accelerate redevelopment of land. To address this phenomenon, additional analysis of redevelopable land was performed for locations where high capacity transit stations are assumed for the Belt & Boulevard and TOD scenarios. For the purpose of this analysis, "station areas" are defined as model polygons with a majority of their area within a half-mile of a transit station.

Parcels that fall within station area polygons not previously identified as redevelopable, are defined as such if they meet the following all-inclusive criteria:

- Includes a structure with an effective build date of 1980 or earlier;
- FAR less than or equal to 0.25, and
- Minimum size of 0.5 acres.

Figure 2. Alternative Scenario Placetypes



2.4 Buildout Analysis

A buildout analysis of the Belt & Boulevard and TOD Scenarios was performed in CommunityViz based on the amount of unconstrained vacant and developable land and the attributes of assigned placetypes. Jurisdictional comparisons with existing population and employment and capacities associated with the Trend Plus Scenario are provided in Figure 3 and Figure 4, respectively.

Figure 3. Alternative Scenario Population Capacity

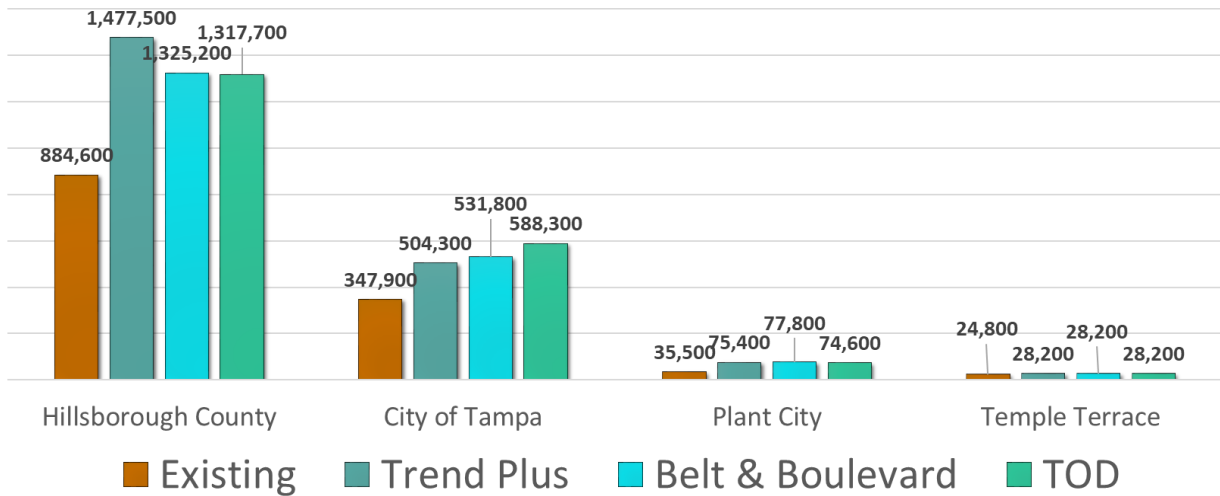
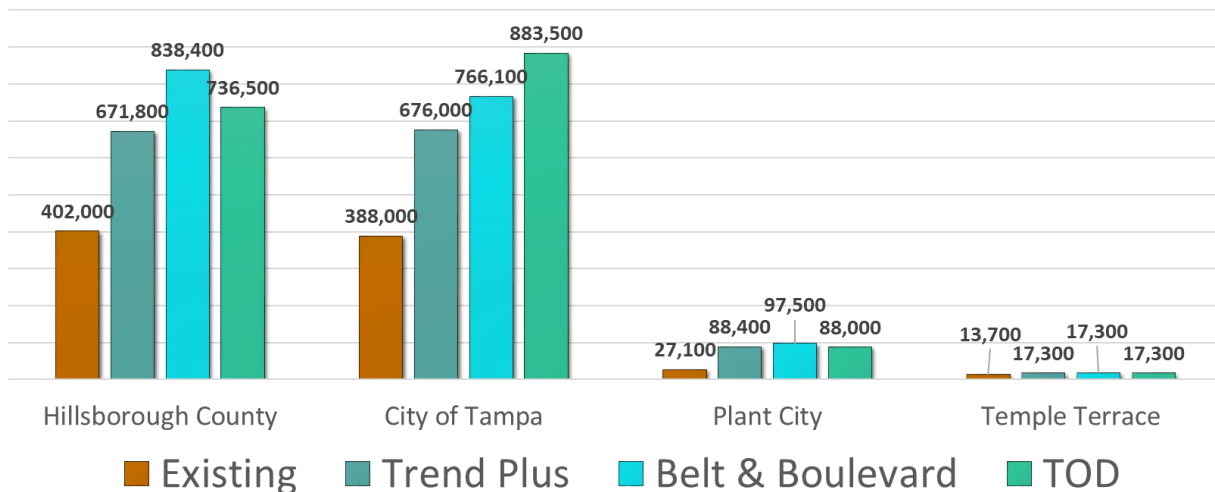


Figure 4. Alternative Scenario Employment Capacity



2.5 Control Totals

The resulting buildout population capacity of the Belt & Boulevard Scenario is 1,963,000, which is about 44,000 people less than the year 2045 projected population of Hillsborough County. Rather than modify placetypes so that the Belt & Boulevard Scenario would have enough capacity to absorb the projected 2045 population, staff made a decision to make this capacity limitation a built-in assumption of the scenario. Thus, the Belt & Boulevard Scenario assumes that countywide population growth will reach its limit by 2045, and approximately 44,000 people will be absorbed by surrounding counties.

2.6 Allocation Results

Figure 5 and Figure 6 show the population allocation results relative to buildout capacity for the Belt & Boulevard and TOD Scenarios, respectively. The allocation essentially consumes all available capacity.

Figure 5. Belt & Boulevard Scenario Population Allocation Results

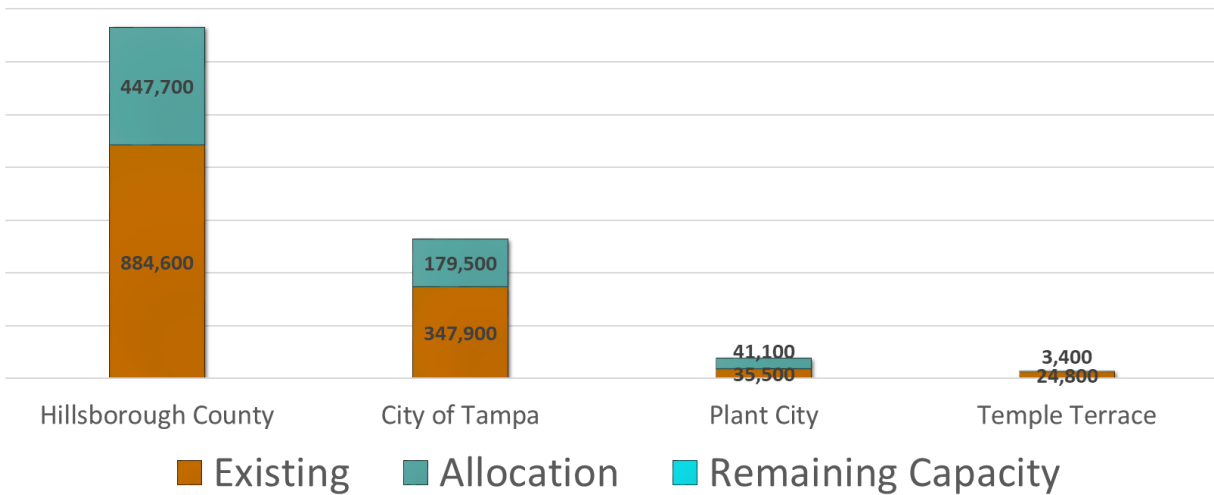
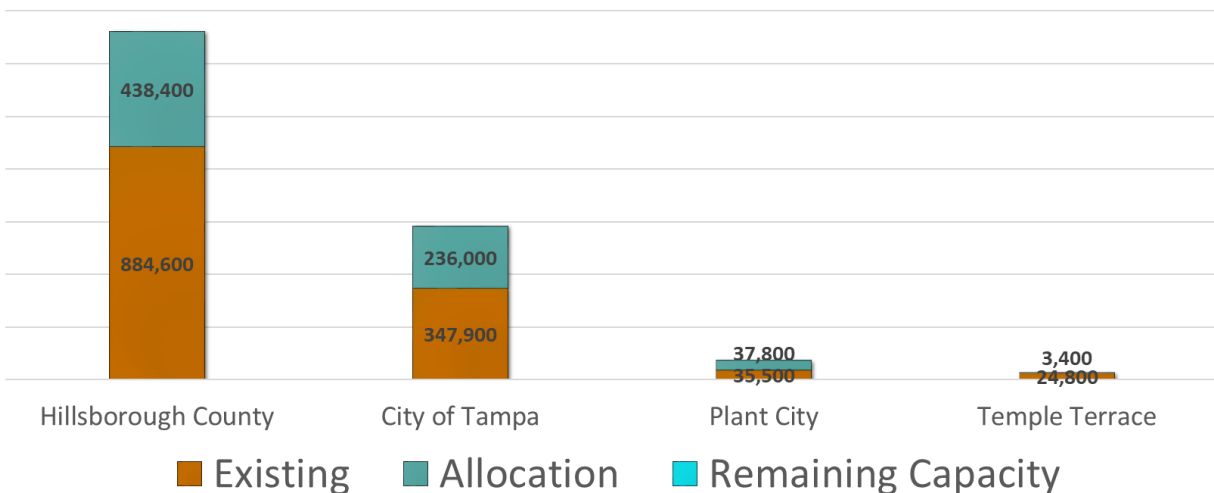


Figure 6. TOD Scenario Population Allocation Results



Employment allocation results are shown in Figure 7 and Figure 8. The employment control totals assume the current ratio of jobs to population (0.64) will remain constant into the future.

The employment allocation consumes a majority available capacity in Temple Terrace in both scenarios. There is only a marginal amount of remaining capacity in Tampa under the Belt & Boulevard Scenario, while the unincorporated county and Plant City have a significant amount of remaining capacity (relative to existing and allocated employment) under both scenarios.

Figure 7. Belt & Boulevard Scenario Employment Allocation Results

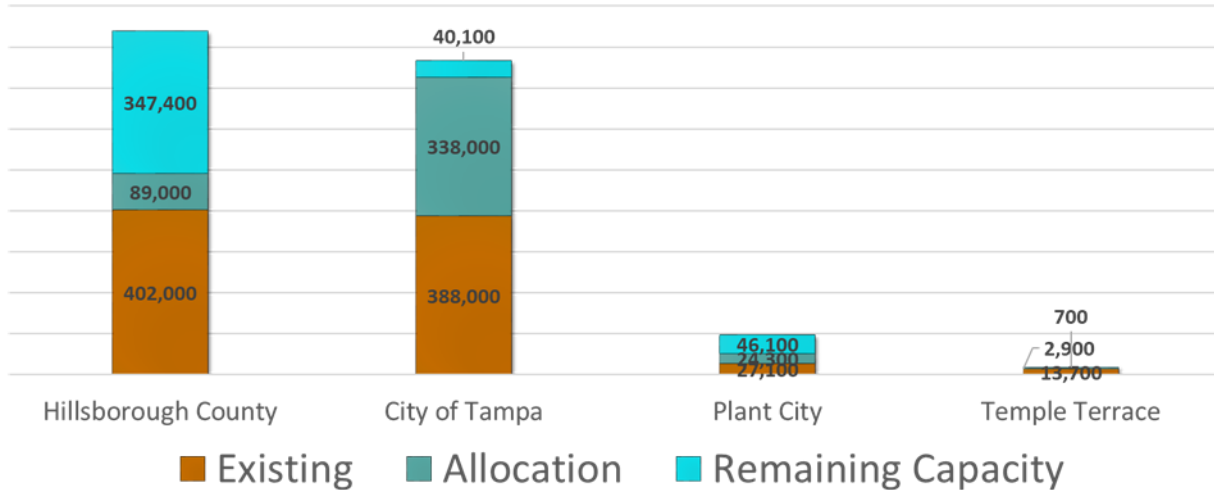
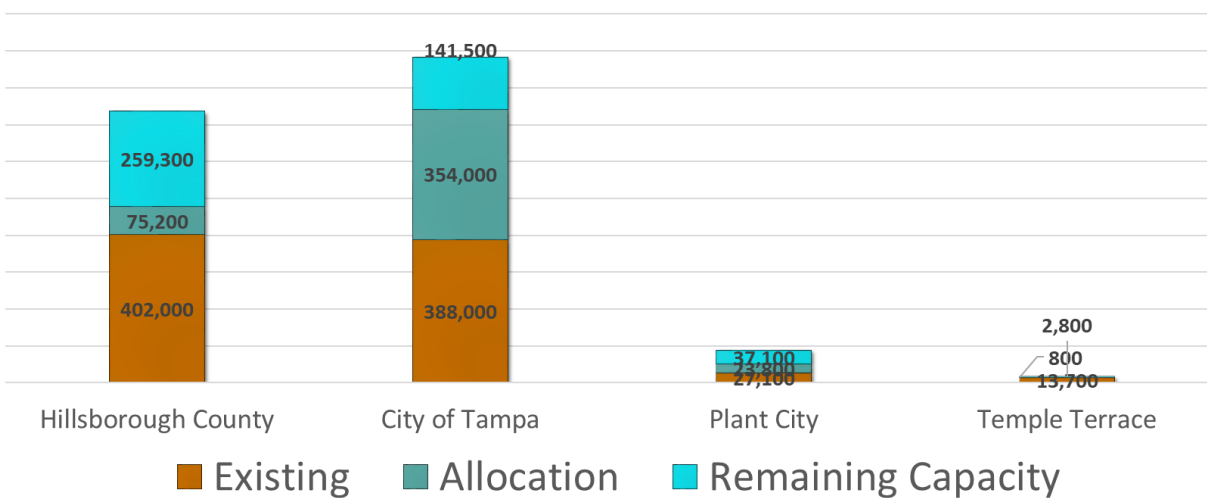


