

Memorandum on Local Jurisdiction Outreach and Methodology Updates (Quantitative ICE Assessment Memo #1)

For

Complete 540 – Triangle Expressway Southeast Extension



Wake and Johnston Counties, North Carolina

STIP Nos. R-2721, R-2828, R-2829

Prepared for:



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Complete 540 – Triangle Expressway Southeast Extension Project
Local Jurisdiction Outreach & Methodology Updates
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(Quantitative ICE Assessment Memo #1)

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Removed two unnecessary pages from Appendix C:

- 1) Second page of Appendix C – incorrect cover page labeled Appendix B
- 2) Second page of Town of Cary interview – repeat of bullet point that is included on page 1

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1. Introduction

The North Carolina Department of Transportation (NCDOT) and the Federal Highway Administration (FHWA) propose to build a new, limited-access highway from NC 55 in Apex to US 64/US 264 Bypass (I-495) in Knightdale, a distance of approximately 28 miles. This proposed highway, known as Complete 540 – Triangle Expressway Southeast Extension, is proposed as a toll facility.

Through the National Environmental Policy Act (NEPA) process, NCDOT has previously completed a Qualitative Indirect and Cumulative Effects Report (Qualitative ICE; H.W. Lochner, Inc., 2014) as part of the Draft Environmental Impact Statement (DEIS), which was published in November 2015.

Qualitative ICE

The Qualitative ICE analysis evaluated potential effects of the various project alternatives. The Qualitative ICE divided the project's Future Land Use Study Area (FLUSA) into nine zones and evaluated the potential for future indirect effects in each zone under each of the Detailed Study Alternatives (DSAs). As stated in the DEIS, "[t]he qualitative assessment concluded that each DSA would result in indirect or cumulative effects of similar magnitudes, although the specific locations of these effects would vary according to DSA. For this reason, these impacts would not be a major factor in selecting the preferred DSA. Once a Preferred Alternative (PA) is selected, more detailed, quantitative analyses will be conducted for comparison with the "no build" alternative (sic)."

Under the 2040 No-Build Alternative, the Qualitative ICE determined that growth and development patterns in the FLUSA would likely be influenced by the proximity to existing major transportation facilities and commercial and retail centers. The document noted that most of the existing land use plans for jurisdictions within the FLUSA assume construction of Complete 540; so it is possible that the 2040 No-Build Alternative would promote future development patterns that differed from those envisioned in local land use plans. The construction of Complete 540 would likely encourage higher land use densities, more commercial and industrial development, and a greater mix of uses in the areas surrounding the interchanges.

In April 2016, NCDOT selected Detailed Study Alternative 2 (DSA 2) as the PA for the project. This Quantitative ICE was developed for the Final Environmental Impact Statement (FEIS) and provides the detailed study specified in the DEIS. The FLUSA used in the Qualitative ICE has been used in the current Quantitative ICE assessment.

Purpose

The purpose of this memo is to outline the methodology used in the Quantitative ICE analysis to forecast land use changes in the FLUSA between 2010 and 2040 with and without the Complete 540 project. The outputs of the land use forecasts documented in this memo will be used in a Quantitative ICE Assessment and a Water Quality Indirect and Cumulative Impacts (ICI) Assessment for the proposed facility. The methodology is based on information collected from the regional and local planners who are most familiar with the FLUSA, land use forecasting and socioeconomic data approved for use in the Triangle Region, and a review of recent literature on land use changes associated with the construction of transportation infrastructure.

This memo outlines the methodology to:

1. Assess the existing, approved 2040 land use forecast (developed by using the Imagine 2040 regional planning process)

2. Develop an additional future land use forecast

The goal is to have one current (2010; Baseline scenario) and two future year (2040) land use forecasts: one without the influence of Complete 540 (2040 No-Build scenario) and one with the proposed facility (2040 Build scenario). The resulting forecasts would then be compared to assess indirect and cumulative effects for the Complete 540 Quantitative ICE Report. This approach is consistent with the March 2010 FHWA *Interim Guidance on the Application of Travel and Land Use Forecasting in NEPA* (FHWA, 2010).