Figure 8. TOD Scenario Employment Allocation Results



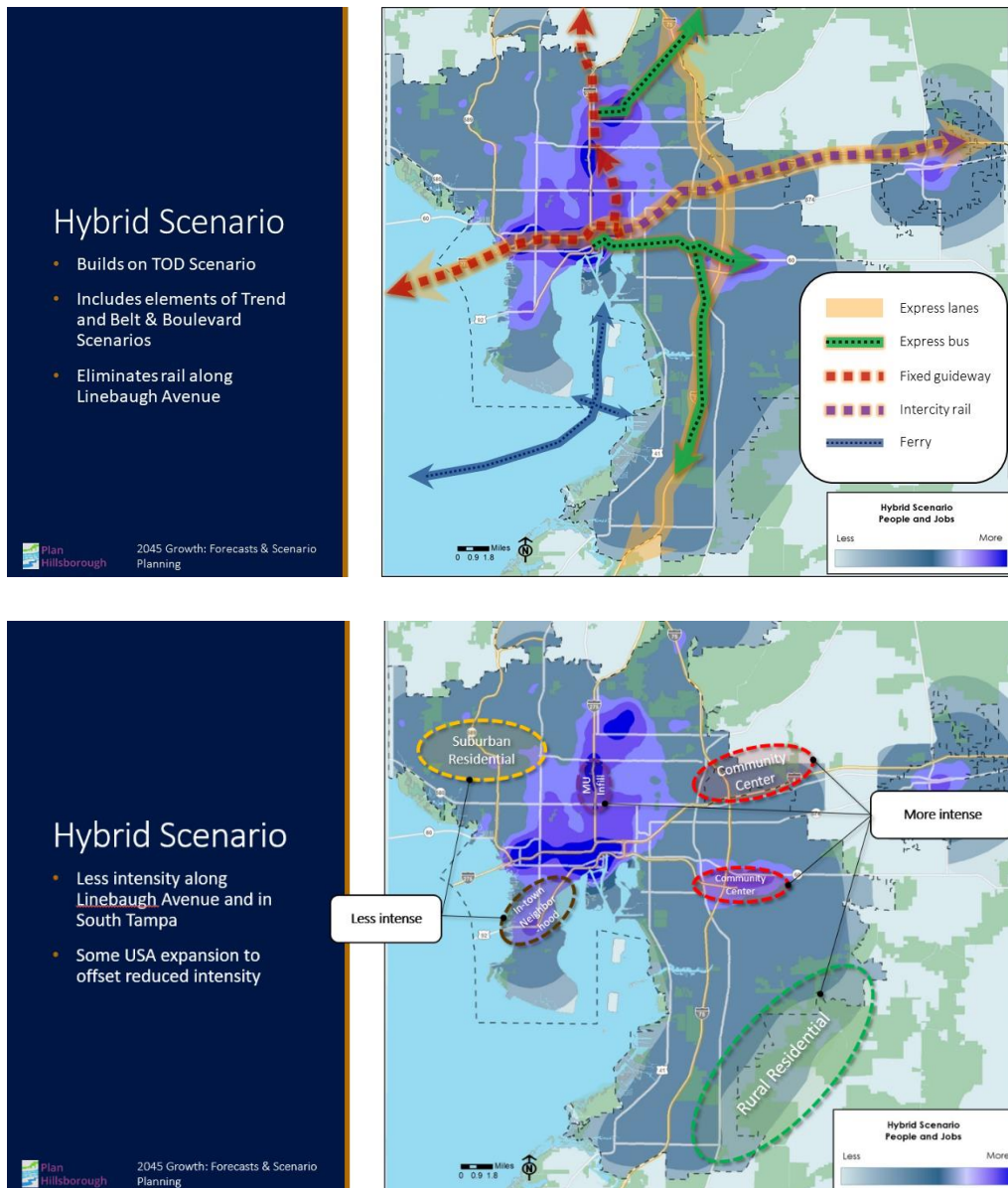
3.0 Hybrid Scenario

3.1 Overview

Insights gained from the Trend, Belt & Boulevard and TOD Scenarios influence the development of a final Hybrid Scenario. This scenario represents the preferred vision of Hillsborough County's future.

Much like the Belt & Boulevard and TOD Scenarios, the Hybrid is developed through modifications to placetypes, redevelopable land and control totals. Additionally, this scenario includes a modified suitability analysis and allocation process, as well as interim year allocations. Each of these is described in the following sections.

Figure 9. Hybrid Scenario Overview



3.2 Placetypes

The TOD Scenario received the most favorable feedback among the three scenarios during the public outreach process. As a result, staff chose to use the TOD Scenario as the starting point for the Hybrid Scenario. The following placetype modifications were made to the TOD Scenario to create the Hybrid Scenario:

- Reversion of the Linebaugh Avenue corridor to Suburban Residential corresponding to the elimination of rail along the corridor;
- A lower intensity placetype (In-Town Neighborhood) in South Tampa;
- Intensification (Mixed Use Urban Infill) along the I-275/Florida Avenue/Nebraska Avenue corridor between Hillsborough Avenue and Busch Boulevard;
- The introduction of a new placetype, Community Center, at the Brandon Town Center and along the I-4 corridor, and
- The introduction of a new placetype, Rural Residential Planned, in the RP-2 expansion area in southwest Hillsborough County.

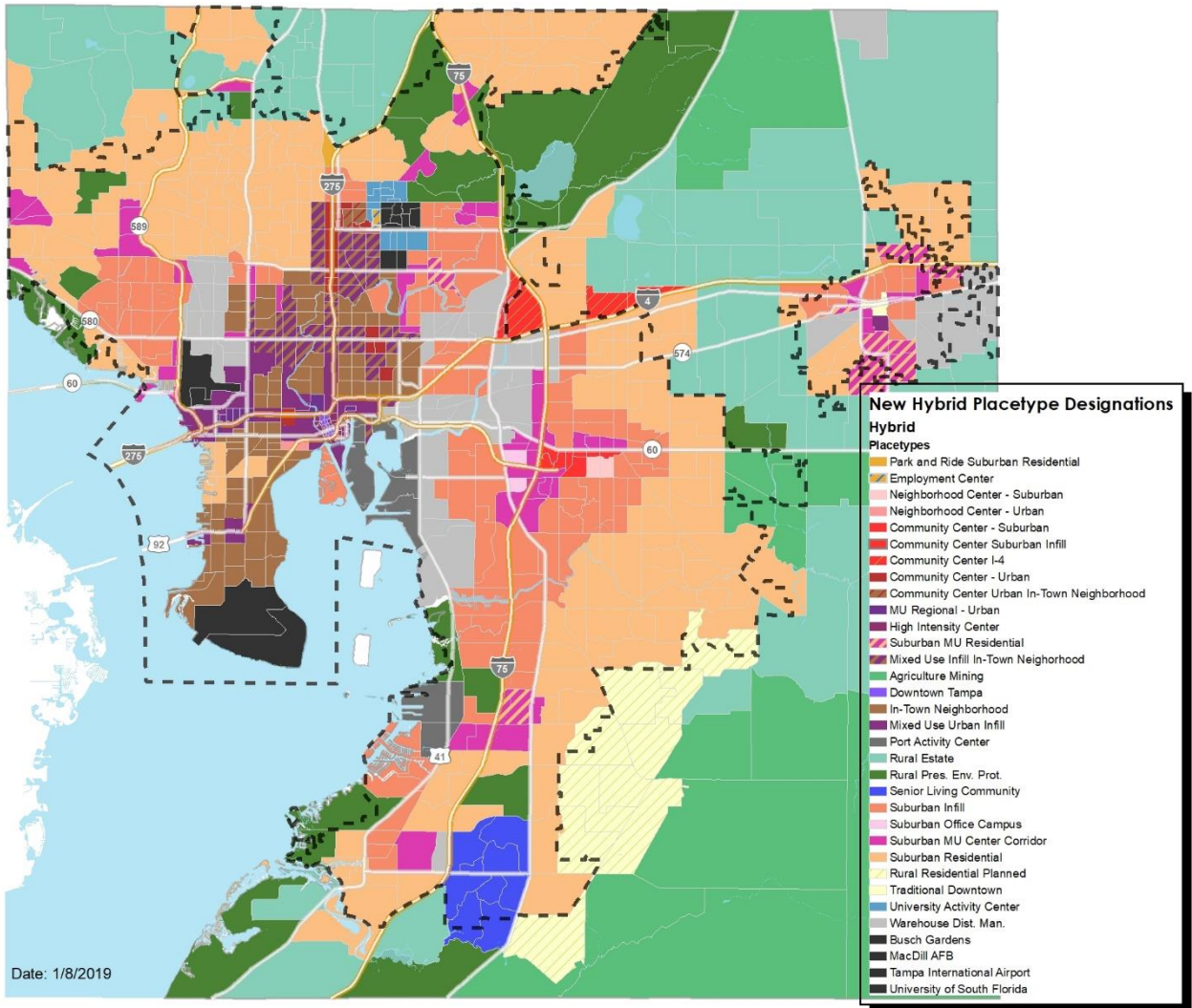
Hybrid Scenario placetype designations are shown in Figure 10.

In addition to the addition of the two new placetypes described above, a number of modifications were made to the existing placetype definitions, primarily in the form of change to land use mix, residential density floor area ratio and residential and non-residential occupancy rates. In some cases, changes were made to create enough capacity to absorb projected 2045 population. In other cases, changes were made to reflect a more reasonable absorption on non-residential floor area, as revealed in a market reality check prepared for this project (documented in a separate report). Changes to existing placetype definitions and new placetype definitions are included in the Appendix.

3.3 Redevelopable Land

Similar to the Belt & Boulevard and TOD Scenarios, the Hybrid Scenario uses the same criteria to identify additional redevelopable land in station areas. The redevelopable land inventory associated with the Hybrid Scenario is essentially the same as the TOD Scenario, with the exception of the Linebaugh Avenue corridor, which eliminates high capacity transit.

Figure 10. Hybrid Scenario Placetypes



3.4 Buildout Analysis

A buildout analysis of the Hybrid Scenarios was completed, based on the amount of unconstrained vacant and redevelopable land and the attributes of assigned placetypes. Jurisdictional comparisons with existing population and employment and capacities associated with the Trend Plus, Belt & Boulevard and Hybrid Scenarios are provided in Figure 11 and Figure 12, respectively.

Figure 11. Hybrid Scenario Population Capacity

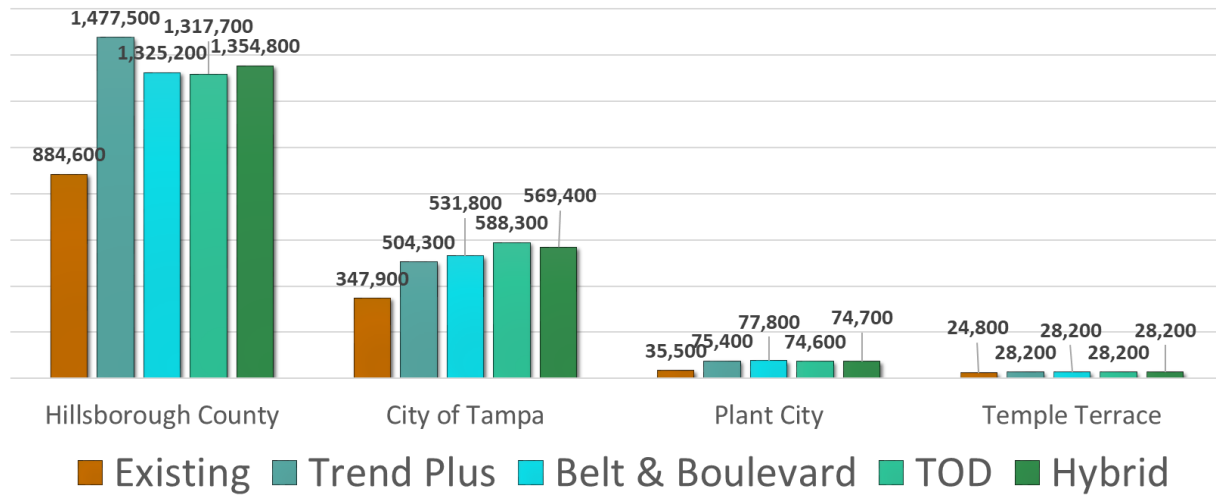
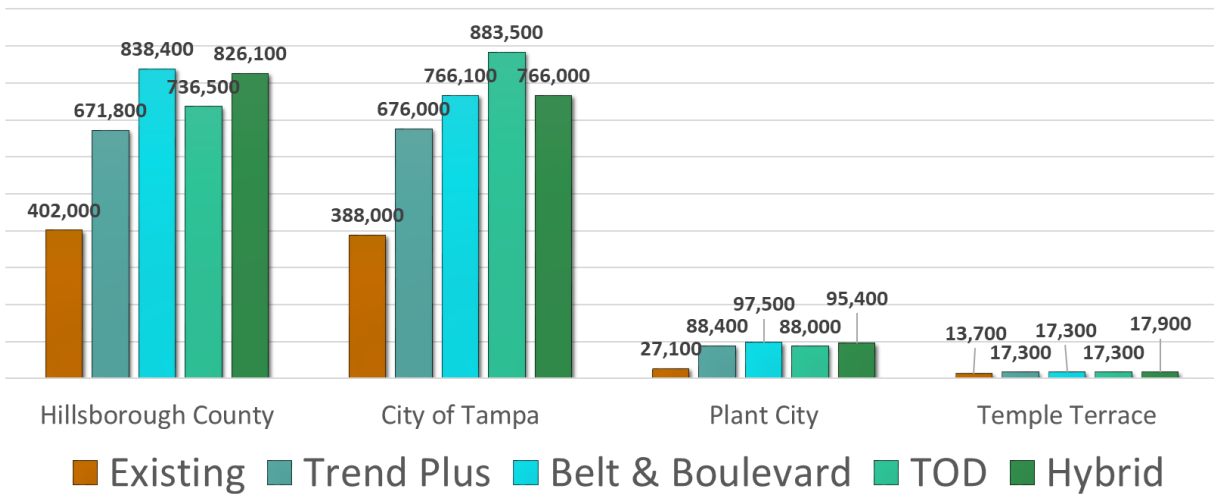


Figure 12. Hybrid Scenario Employment Capacity



3.5 Suitability Analysis

For the Hybrid Scenario, a handful of changes were made to the Suitability Analysis, which drives the attractiveness of land for growth in the model. These include changes in criteria weighting so that expressway access has a greater influence on the allocation of industrial employment and population proximity and residential hotspots have a greater influence on the allocation of commercial employment. Additionally, a new factor, vacant land, was created to address the fact that new development will gravitate toward greenfield over brownfield, all else being equal. The changes are summarized in Table 1.

Table 1. Suitability Analysis Criteria Weighting Changes

Criteria	Residential	Commercial	Industrial
Access and Infrastructure			
Expressway access (old)			5
Expressway access (new)			9
Market			
Population proximity (old)		7	
Population proximity (new)		10	
Growth hotspot (residential) (old)		0	
Growth hotspot (residential) (new)		10	
Vacant land (new criteria)		5	10

Note: Factors are weighted on a scale of 1 (least) to 10 (greatest).