Current Regional Practice

Numerous factors affect how and when land is developed, and many of those factors have little to do with transportation infrastructure. Factors like regional growth trends, local jurisdiction land use regulations, utility access, school quality, and many others have as much or more of an effect on land use development patterns as transportation infrastructure (Transportation Research Board, 1995). The project team has examined growth factors for counties within the region and specifically within the FLUSA for the Complete 540 project through the Historic Growth Memorandum (Michael Baker Engineering, 2016).

In the Triangle region, the Capital Area Metropolitan Planning Organization (CAMPO) and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) have cooperated through the Triangle J Council of Governments (COG) to promote a coordinated decision-making process for guiding growth and transportation planning using CommunityViz software, a scenario planning tool (also referred to as a ‘model’).

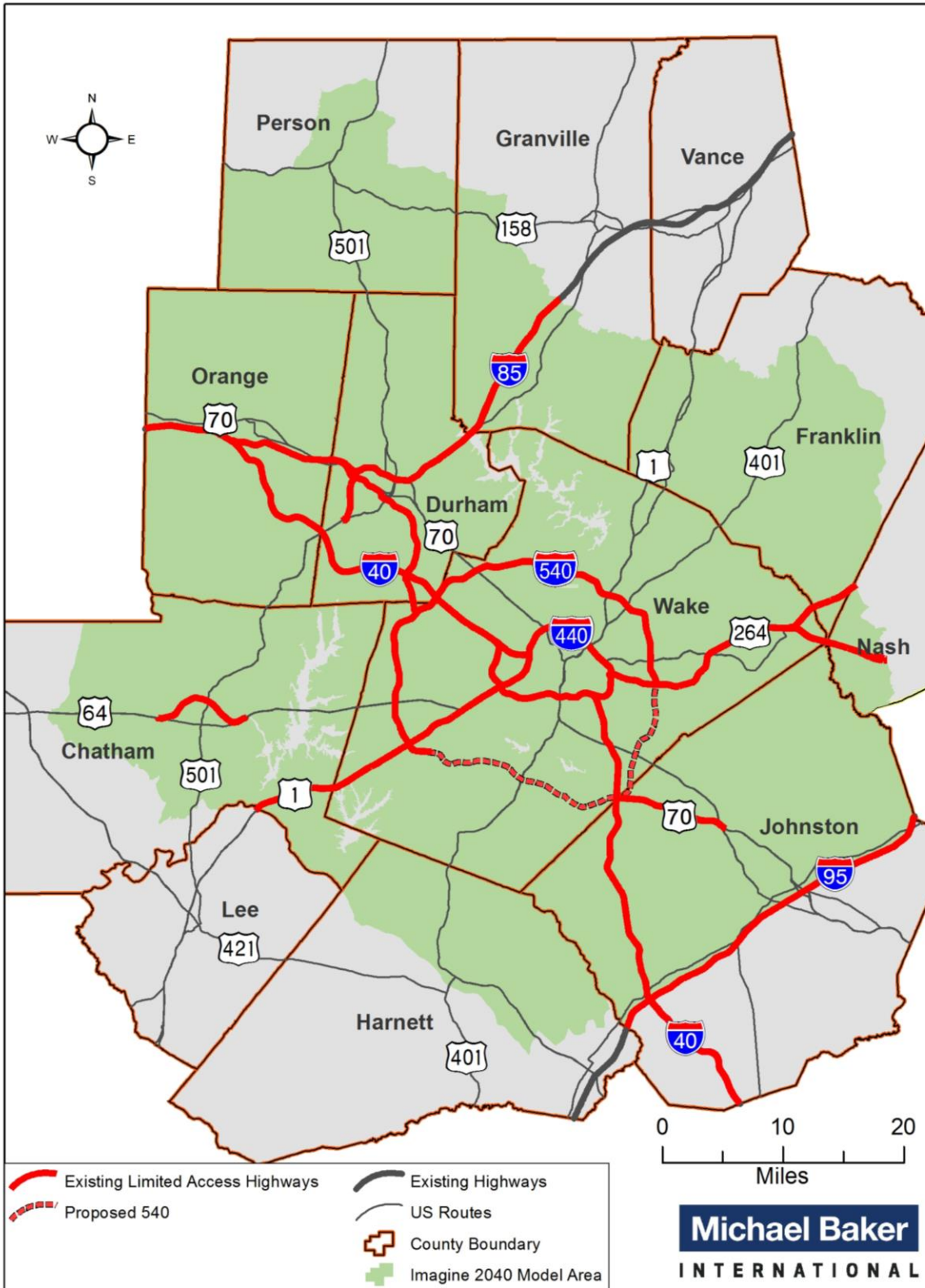
The two MPOs and Triangle J COG began their coordination in 2010 to develop the Imagine 2040 initiative, a 25-year plan for the Triangle region. Imagine 2040 was an effort to “promote community-based regionalism, aimed at guiding growth and coordinating decision-making processes for a more sustainable transportation system” (TJ COG, 2013). The CommunityViz model was developed to “measure and evaluate the impacts of competing development scenarios and major investments in the regional transportation system” (TJCOG, 2016). Outputs of the Imagine 2040 initiative included data, tools, and recommendations; but, most important for the purpose of this study were the socioeconomic forecasts (SE data) at the Traffic Analysis Zone (TAZ) level for use in the CAMPO and DCHC MPO 2040 Metropolitan Transportation Plans (MTPs; CAMPO and DCHC MPO, 2013) and the Triangle Regional Model (TRM). Imagine 2040 concluded in 2013, but a new round of similar work is now underway, called Connect 2045, to support the next CAMPO and DCHC MPO MTPs.