3.6 Allocation

3.6.1 Countywide Control Totals

As part of this project, a market reality check was prepared for the Trend Plus, Belt & Boulevard and TOD Scenarios to critically evaluate each one against historic market conditions. The findings of the reality check, which are documented in a separate report, revealed that non-residential floor area absorption rates are too aggressive across all scenarios. A number of changes were made in the Hybrid Scenario to address this issue, including changes to occupancy rates and land use mix. Most importantly, the countywide 2045 employment control total was reduced from 454,000 to 404,000.

3.6.2 Subregion Control Totals

The Trend Plus, Belt & Boulevard and Hybrid Scenarios allocate population and employment on a countywide basis. In this way, each polygon in the model essentially “competes” with every other polygon for growth allocation. One of the drawbacks of this approach is that certain areas with high suitability scores and significant capacity, such as downtown Tampa, have the tendency to capture the lion’s share of growth (in this case, employment).

To address this issue, CommunityViz includes an option to allocate growth to smaller geographic areas, referred to as subregions. Each subregion has its own set of control totals, which provides greater geographic control over the allocation process and avoids the issue of one location absorption a disproportionate share of growth. A subregion allocation approach was chosen for the Hybrid Scenario. Geographic subregions for the Hybrid Scenario are shown in Figure 13, while the subregion control totals are shown in Table 2.

Figure 13. Hybrid Scenario Subregions

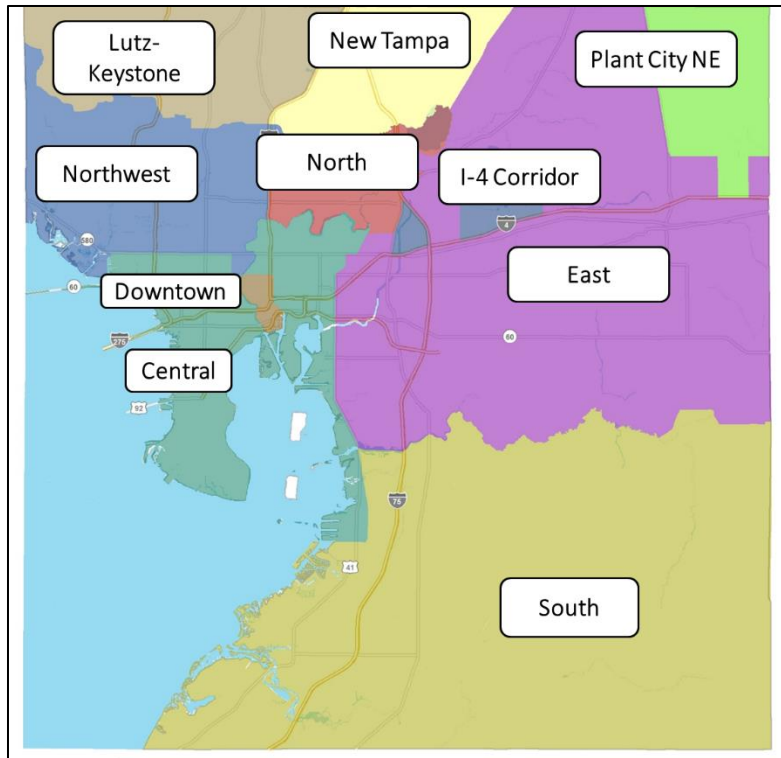


Table 2. Hybrid Scenario Subregion Control Totals

Subregion	Residential	Commercial	Industrial
North	24,000	10,700	1,800
Northwest	71,800	35,800	2,200
East	192,500	71,500	33,200
South	181,200	37,600	4,400
Central	98,800	94,100	2,700
New Tampa	20,800	6,800	0
Lutz Keystone	13,500	4,600	0
Downtown	56,100	75,100	0
Plant City NE	29,800	10,700	0
I-4 Corridor	21,900	10,700	0
	710,400	357,600	44,300

3.7 Post-Process TAZ Revisions

The Hybrid Scenario allocation output is aggregated from the land use model (LUM) polygon level to the traffic analysis zone (TAZ) level so that the output can be used in the Tampa Bay Regional Planning Model. The aggregated Hybrid Scenario 2045 TAZ data was manually adjusted by FDOT to replicate anticipated on the ground conditions.

To ensure the Hybrid Scenario LUM polygon data is consistent with the manually adjusted TAZ data, and number of post-process calculations were made. A summary of the post-process methodology is provided in Table 3.

Table 3. TAZ Post-Process Methodology

TAZ Attribute	LUM Polygon Attribute	Method
Household Population	Single Family Population	Allocated proportionate to the original polygon distribution of population.
	Multi-family Population	
Group Quarters Population	Multi-family Population	Allocated proportionate to the original polygon distribution of multi-family population.
Commercial Employment	Commercial Employment	Allocated proportionate to the original polygon distribution of commercial employment.
Service Employment	Office Employment	Allocated proportionate to the original polygon distribution of office and institutional employment.
	Institutional Employment	
Industrial Employment	Industrial Employment	Allocated proportionate to the original polygon distribution of industrial employment.

3.8 Interim Years

There are many planning functions within Hillsborough County and the TBRPM that make use of interim year population and employment data. The TAZ level output of the Hybrid Scenario was allocated to interim years, including 2025, 2030, 2035 and 2040.

Population, employment and dwelling units are allocated to interim years using interim year countywide population projections from the Bureau of Economic and Business Research (BEBR), data on recent building permit activity and the polygon suitability scores. Growth is allocated in the following order of priority:

1. "Pipeline" (permitted) development: Model polygons with active residential and non-residential building permits are allocated growth first.
2. Greenfield development within the Urban Service Area (USA): Polygons with greenfield development and that are located within the USA are allocated growth second.
3. Redevelopment within the USA: Polygons with growth attributed to redevelopment are allocated growth third.
4. Development outside of the USA: Polygons located outside of the USA are allocated growth last.

The process allocates growth in a stepwise fashion for each interim year using the order above until that year's control total has been met. Thus, polygons with significant pipeline development, those that are located within the USA and have greenfield development will be allocated in the earlier interim years, while polygons with redevelopment and that are located outside of the USA will be allocated in later interim years. Additional detail on the interim year allocation process is provided in the Appendix.

Appendix

Appendix Table 1. Placetype Definitions

Characteristic	Units	Park and Ride Suburban Residential	Employment Center	Neighbor- hood Center - Suburban	Neighbor- hood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighbor- hood	Community Center Suburban Infill
Land Use											
MF residential	%	6	9	32	44	32	44	41	44	32	29
SF residential	%	41	0	11	5	11	5	0	0	20	23
Commercial	%	13	35	16	20	16	20	22	20	11	8
Office	%	6	20	11	10	11	10	13	10	9	8
Industrial	%	0	10	0	0	0	0	5	0	0	0
Civic/inst.	%	4	10	5	5	5	5	5	7	5	5
Park/openspace	%	13	7	10	5	10	5	4	5	8	10
ROW/infrastructure	%	17	9	15	11	15	11	10	14	16	18
		100	100	100	100	100	100	100	100	100	100
Building Characteristics											
MF residential	Units per acre	16	0	32	64	48	96	140	300	72	33
SF residential	Units per acre	4	0	5	6	5	6	0	0	6.5	4.75
Commercial	Floor area ratio	0.25	0.75	0.75	1	0.75	1	1.5	2	0.75	0.5
Office	Floor area ratio	0.5	2	1	2	1.5	3	6	10	2	1.5
Industrial	Floor area ratio	0	0.75	0	0	0	0	1	0	0	0
Civic/inst.	Floor area ratio	0.5	1.25	0.5	0.5	0.4	1	2	2	0.6	0.3
Average living area											
MF residential	Square feet	1600	1500	1600	1410	1600	1410	1410	1300	1410	1600
SF residential	Square feet	2600	0	2600	2200	2600	2200	0	0	2200	2600
Occupancy rates											
MF residential	Persons per dwelling unit	2.3	0	2.3	1.9	2.3	1.9	1.7	1.7	2.05	2.3
SF residential	Persons per dwelling unit	2.5	0	2.4	2.3	2.5	2.3	0	0	2.3	2.5
Commercial	Employees per 1,000 sq ft	2.2	2.4	2.2	2.2	2	2.2	2.4	2.4	2.2	2.1
Office	Employees per 1,000 sq ft	5	7	6	6	6	6	7	7	6	6
Industrial	Employees per 1,000 sq ft	0	1.5	0	0	0	0	1.2	0	0	0
Civic/inst.	Employees per 1,000 sq ft	0.9	1	0.9	0.9	0.8	0.9	1.1	3	1	0.8
Average Building height											
MF residential	Stories	3	0	3	5	4	6	10	20	5	3
SF residential	Stories	1.5	0	1.5	1.25	1.5	1.25	0	0	1.25	1.5
Commercial	Stories	1	1.1	1.25	1.25	1.2	1.25	1.5	1.6	1.25	1
Office	Stories	2	6	3	5	4.5	8	14	28	9	2
Industrial	Stories	0	1.2	0	0	0	0	0	0	0	0
Civic/inst.	Stories	1.5	4	1.5	2	1	2	4	6	2	1
Parking rate											
MF residential	Spaces per DU	1.75	2	1.75	1.25	1.75	1.25	1.25	1	1.25	1.75
SF residential	Spaces per DU	2.2	2	2.2	2	2.2	2	2	0	2	2.2
Commercial	Spaces per 000 sf	6	4	5	3	5	3	3	1	3	6
Office	Spaces per 000 sf	6	4.5	4	4	4	4	4	2.75	4	6
Industrial	Spaces per 000 sf	0	1.2	0	0	0	0	0	0	0	0
Civic/inst.	Spaces per 000 sf	3.5	3	3.5	3	3.5	3	3	2.5	3	3.5
Parking size (inc. access)											
MF residential	Sq ft per space	325	325	325	300	325	300	300	300	300	325
SF residential	Sq ft per space	325	325	325	300	325	300	300	300	300	325
Commercial	Sq ft per space	325	325	325	300	325	300	300	300	300	325
Office	Sq ft per space	325	325	325	300	325	300	300	300	300	325
Industrial	Sq ft per space	0	450	0	0	0	0	0	0	0	0

Characteristic	Units	Park and Ride Suburban Residential	Employment Center	Neighborhood Center - Suburban	Neighborhood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighborhood	Community Center Suburban Infill
Civic/inst.	Sq ft per space	350	350	350	325	350	325	325	325	325	350
Average parking height											
MF residential	Stories	1.25	3	1.25	2	1.5	3	4	6	1.5	1.25
SF residential	Stories	1	1	1	1	1	1	1	1	1	1
Commercial	Stories	1	3.5	2	3	1.5	3	5	14	3	1
Office	Stories	1.5	4.5	2.5	4.5	3	5	8	14	4.5	1.5
Industrial	Stories	1	2	1	1	1	1	1	1	1	1
Civic/inst.	Stories	1	2	1	2	1	2	4	4	2	1
Trip generation rates (base)											
MF residential	Auto trip prod. per DU per day	5.9	4.9	5.9	4.4	5.9	4.4	4.4	3.5	4.4	5.9
MF residential	Non-auto trip prod. DU per day	1.2	0.7	1.2	0.9	1.2	0.9	0.9	0.9	0.9	1.2
SF residential	Auto trip prod. per DU per day	8.8	7.8	8.8	7.8	8.8	7.8	7.8	0.0	7.8	8.8
SF residential	Non-auto trip prod. DU per day	1.8	1.2	1.8	1.6	1.8	1.6	1.6	0.0	1.6	1.8
Commercial	Auto trip attr. per emp day	32.7	32.7	32.7	19.5	32.7	19.5	19.5	15.6	19.5	32.7
Commercial	Non-auto trip attr. per emp day	6.5	4.9	6.5	3.9	6.5	3.9	3.9	3.9	3.9	6.5
Office	Auto trip attr. per emp day	3.7	3.7	3.7	3.3	3.7	3.3	3.3	2.9	3.3	3.7
Office	Non-auto trip attr. per emp day	0.9	1.1	0.9	1.2	0.9	1.2	1.2	1.5	1.2	0.9
Industrial	Auto trip attr. per emp day	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	Non-auto trip attr. per emp day	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Civic/inst.	Auto trip attr. per emp day	17.2	12.5	17.2	12.8	17.2	12.8	12.8	8.9	12.8	17.2
Civic/inst.	Non-auto trip attr. per emp day	2.6	3.8	2.6	4.5	2.6	4.5	4.5	4.5	4.5	2.6
Water consumption/wastewater generation rate											
Mid/high res. (> 4 dua)	Gallons per day per DU	250	250	250	225	250	225	225	225	225	250
Low res. (<4 dua)	Gallons per day per DU	350	350	350	325	350	325	325	325	325	350
Commercial	Gallons per day per 1000 sq ft	150	150	150	150	150	150	150	150	150	150
Office	Gallons per day per employee	20	20	20	20	20	20	20	20	20	20
Industrial (low)	Gallons per day per employee	25	25	25	25	25	25	25	25	25	25
Industrial (high)	Gallons per day per acre	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Civic/inst.	Gallons per day per person	12	12	12	12	12	12	12	12	12	12
Solid waste generation rates											
MF residential	Pounds per day per DU	5	5	5	5	5	5	5	5	5	5
SF residential	Pounds per day per DU	9	9	9	9	9	9	9	9	9	9
Commercial	Pounds per day per 1000 sq ft	12	12	12	12	12	12	12	12	12	12
Office	Pounds per day per 1000 sq ft	8	8	8	8	8	8	8	8	8	8
Industrial (light)	Pounds per day per employee	0	40	0	0	0	0	0	0	0	0
Industrial (high)	Pounds per day per 1000 sq ft	0	70	0	0	0	0	0	0	0	0
Civic/inst.	Pounds per day per employee	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Other											
Intersection density	Four-way intersections per square mile	100	120	100	240	100	240	240	240	240	100
Average block size	Acres	12	10	12	3.8	12	3.8	3.8	3.8	3.8	12
Sidewalk coverage (streets)	Percent	40%	60%	40%	85%	40%	85%	85%	95%	85%	40%
Street Coverage ¹	Lane miles per square mile	29.2	32.0	29.2	51.9	29.2	51.9	51.9	51.9	51.9	29.2
Water/sewer Coverage ²	Linear feet per square mile	44068	48274	44068	109636	44068	109636	109636	109636	109636	44068
Average number of lanes		3.5	3.5	3.5	2.5	3.5	2.5	2.5	2.5	2.5	3.5