The modeling effort for Imagine 2040 included all of Wake, Durham, and Orange counties and portions of Johnston, Harnett, Chatham, Person, Granville, Franklin, and Nash counties.

See Figure 1 for a map of the counties included in the Imagine 2040 model area.

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Figure 1: Imagine 2040 Model Area



This Quantitative ICE assessment is effectively a scenario planning exercise applied to the context of a single transportation project. This scenario planning exercise measures and evaluates the effects of two different development scenarios:

- A future development scenario in 2040 without Complete 540 (2040 No-Build)
- A future development scenario in 2040 with Complete 540 (2040 Build)

Since the CommunityViz model had already been calibrated to regional conditions and applied to regionally approved transportation plans, it is the best tool to use in this Quantitative ICE to forecast future land use in the study area. Use of this model necessitated the review of the inputs to the model and the evaluation of the model input and factors. This review of inputs and factors will determine the most appropriate assumptions and inputs to accurately reflect 2040 Build and 2040 No-Build scenarios and whether to use the already completed Imagine 2040 Preferred Growth Scenario as one of the two scenarios for this Quantitative ICE.

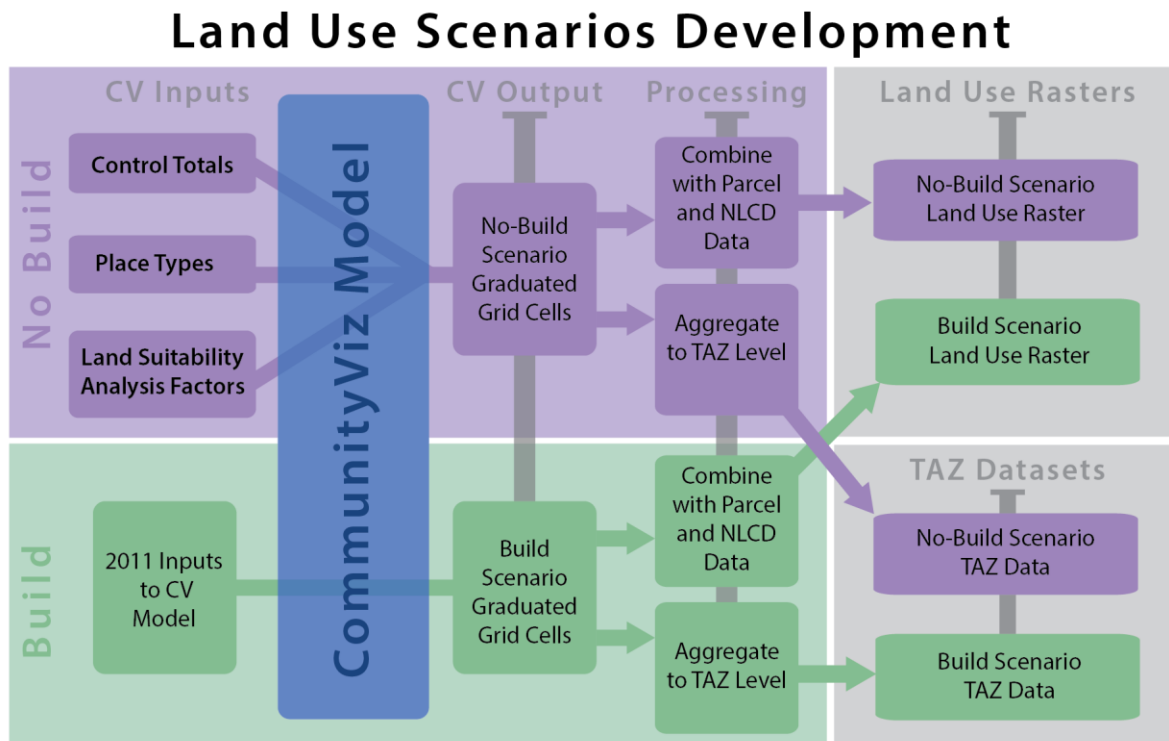
To assess the CommunityViz model, the various model inputs were reviewed to determine what, if any, adjustments would be needed. Three major sets of inputs for the CommunityViz model required evaluation (see Sections 2, 3, and 4):

1. Control Totals of Dwelling Units and Employment
2. Land Suitability Analysis Factors (Attractiveness Factors)
3. Place Types (at the Parcel Level)

Figure 2 provides a flowchart that guided the overall development of the land use scenarios for this Quantitative ICE process. The bottom half of the flow chart shows how the 2011 inputs to the CommunityViz model as it was run for the Preferred Growth Scenario resulted in the Build Graduated Grid Cell Output from CommunityViz. The Graduated Grid Cell output was then aggregated to the TAZ level to create the inputs for the TRM, which evaluates travel demand in the Triangle Region. The same Graduated Grid Cell output was combined with the parcel and National Land Cover Dataset (NLCD) data to create the 2040 Build Land Use Raster.