Appendix Table 2. Hybrid Scenario Placetype Modification (Part 1)

Characteristic	Units	Agriculture / Mining	Rural Estate	Suburban Residential	Suburban Mixed Use Center / Corridor	Suburban Mixed Use / Residential	Senior Living Community	Suburban Infill	Suburban Office Campus	In-Town Neighborhood	Mixed Use Urban Infill	Mixed Use Infill / In-Town Neighborhood	Traditional Downtown	Downtown Tampa	University Activity Center	Port Activity Center	Warehouse / Distribution / Manufacturing
Land Use																	
MF residential	%	0%	0%	-2%	-3%	-3%	0%	-10%	0%	-1%	-5%	0%	0%	0%	-3%	0%	0%
SF residential	%	0%	0%	-2%	-1%	-2%	0%	-3%	0%	-1%	0%	-4%	-2%	0%	0%	0%	0%
Commercial	%	0%	-4%	5%	9%	4%	10%	6%	-12%	5%	10%	7%	10%	3%	6%	5%	5%
Office	%	0%	0%	0%	-12%	0%	-3%	0%	5%	-1%	-11%	-4%	-11%	-9%	-9%	-1%	-6%
Industrial	%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-2%	-5%	-3%
Civic/inst.	%	1%	0%	5%	6%	6%	0%	7%	0%	2%	7%	3%	2%	8%	8%	5%	4%
Park/openspace	%	1%	2%	-6%	1%	-5%	-7%	0%	5%	-2%	0%	-1%	5%	2%	1%	-4%	-1%
ROW/infrastructure	%	0%	2%	0%	0%	0%	0%	0%	2%	-2%	-1%	-2%	-5%	-5%	1%	0%	0%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	0%	0%
Building Characteristics																	
MF residential	Units per acre	0.0	0.0	4.0	4.0	7.0	0.0	10.0	0.0	0.0	2.0	1.0	0.0	0.0	6.0	0.0	0.0
SF residential	Units per acre	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial	Floor area ratio	0.0	-0.1	0.1	0.1	0.1	0.0	0.1	-0.6	0.2	0.0	0.1	0.0	0.5	0.1	0.1	0.0
Office	Floor area ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.2	0.1	0.0	0.0	0.0	-0.5	0.0	0.1	0.0
Industrial	Floor area ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Civic/inst.	Floor area ratio	0.0	0.0	0.1	0.1	0.1	0.0	0.1	-1.4	0.4	0.2	0.3	0.3	1.0	0.1	0.1	0.1
Average living area																	
MF residential	Square feet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SF residential	Square feet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Occupancy rates																	
MF residential	Persons per dwelling unit	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
SF residential	Persons per dwelling unit	0.0	0.0	0.2	0.4	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial	Employees per 1,000 sq ft	0.0	0.7	0.6	0.6	1.0	1.0	0.3	0.8	0.6	0.6	0.6	0.7	0.6	0.7	0.6	0.6
Office	Employees per 1,000 sq ft	0.0	0.0	0.0	0.3	0.3	0.3	0.0	0.6	0.3	0.3	0.3	0.3	0.2	0.2	-0.6	0.2
Industrial	Employees per 1,000 sq ft	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.1
Civic/inst.	Employees per 1,000 sq ft	0.6	0.6	0.9	0.9	0.9	0.0	0.9	1.1	0.9	0.6	0.7	0.9	0.6	1.2	2.6	0.7
Average Building height																	
MF residential	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Characteristic	Units	Agriculture / Mining	Rural Estate	Suburban Residential	Suburban Mixed Use Center / Corridor	Suburban Mixed Use / Residential	Senior Living Community	Suburban Infill	Suburban Office Campus	In-Town Neighborhood	Mixed Use Urban Infill	Mixed Use Infill / In-Town Neighborhood	Traditional Downtown	Downtown Tampa	University Activity Center	Port Activity Center	Warehouse / Distribution / Manufacturing
SF residential	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Office	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Civic/inst.	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking rate																	
MF residential	Spaces per DU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SF residential	Spaces per DU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Commercial	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Office	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Civic/inst.	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Parking size (inc. access)																	
MF residential	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SF residential	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civic/inst.	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average parking height																	
MF residential	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SF residential	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Stories	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Industrial	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civic/inst.	Stories	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Trip generation rates (base)																	
MF residential	Auto trip prod. per DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MF residential	Non-auto trip prod. DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SF residential	Auto trip prod. per DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Characteristic	Units	Agriculture / Mining	Rural Estate	Suburban Residential	Suburban Mixed Use Center / Corridor	Suburban Mixed Use / Residential	Senior Living Community	Suburban Infill	Suburban Office Campus	In-Town Neighborhood	Mixed Use Urban Infill	Mixed Use Infill / In-Town Neighborhood	Traditional Downtown	Downtown Tampa	University Activity Center	Port Activity Center	Warehouse / Distribution / Manufacturing
SF residential	Non-auto trip prod. DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civic/inst.	Auto trip attr. per emp day	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
Civic/inst.	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water consumption/wastewater generation rate																	
Mid/high res. (> 4 dua)	Gallons per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Low res. (<4 dua)	Gallons per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Gallons per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Gallons per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial (low)	Gallons per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial (high)	Gallons per day per acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civic/inst.	Gallons per day per person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Solid waste generation rates																	
MF residential	Pounds per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SF residential	Pounds per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Office	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial (light)	Pounds per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Industrial (high)	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Civic/inst.	Pounds per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other																	
Intersection density	Four-way intersections per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Characteristic	Units	Agriculture / Mining	Rural Estate	Suburban Residential	Suburban Mixed Use Center / Corridor	Suburban Mixed Use / Residential	Senior Living Community	Suburban Infill	Suburban Office Campus	In-Town Neighborhood	Mixed Use Urban Infill	Mixed Use Infill / In-Town Neighborhood	Traditional Downtown	Downtown Tampa	University Activity Center	Port Activity Center	Warehouse / Distribution / Manufacturing
Average block size	Acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sidewalk coverage (streets)	Percent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Street Coverage ¹	Lane miles per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water/sewer Coverage ²	Linear feet per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average number of lanes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

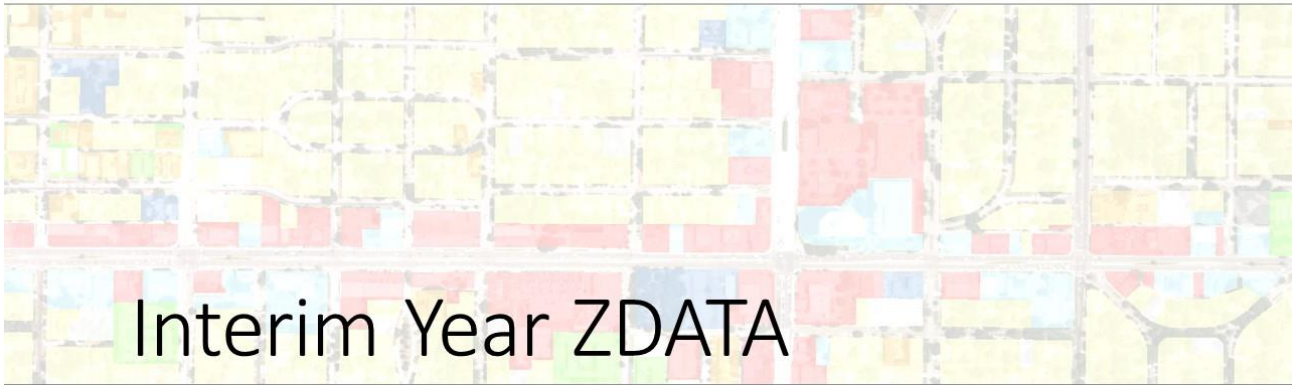
Appendix Table 3. Hybrid Scenario Placetype Changes (Part 2) and New Placetype Definitions

Characteristic	Units	Busch Gardens	University of South Florida	Tampa International Airport	MacDill AFB	Park and Ride Suburban Residential	Employment Center	Neighborhood Center - Suburban	Neighborhood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighborhood	Community Center Suburban Infill	Rural Residential Planned	Community Center
Land Use																	
MF residential	%	0%	0%	0%	0%	-1%	-4%	-2%	-9%	-2%	-6%	-8%	-4%	-1%	-4%	0%	30%
SF residential	%	0%	0%	0%	0%	-3%	0%	-1%	0%	0%	0%	0%	0%	-5%	-3%	48%	5%
Commercial	%	0%	4%	0%	0%	-3%	-15%	4%	-5%	-6%	-8%	-7%	-7%	2%	7%	1%	10%
Office	%	0%	-5%	0%	0%	-1%	6%	-6%	0%	-3%	-1%	3%	0%	-6%	-7%	1%	18%
Industrial	%	0%	0%	0%	0%	0%	-5%	0%	0%	0%	0%	-4%	0%	0%	0%	0%	5%
Civic/inst.	%	0%	15%	0%	0%	%	10%	7%	10%	11%	11%	8%	8%	10%	9%	1%	5%
Park/openspace	%	0%	-12%	0%	0%	-3%	0%	-2%	0%	-2%	0%	1%	0%	-2%	-2%	35%	10%
ROW/infrastructure	%	0%	-2%	0%	0%	3%	8%	0%	4%	3%	4%	7%	3%	2%	1%	14%	17%
		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
Building Characteristics																	
MF residential	Units per acre	0.0	0.0	0.0	0.0	4.0	28.0	4.0	0.0	0.0	0.0	0.0	0.0	12.0	9.0	0	30
SF residential	Units per acre	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	4	5
Commercial	Floor area ratio	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.8
Office	Floor area ratio	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.5	0.0	0.1	1
Industrial	Floor area ratio	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.7
Civic/inst.	Floor area ratio	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.0	0.5	0.5	0.4	0.5	0.1	0.4
Average living area																	
MF residential	Square feet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1500
SF residential	Square feet	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2700	2500
Occupancy rates																	
MF residential	Persons per dwelling unit	0.0	0.0	0.0	0.0	0.2	2.5	0.0	0.2	0.1	0.2	0.2	0.2	-0.2	0.0	0	2.3
SF residential	Persons per dwelling unit	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.0	2.7	2.5
Commercial	Employees per 1,000 sq ft	0.0	0.5	0.0	0.0	0.7	0.5	0.6	0.8	0.7	0.8	0.6	0.6	0.7	0.6	2.1	2.6
Office	Employees per 1,000 sq ft	0.0	0.3	0.0	0.0	0.2	0.0	0.3	0.5	0.3	0.5	0.2	0.2	0.5	0.3	4	6.3
Industrial	Employees per 1,000 sq ft	0.0	-0.2	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	-0.2	0.0	0.0	0.0	0	0
Civic/inst.	Employees per 1,000 sq ft	0.0	0.6	0.0	0.0	0.8	1.2	1.0	1.0	1.1	1.2	1.4	0.6	1.1	1.1	1.4	1.4
Average Building height																	
MF residential	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1	3

Characteristic	Units	Busch Gardens	University of South Florida	Tampa International Airport	MacDill AFB	Park and Ride Suburban Residential	Employment Center	Neighborhood Center - Suburban	Neighborhood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighborhood	Community Center Suburban Infill	Rural Residential Planned	Community Center
SF residential	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.5
Commercial	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1	1.25
Office	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	1	4
Industrial	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Civic/inst.	Stories	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	2.0	0.0	0.0	1.5	1	2.5
Parking rate																	
MF residential	Spaces per DU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	1.75
SF residential	Spaces per DU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.2
Commercial	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	6
Office	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6	6
Industrial	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	1.2
Civic/inst.	Spaces per 1,000 sf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	3.5
Parking size (inc. access)																	
MF residential	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325
SF residential	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	425	325
Commercial	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325	325
Office	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	325	325
Industrial	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	450
Civic/inst.	Sq ft per space	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	350
Average parking height																	
MF residential	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1.25
SF residential	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Commercial	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Office	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Industrial	Stories	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Civic/inst.	Stories	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1.5
Trip generation rates (base)																	
MF residential	Auto trip prod. per DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	5.9
MF residential	Non-auto trip prod. DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.2
SF residential	Auto trip prod. per DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.0	8.8

Characteristic	Units	Busch Gardens	University of South Florida	Tampa International Airport	MacDill AFB	Park and Ride Suburban Residential	Employment Center	Neighborhood Center - Suburban	Neighborhood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighborhood	Community Center Suburban Infill	Rural Residential Planned	Community Center
SF residential	Non-auto trip prod. DU per day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1.8
Commercial	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.7	32.7
Commercial	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	6.5
Office	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.7	3.7
Office	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.9
Industrial	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0.0	1.6
Industrial	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Civic/inst.	Auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.0	17.2
Civic/inst.	Non-auto trip attr. per emp day	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	2.6
Water consumption/wastewater generation rate																	
Mid/high res. (> 4 dua)	Gallons per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	250	250
Low res. (<4 dua)	Gallons per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	350	350
Commercial	Gallons per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	150	150
Office	Gallons per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	20
Industrial (low)	Gallons per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25
Industrial (high)	Gallons per day per acre	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1000	1000
Civic/inst.	Gallons per day per person	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Solid waste generation rates																	
MF residential	Pounds per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5
SF residential	Pounds per day per DU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
Commercial	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	12
Office	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Industrial (light)	Pounds per day per employee	0	0	0	0	0	0	0	0	0	0	40	0	0	0	0	40
Industrial (high)	Pounds per day per 1000 sq ft	0	0	0	0	0	0	0	0	0	0	70	0	0	0	0	70
Civic/inst.	Pounds per day per employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	2.5
Other																	
Intersection density	Four-way intersections per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	100
Average block size	Acres	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	12

Characteristic	Units	Busch Gardens	University of South Florida	Tampa International Airport	MacDill AFB	Park and Ride Suburban Residential	Employment Center	Neighborhood Center - Suburban	Neighborhood Center - Urban	Community Center - Suburban	Community Center - Urban	MU Regional - Urban	High Intensity Center	Community Center Urban In-Town Neighborhood	Community Center Suburban Infill	Rural Residential Planned	Community Center
Sidewalk coverage (streets)	Percent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20%	40%
Street Coverage ¹	Lane miles per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.9	29.2
Water/sewer Coverage ²	Linear feet per square mile	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35620	44068
Average number of lanes		0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	3.5

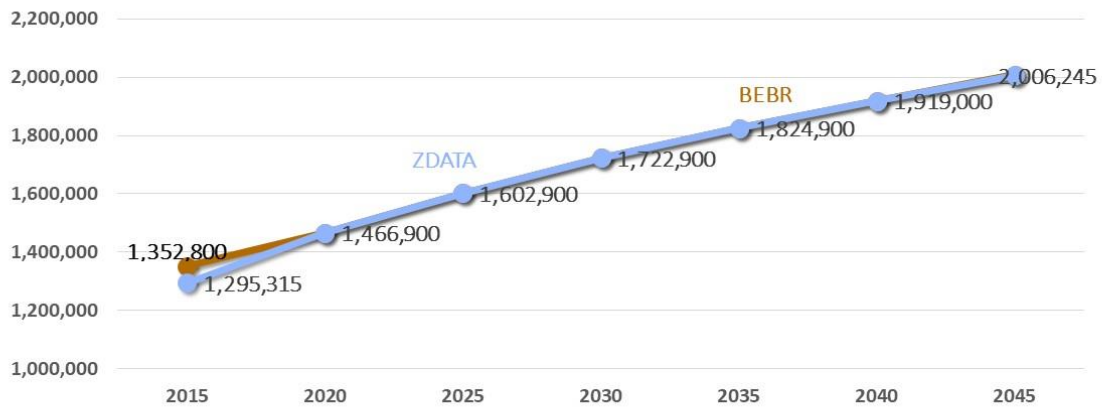


Interim Year ZDATA

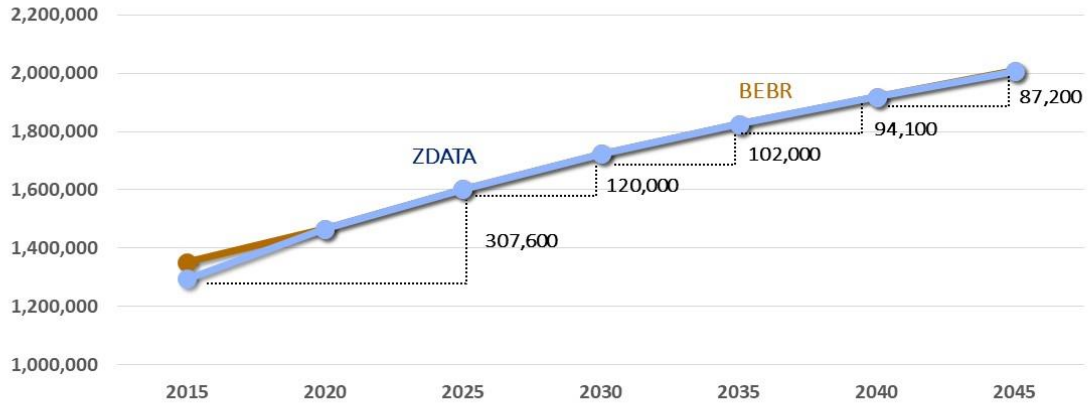
APRIL 16TH, 2019 UPDATE



Population Projections



Population Projections: Allocating the increment



Allocation factors

- 2015 and 2045 ZDATA
- 2017 and 2018 building permit data
- Suitability score
- Greenfield development
- Redevelopment
- Urban Service Area

Allocation priority

1. "Pipeline" development
2. Greenfield development within the USA
3. Redevelopment within the USA
4. Development outside of the USA



2045 Population and Job Growth

Pipeline development

- 2017 and 2018 building permit data
- Total number of new units
- 25,400 new units = 49,300 population
- Assumed to happen by 2025



2045 Population and Job Growth

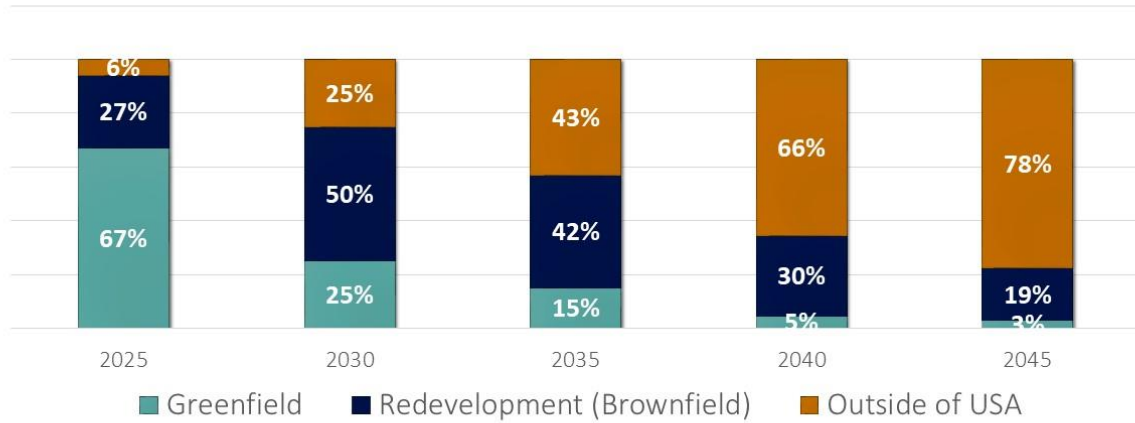
2015-2025 Growth Outside of USA

- Pipeline development
- RP-2 Area
- Plant City

Population growth breakdown

Development Type	Pipeline Growth (2015-45)	Remaining Growth (2015-45)
Greenfield	29,683	258,232
Redevelopment	14,268	230,964
Outside of USA	5,375	221,734

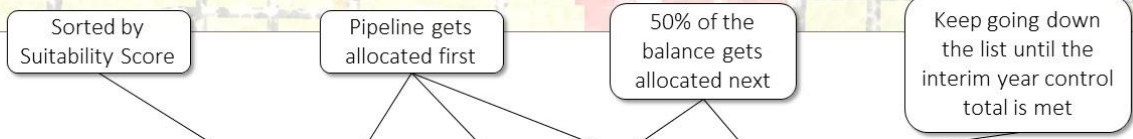
Allocation distribution: 2015-45 Population Growth



Allocation distribution: 2015-45 Population Growth



Population allocation process: 2015-2025



TAZ	Suitability Score	Pipeline Dev.	2045 Total	To be Allocated	2015-25 Allocation	Running Total
609	100	0	50	50	25	25
625	99	0	75	75	38	63
607	97	25	55	30	15	78
610	95	30	1,793	1,763	882	960
611	95	0	524	524	262	1,222
608	94	0	646	646	323	1,545

Population allocation process: 2025-30 (-35; -40)



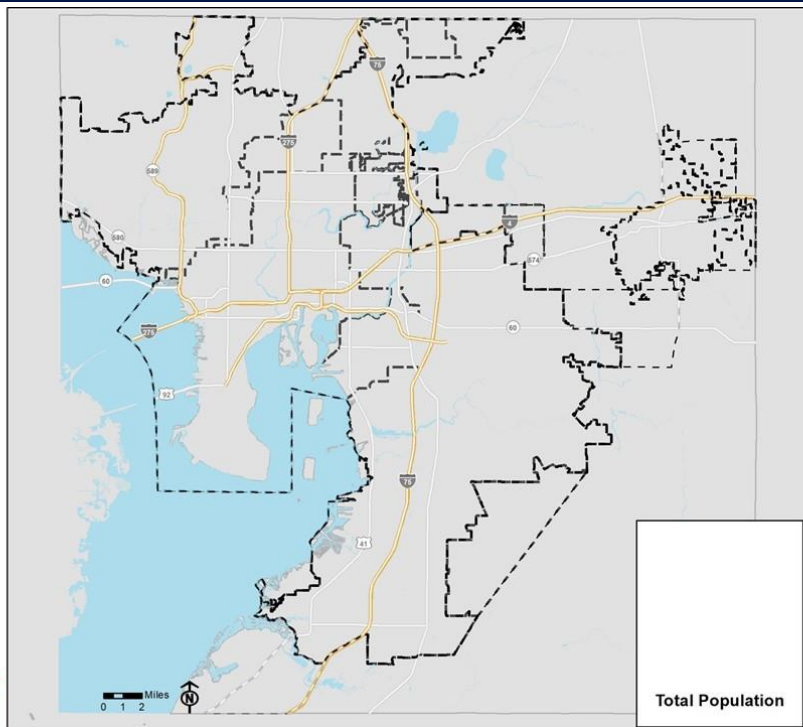
TAZ	Suitability Score	2045 Total	Pipeline Dev.	2015-25 Allocation	To be Allocated	2025-30 Allocation	Running Total
609	100	50	0	25	25	13	13
625	99	75	0	38	37	19	32
607	97	55	25	15	15	8	40
610	95	1,793	30	882	881	441	481
611	95	524	0	262	262	131	612
608	94	646	0	323	323	162	774

Allocation process

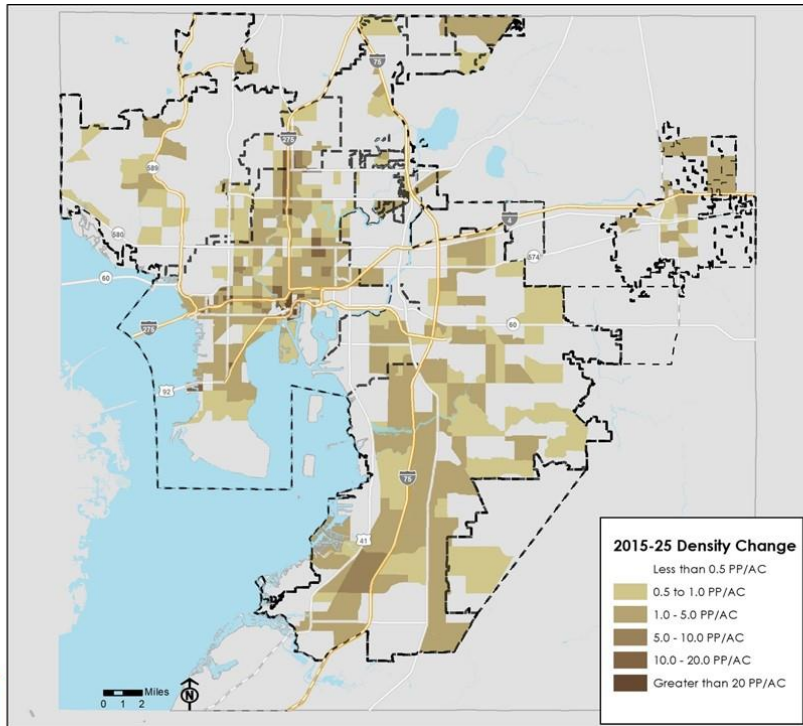
- Separate allocations for Greenfield, Redevelopment and Outside of USA
- 2040-45 allocation is balance of total after Pipeline, 2015-25-30-35-40 allocations



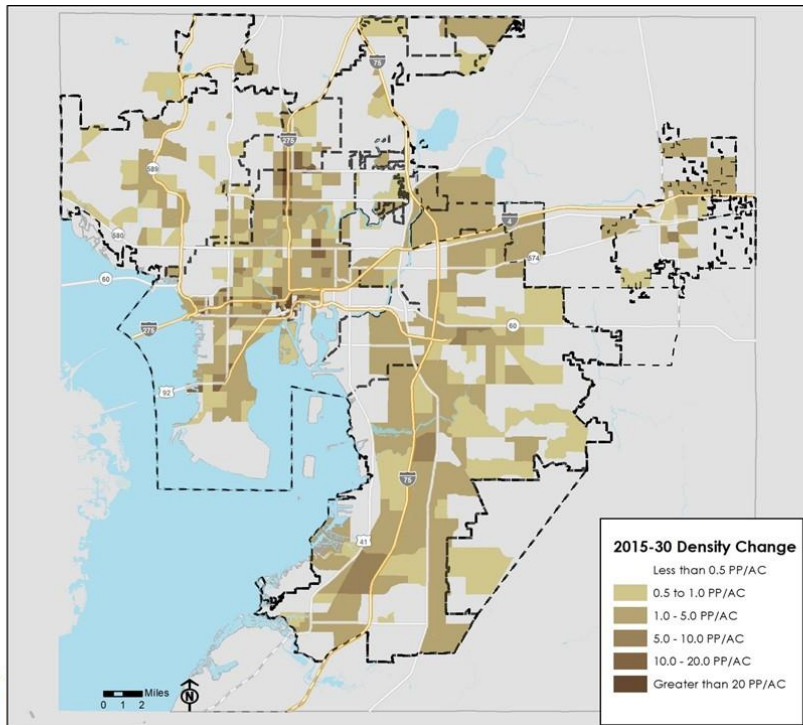
2045 Population and Job Growth



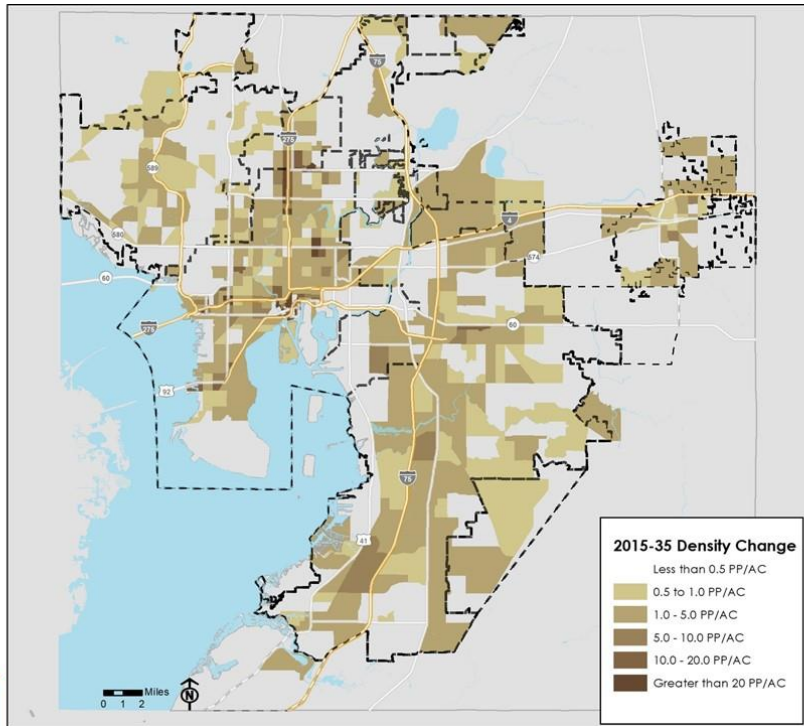
2015-2025 Change
÷
Total Area (acres)