The top half of the flow chart shows the similar process used to develop the 2040 No-Build scenario. In this instance, however, the three key inputs (i.e., control totals, land suitability analysis factors, and place types) were adjusted before running the CommunityViz model. The process used to adjust these inputs is described in the remainder of this memo.

Figure 2: Land Use Scenarios Development Flowchart



Throughout this memo, forecasted values for population and jobs are reported, analyzed, and calculated for use in future modeling and analysis. Although results may be reported to a high level of precision, that precision should not imply that the values are highly accurate. Any prediction of future conditions, including future socioeconomic data, is an uncertain process with the potential for error. Available evidence on socioeconomic projection indicates that “forecast errors are generally larger for small places than for large places; are generally larger for places that have very high or negative growth rates than they are for places that have moderate, positive growth rates; generally increase with the length of the projection horizon; and vary from one launch year to another” (Smith et al.; 2001).

For county-level projections of 25 years, the typical mean algebraic percentage errors are about 30 percent. For census tracts (which are typically larger than TAZs) errors are typically 45 percent for the same period (Smith et al; 2001). Thus, despite the best efforts of researchers and forecasters, the error rates for long-range projections are still quite high; thus, any projection or estimate of induced and cumulative effects must be considered the best estimate within a wide range of error.

In the final results of the indirect and cumulative assessment, land use results will be rounded to a reasonable level, given the uncertainty of this forecasting process. However, numbers calculated in this memo are not rounded any higher than whole numbers to limit the introduction of additional error as calculations are carried forward in the modeling and analytical processes.

2. Control Total Adjustments (Regional and County-level)

Most forecasting processes start with some basic assumptions. The Imagine 2040 process used assumptions about the total growth in employment and housing units for each county within the modeled area (the 10-county region described above). These assumptions are called control totals and are derived from long-term forecasting of population, households, and employment. The control totals for Imagine 2040 were developed and applied at the county level to provide a ceiling for the total number of dwelling units (and therefore people) and jobs added to each county (or portion thereof) included within the modeled region.

Population, Household, and Housing Unit Projections

Population projections for each county from the North Carolina Office of State Budget and Management (OSMB) State Demographics branch were used as the starting point to estimate the population growth and number of households and housing (or dwelling) units added in Imagine 2040. OSBM forecasts were only available through 2031; so, CAMPO chose to use the growth curve of the last five years of the forecast period (2026-2031) and extend that curve nine years to 2040 to provide a forecast for 2040 (CAMPO, 2012).

The forecasts developed by OSBM use time-series trend analysis of trend growth from 1990-2010 to forecast future year growth from past trends. For each county, an exponential smoothing or autoregressive integrated moving average (ARIMA) model was selected that best fit the 2010 Census and 2010-2014 Census county estimates while maintaining a low mean average percentage error (NC OSMB, 2015). These models were then used to forecast population for each year out to 2031. Since these models are based on historic growth trends, they are not influenced by current or future decisions regarding transportation infrastructure, utility provision, or local land use policies.

Employment Projections

The starting point for employment projections was the NC Department of Commerce Labor and Economic Analysis Division (LEAD). Since the LEAD provides current and past employment statistics but does not provide forecasts of employment, growth rates from Woods and Poole Economics forecasts of 2010 to 2040 employment were used to project the LEAD employment totals from 2010 to 2040.

Woods and Poole uses a top-down, national approach to forecast employment for all metropolitan areas and counties across the nation. The process begins with forecasts to 2050 of national income, earnings by industry, employment by industry, population, and inflation. The nation is then divided into 179 Economic Areas (EAs) as defined by the Bureau of Economic Analysis (BEA). Each EA is an aggregate of contiguous counties. For each EA, Woods and Poole develops a projection for employment using an export-base approach.

The export-base approach is founded on the principles of economic base analysis. Economic base analysis effectively treats each region as a small nation and uses the ideas of comparative advantage from trade theory to assess the base (or exporting) industries for a region by comparing the employment in each industry to the national averages. Industries where employment is higher than the national average are considered base (or exporting) industries. All other industries are considered non-basic. This theory presumes that the base (or exporting) industries are bringing in wealth from outside the region.

Woods and Poole applies this economic base analysis to each EA to assess the basic industries for each EA and then uses the national projections to assess how employment change at the national level in

each industry affects the basic industries in each EA. This change then filters to the non-basic industries. The national projections of employment are used as a control total for the aggregate of all employment in each EA. This effectively links all EAs and counties together in a comprehensive national projection process to ensure that the aggregate projection at the EA and county level does not exceed the national projection.

The same top-down process from nation to EA is used to forecast from the EA level to the county level. As this projection methodology relies on high-level economic and employment forecasting, there is no influence from current or future decisions regarding transportation infrastructure, utility provision, or local land use policies.

For Imagine 2040, the growth rates from the employment forecasts for each county in the Triangle region were applied to the LEAD total for employment in 2010 to forecast employment in 2040.

Table 1 shows the control totals for dwelling unit and employment growth by county that were inputs into the CommunityViz model during the Imagine 2040 effort. These numbers reflect the maximum additional units for each development type/category. So, in the SF (Single-Family) category, the regional total was limited to an addition of 365,765 dwelling units (DU).

Table 1: Control Totals for Imagine 2040

County	Single-Family DU ¹	Multifamily DU ¹	Industrial Jobs	Office Jobs	Service Jobs	Retail Jobs	Highway Retail Jobs
Orange	16,351	7,967	2,778	3,628	28,293	2,413	3,231
Person	4,369	182	0	173	2,194	128	246
Durham	44,739	22,118	6,211	13,163	68,018	10,134	6,212
Chatham	10,921	679	964	1,089	7,878	671	132
Granville	8,461	837	1,870	1,991	6,308	491	424
Nash	791	129	840	43	1,279	132	262
Franklin	13,485	422	983	48	3,334	3	338
Harnett	13,671	1,352	1,750	379	4,078	461	842
Wake	206,581	82,440	21,334	30,597	177,977	16,977	21,082
Johnston	46,396	2,291	6,632	835	16,496	741	3,161
Totals	365,765	118,417	43,362	51,946	315,855	32,151	35,930

Source: Matt Noonkester, CityExplained, Consultant for Imagine 2040.