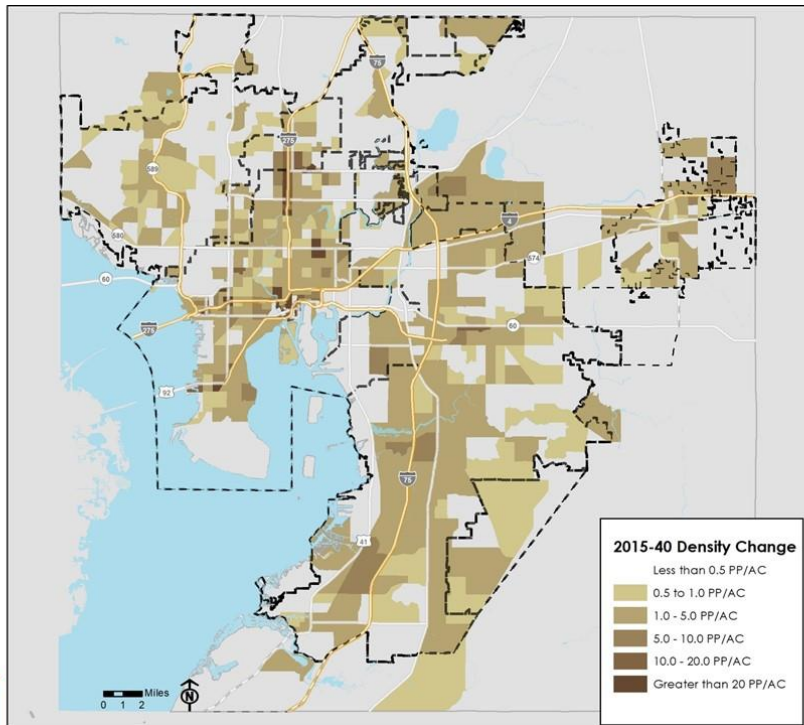
2015-2030 Change
÷
Total Area (acres)



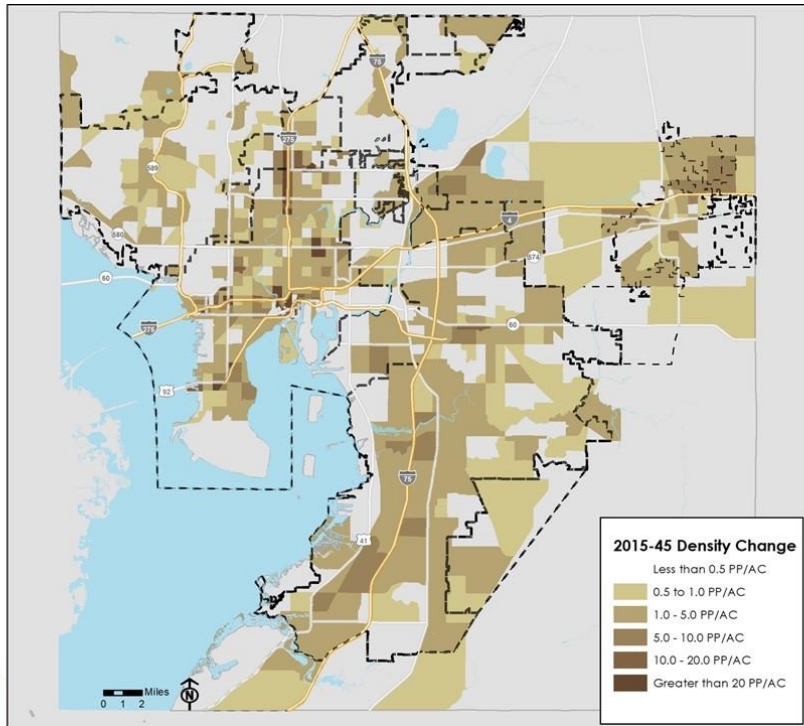
2015-2035 Change
÷
Total Area (acres)



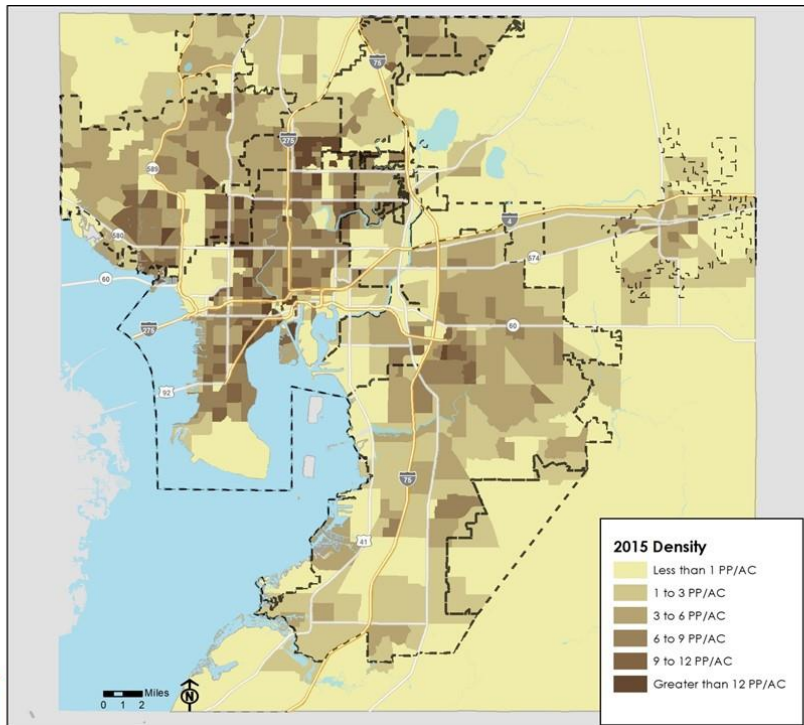
2015-2040 Change
÷
Total Area (acres)



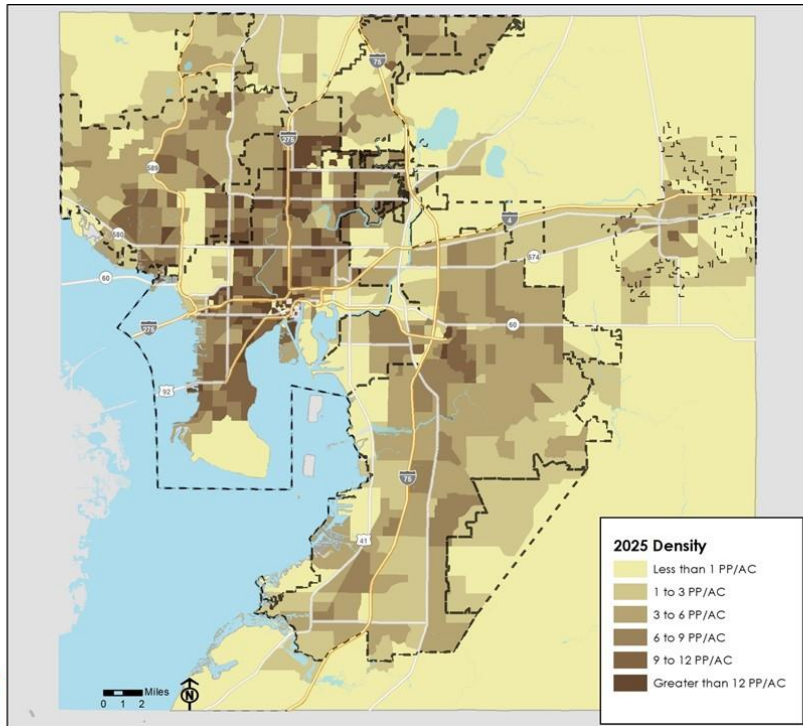
2015-2045 Change
 ÷
 Total Area (acres)



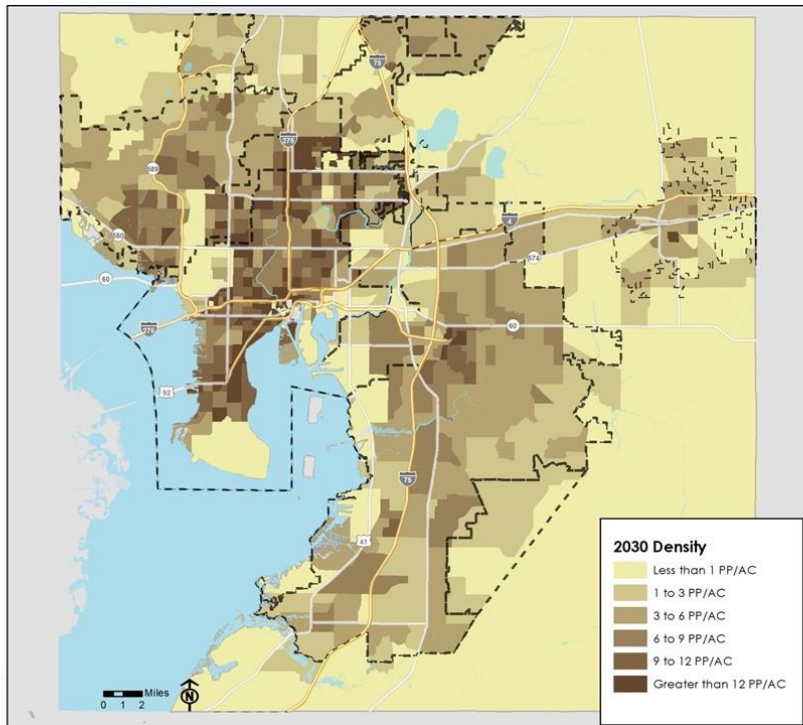
Total 2015 Population
 ÷
 Total Area (acres)



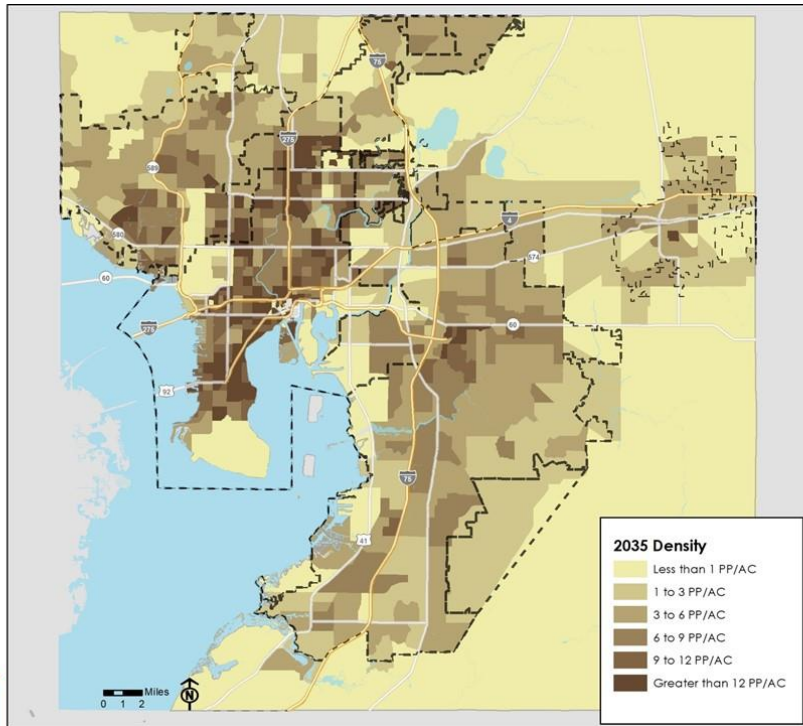
Total 2025 Population
÷
Total Area (acres)



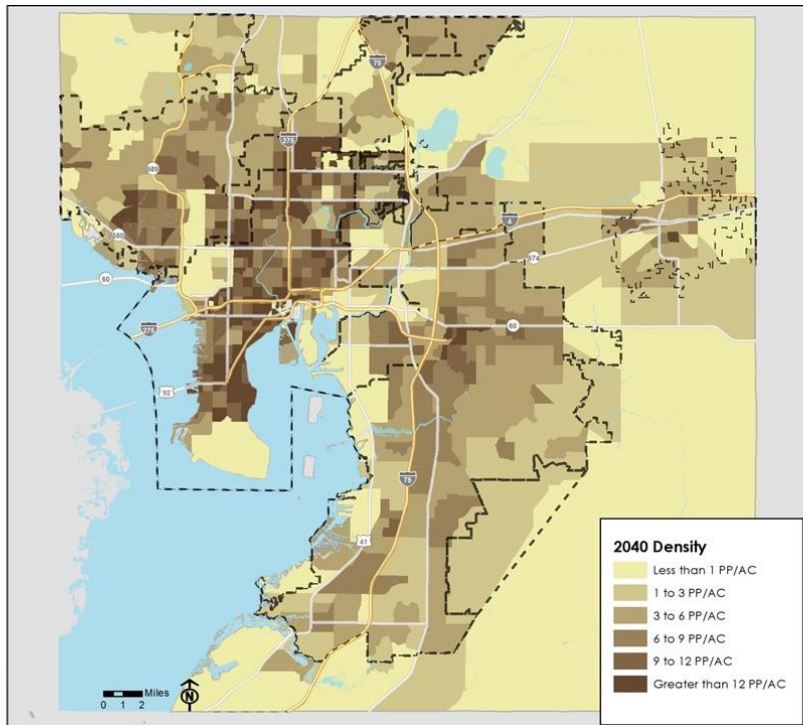
Total 2030 Population
÷
Total Area (acres)



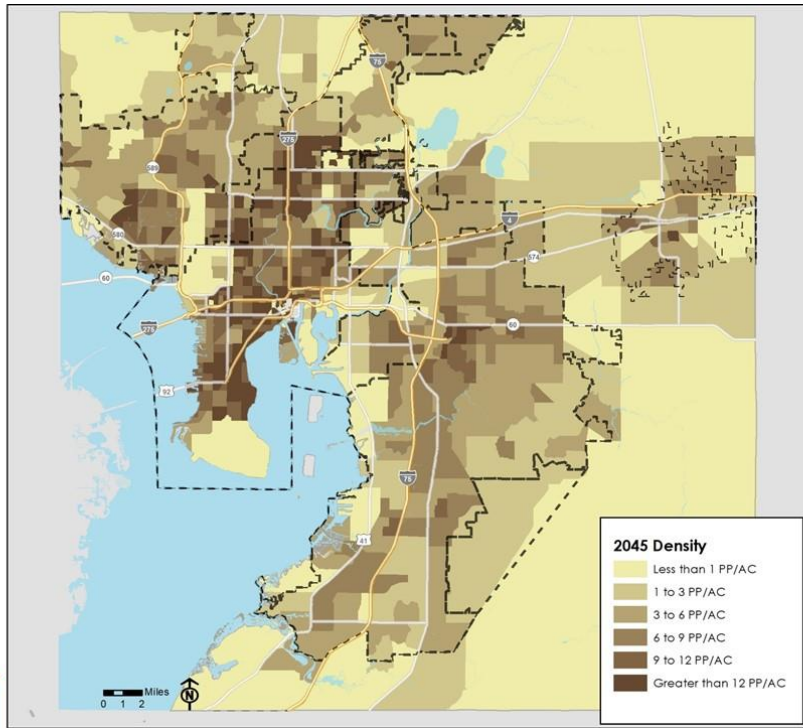
Total 2035 Population
÷
Total Area (acres)



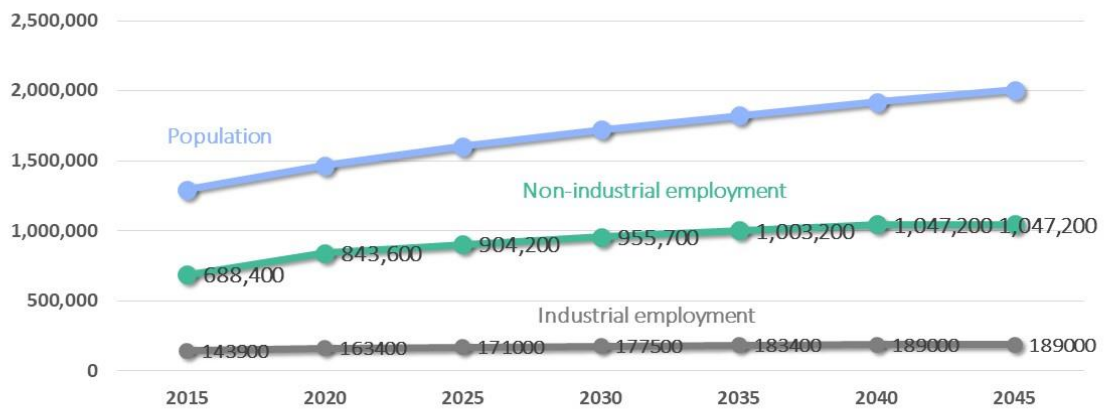
Total 2040 Population
÷
Total Area (acres)



Total 2045 Population
 ÷
 Total Area (acres)



Interim year employment



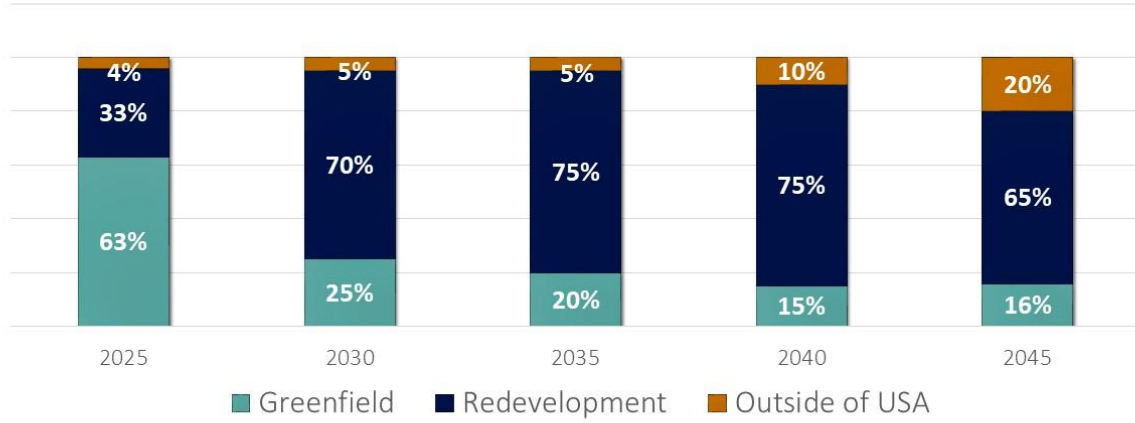
Interim year employment

- Same methodology as population
- Separate allocation for industrial and non-industrial (commercial, service)

Employment growth breakdown

Development Type	Pipeline Employment Growth (2015-2045 Change)		Remaining Employment Growth (2015-2045 Change)	
	Non-Industrial	Industrial	Non-Industrial	Industrial
Greenfield	5,400	380	137,300	18,800
Redevelopment	3,800	250	196,300	12,300
Outside of USA	5,400	210	25,200	14,000

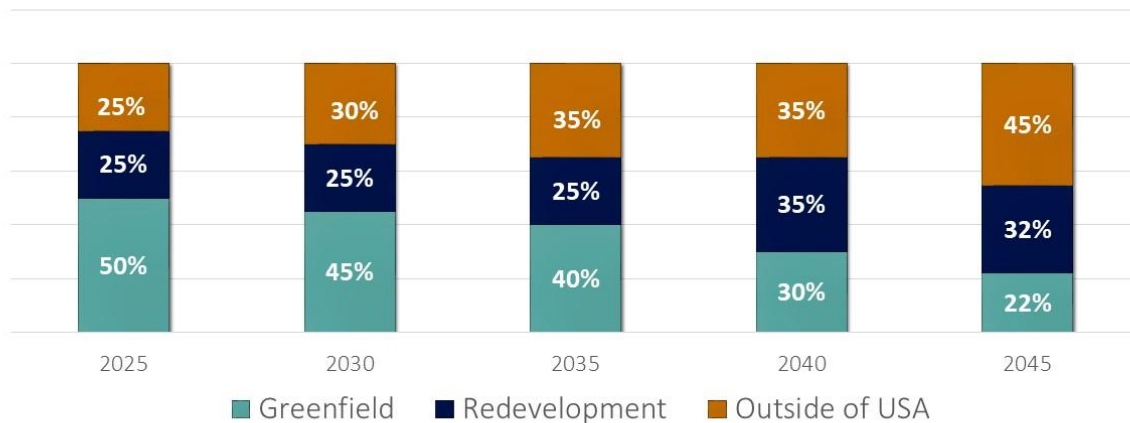
Allocation distribution: 2015-45 Non-industrial Employment Growth



Allocation distribution: 2015-45 Non-industrial Employment Growth

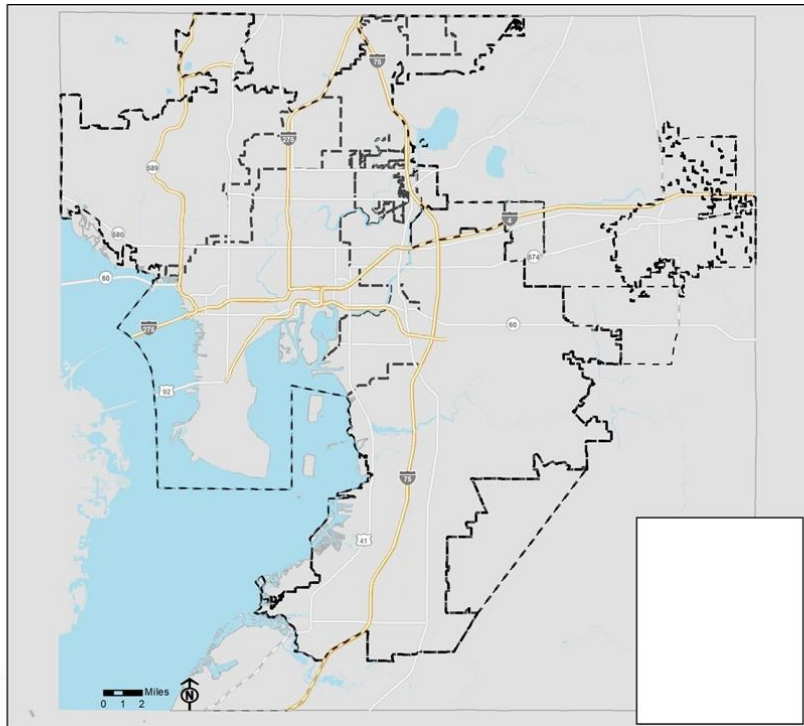


Allocation distribution: 2015-45 Non-industrial Employment Growth

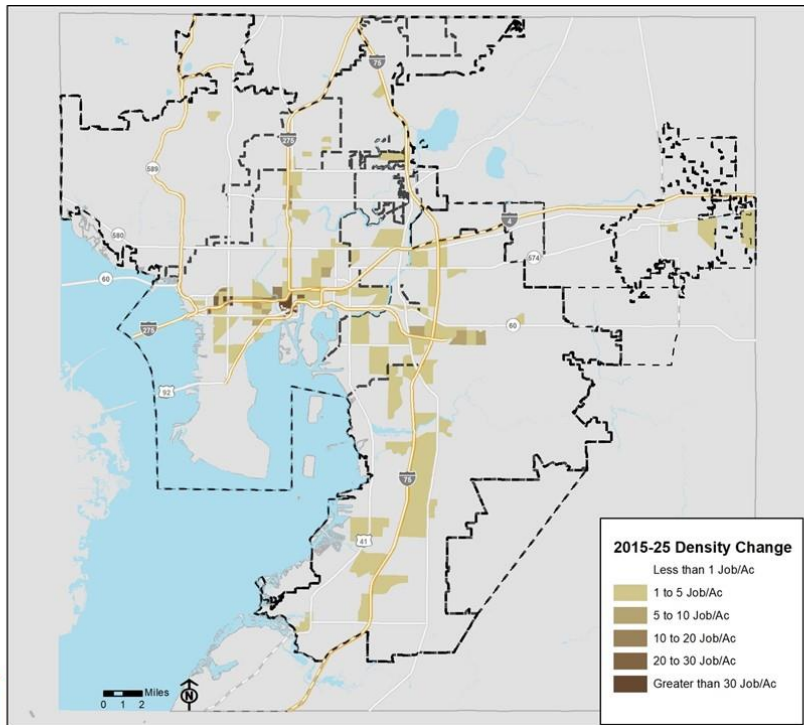


Allocation distribution: 2015-45 Non-industrial Employment Growth

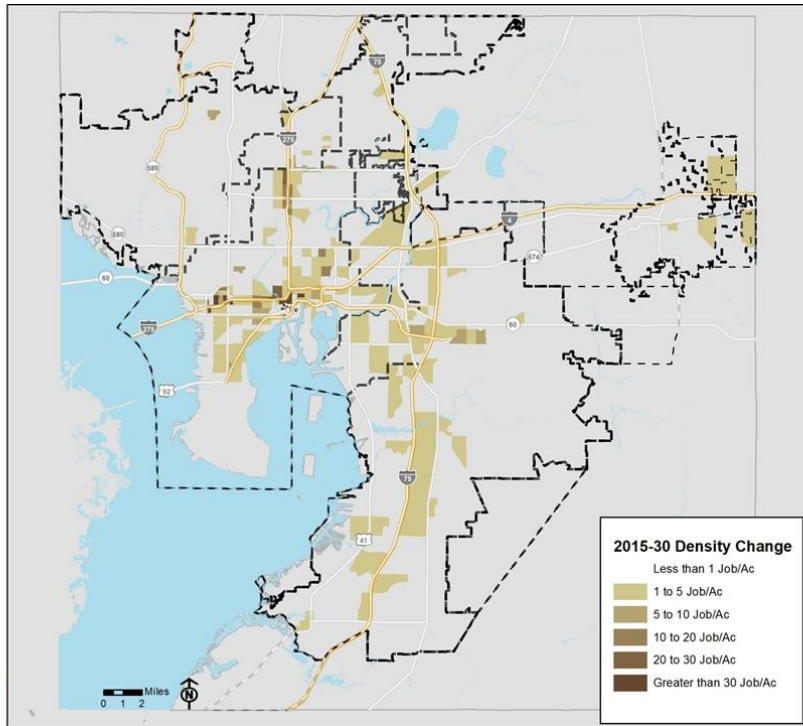




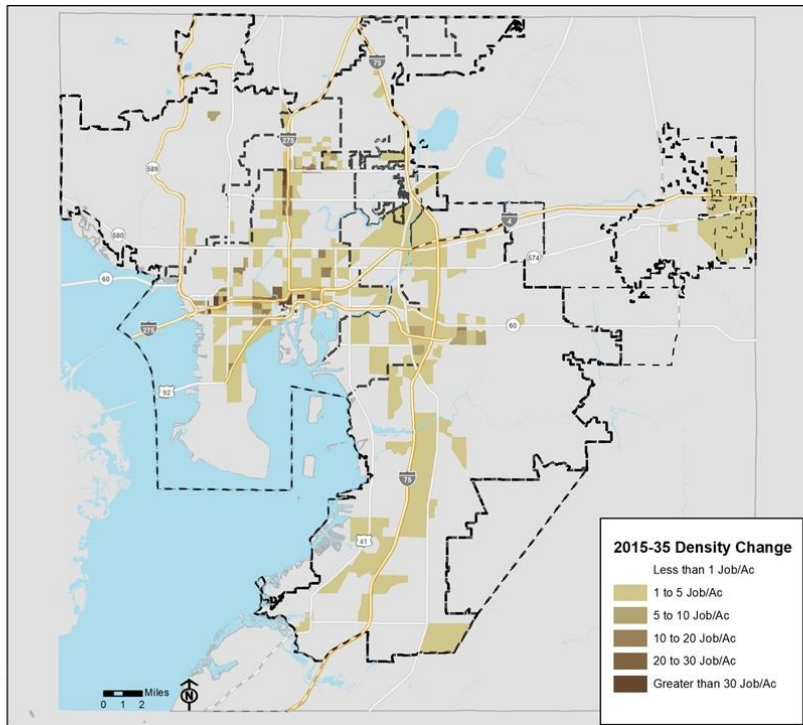
2015-2025 Change
÷
Total Area (acres)



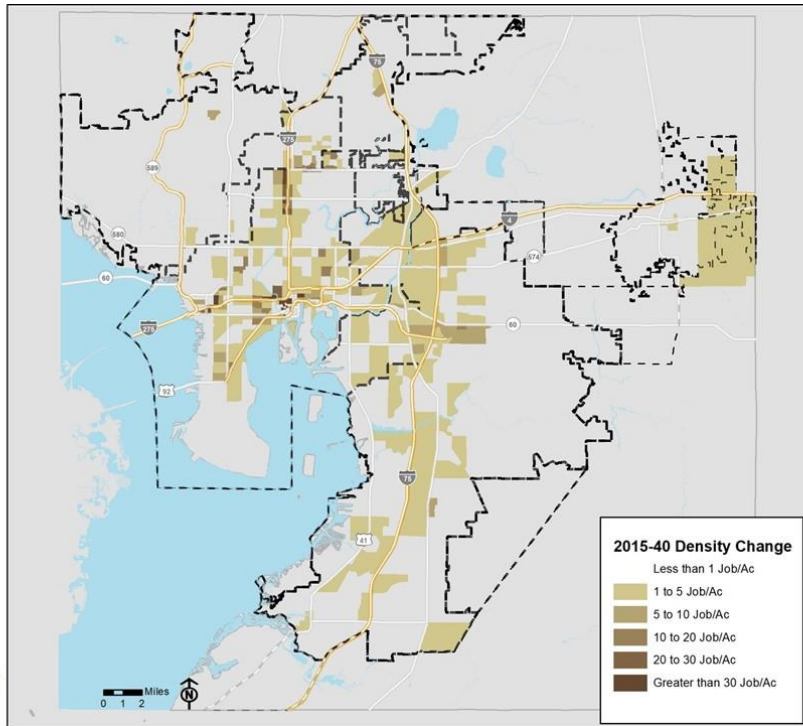
2015-2030 Change
÷
Total Area (acres)