¹ DU = Dwelling Unit

Notes: These values represent the additional DUs and jobs to be added to each county from the base year plus committed development to 2040. These numbers differ from those in Appendix C of the Imagine 2040 report (TJCOG, 20163) because the official control totals were reduced by the committed development prior to being input to CommunityViz for growth allocation. Committed development was manually added to the base year prior to running the model. The numbers shown above reflect the number of dwelling units and jobs to be allocated within each jurisdiction by the CommunityViz model.

Control Total Adjustments

Estimating the additional growth that a new road might cause has several challenges. Every highway and every region is different, so it is difficult to find an analogous comparison. In the context of this study, NCDOT and FHWA have confirmed through coordination with CAMPO and Triangle J COG that the

Imagine 2040 Preferred Growth Scenario best reflects a 2040 Build scenario given the inputs to the process at the time it was developed. Furthermore, the socioeconomic data outputs from the Imagine 2040 Preferred Growth Scenario were incorporated into the Triangle Regional TRM and adopted as part of the CAMPO and DCHC MPO Metropolitan Transportation Plans with the assumption that all projects in the MPOs' TIPs, including Complete 540, would be constructed.

Therefore, the approach in this context is to determine what, if any change, is needed to reduce the county-level control totals to reflect a 2040 No-Build scenario. This raises the fundamental question of how a highway investment might influence the course of regional or county-level growth. The Connecticut Academy of Science and Engineering (2013) noted that transportation investments can contribute to economic activity in two ways:

- The economic activity associated with construction of the project, and
- The improvements in "connectivity, mobility, accessibility, and reliability of the transportation system" that can "positively influence jobs, wealth, tax base and well-being."

The first set of contributions is temporary, but the second can have long-term impacts on the growth of a city, county, or region. Therefore, assessing the potential for a change in the regional 2040 control totals requires consideration of the second group of effects.

The project team met with CAMPO and Triangle J COG on March 15, 2016. CAMPO and Triangle J COG stated that they believed it was unlikely that failure to construct Complete 540 would have a sizeable or measurable impact on growth in the Triangle Region that would exceed the typical error rates in long-range growth forecasts. They did believe that growth patterns within the FLUSA would be influenced by constructing Complete 540 and offered suggestions on which factors used in the CommunityViz modeling for Imagine 2040 could be modified to be reflective of a 2040 No-Build condition.

Based on the scope of this project, the project team examined ways to conservatively estimate population and employment for the region (one that maximized the potential influence of the project on future population and employment) by removing the potential influence of the proposed facility. The team conducted a literature review and examined how NCDOT had evaluated potential economic effects in their recent project prioritization efforts for the Strategic Transportation Investments law.

Historical Research Approach

The research of Durant and Turner (2012) provides a long-term historical research approach to analyzing the effects of major highways on regional employment over 20-year time periods. Their analysis of the effect of interstate highway construction on regional employment growth in the US from 1983 to 2003 indicates that each 10 percent increase in the stock of highways within a Metropolitan Statistical Area (MSA) causes about a 1.5 percent increase in employment over 20 years. Durant and Turner define highway stock as the centerline miles of interstate highways at the beginning of their analysis period.

This Durant and Turner historical research approach is not completely analogous to the situation of Complete 540. Although it will connect to interstate highways and will have similar design characteristics as an interstate highway, the proposed project is a tolled highway and will not be designated as an interstate highway. Most of the interstate highways included in the Durant and Turner study were not tolled.

Nevertheless, it is instructive to estimate what the use of the Durant and Turner relationship would show as the possible change in employment for the region. Since the Durant and Turner relationship

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was based on the centerline miles of interstates and employment levels at the MSA geographic level, this analysis will consider that relationship.

The total existing employment in the Raleigh MSA in 2015 was 625,420, based on the Bureau of Labor Statistics (BLS) 2015 employment estimate (US BLS, 2016). The Raleigh MSA includes Wake, Johnston, and Franklin counties.