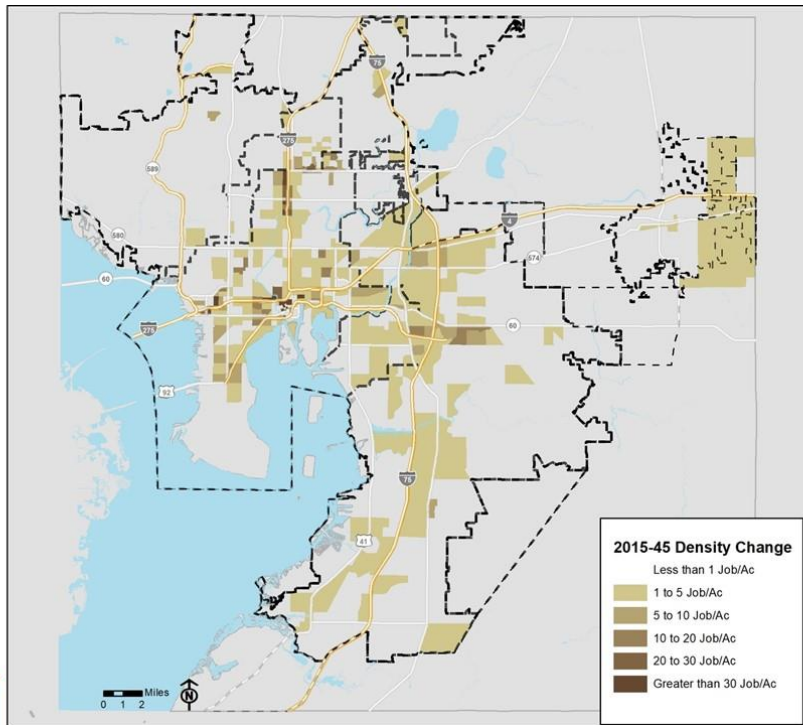
2015-2035 Change
÷
Total Area (acres)



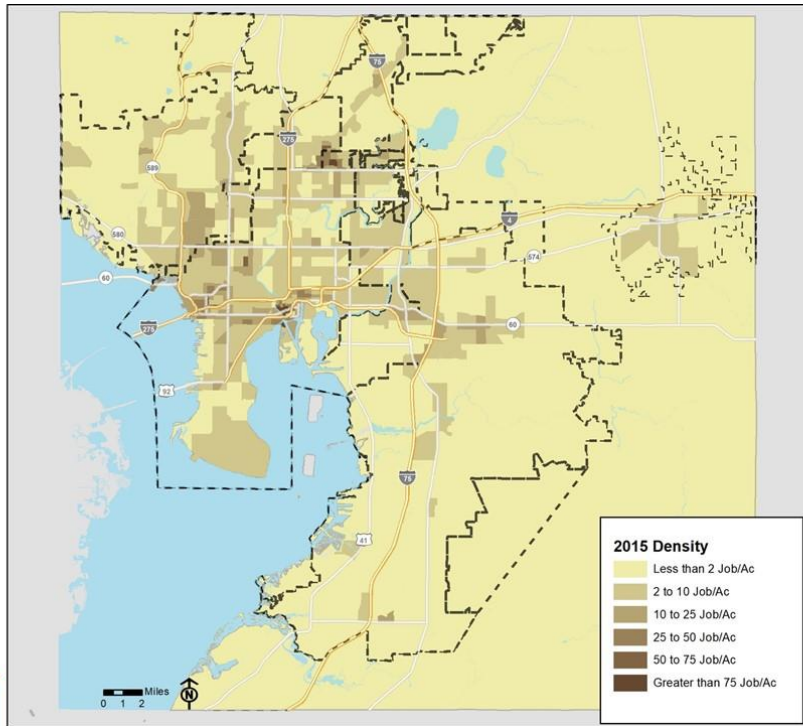
2015-2040 Change
÷
Total Area (acres)



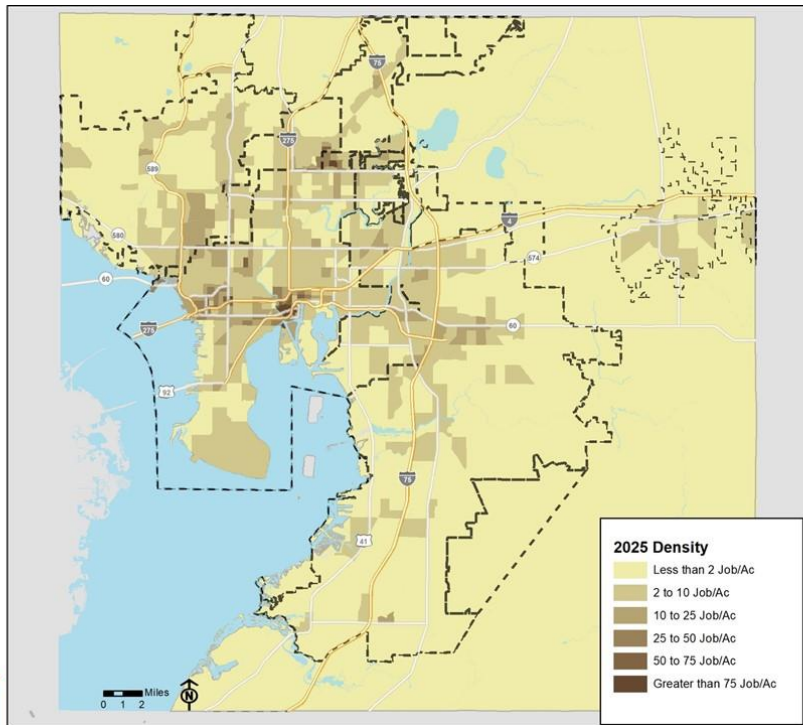
2015-2045 Change
÷
Total Area (acres)



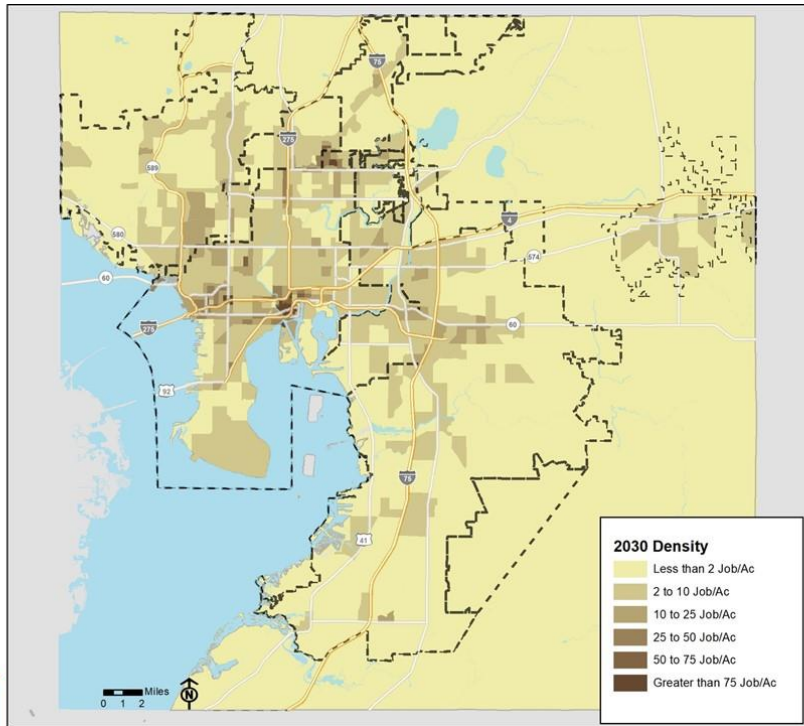
Total 2015
Employment
÷
Total Area (acres)



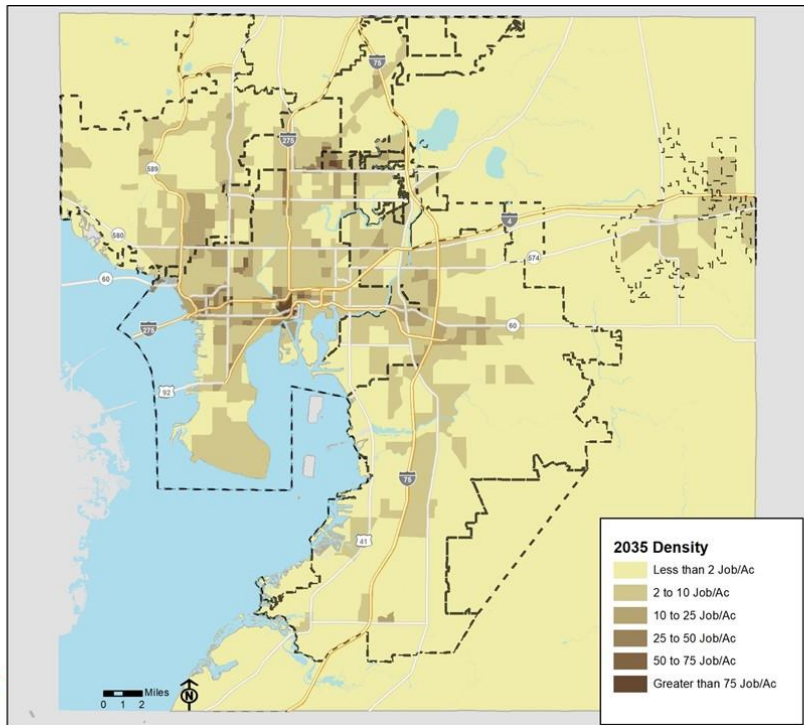
Total 2025
Employment
÷
Total Area (acres)



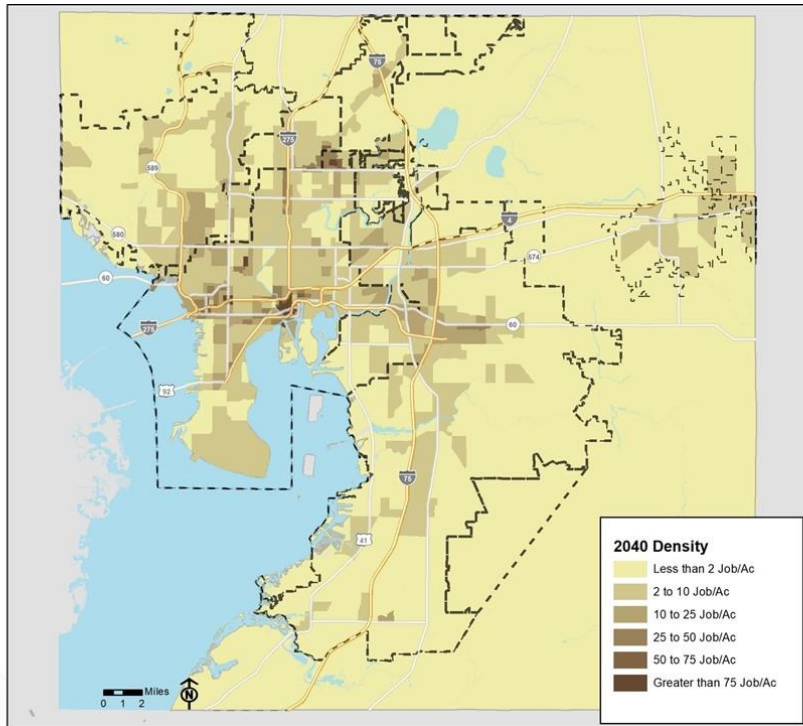
Total 2030
Employment
÷
Total Area (acres)



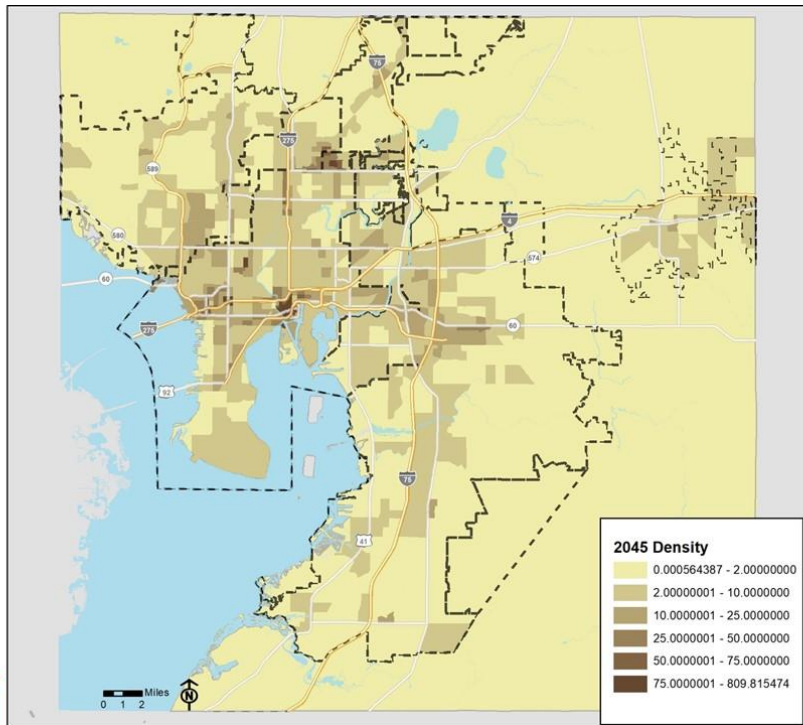
Total 2035
Employment
÷
Total Area (acres)



Total 2040
Employment
÷
Total Area (acres)



Total 2045
Employment
÷
Total Area (acres)





Other ZDATA attributes

- Interpolated as a function of TAZ population change:
 - Percent vacant/non-permanent
 - School enrollment
 - Percent households (Retired, Worker No Children, Worker Children)
 - K-12 school enrollment
 - Higher education
- Interpolated as a function of TAZ employment change:
 - Hotel/motel units