In order to pick a growth rate, the time period for that rate must be considered. The estimated schedule for the Complete 540 project assumes that construction of the highway will occur in phases with the first phases between NC 55 Bypass and I-40 likely being completed between 2020 and 2025 and the final phase from I-40 to US 264 being completed between 2025 and 2030. The horizon year for the analysis in this Quantitative ICE assessment is 2040 to address the long-term growth potential associated with the proposed roadway and to maintain consistency with the horizon year of the CAMPO and DCHC MPO 2040 MTPs. Thus, Complete 540 will not be fully constructed by 2020 and would have fewer than 20 years of time to affect the future employment growth in the Raleigh MSA by 2040. Nevertheless, with construction anticipated by developers and the community at large, growth impacts may precede construction of the highway.

This analysis of employment growth begins with an estimate of 2015 employment and forecasts forward to estimate the employment for 2040. Over the time period between 2015 and 2040, fewer than 20 years exist for the project to affect employment post-construction, and the time period starts from a baseline that precedes construction of the highway. For these reasons, it is reasonable to assume that the rule of thumb of a 20-year-impact of 1.5 percent for each 10 percent increase in highway stock from the Duranton and Turner (2012) historical research approach could be applied to the 2015 employment baseline to estimate the growth effects of the highway on employment by 2040. This would allow for a conservative assessment, anticipating the greatest reasonable effect of constructing the facility on population and employment (given that Duranton and Turner approach is based on 20 years of effects, which is greater than the post-construction timeframe in this ICE analysis). This estimate of growth effects can then be applied to household and population growth using ratios of employment to household (or dwelling unit) and employment to population estimates.

Using the Duranton and Turner (2012) historical research approach rule of thumb, Table 2, Table 3, and Figure 3 show the:

- Centerline mileage of existing limited-access highway documented in the Raleigh MSA (Table 2 and Figure 3 in red)
- Increase in centerline mileage with the construction of Complete 540 (Table 3)
- Resulting increases in jobs, dwelling units, and people (Table 3)

Table 2: Existing Highway Centerline Miles

Route	Miles
I-95 (Johnston County)	30.3
I-40 (Wake and Johnston Counties)	57.3
I-440 (Wake County)	16.8
I-540 (Wake County)	25.4
NC-540 (Wake County)	16.0
I-495 (Wake County, I-440 to I-540)	4.5

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Route	Miles
US-64/US-264 (I-540 to US-264)	13.1
US-64 (US 264 to Nash County)	6.5
US-264 (US 64 to Nash County)	3.6
US-1 (Chatham County to US 64)	12.5
US-1/US-64 (US 64 to I-440)	3.8
US-70 (Johnston County)	9.7
NC-147 (Wake County)	1.0
Wade Ave (Wake County)	3.2
Total	203.7

Notes: Calculated in ArcGIS 10.1 from NCDOT Primary and Secondary Road Arcs (LRC_ARCS.shp), 1st Quarter 2015 Release

Table 3: Estimated Raleigh MSA Control Total Adjustments using Duranton and Turner (2012) Method

Parameter	Value
a. Existing Highway Centerline Mileage ¹	204
b. Complete 540 Centerline Mileage ¹	27.8
c. Centerline Mileage Increase (2015-2040)	13.6%
d. 10%:1.5% Ratio Applied to 13.6% Equals	2.04%
e. Employment Percent Increase ² (2015-2040) [=d]	2.04%
f. 2015 Employment (total number of jobs)	625,420
g. Estimated Employment Increase (number of jobs; 2015-2040) [e x f]	12,759
h. Dwelling Units per Job ³	1.02
i. Dwelling Unit Increase (2015-2040) [g x h]	13,014
j. Persons per Dwelling Unit ⁴	2.60
k. Estimated Population Increase (2015-2040) [i x j]	33,836

¹ Based on GIS calculations by Baker, see Table 2.

² Based on Duranton and Turner (2012) 10%:1.5% ratio

³ Based on the ratio of Dwelling Units to Jobs from the Imagine 2040 Control Totals

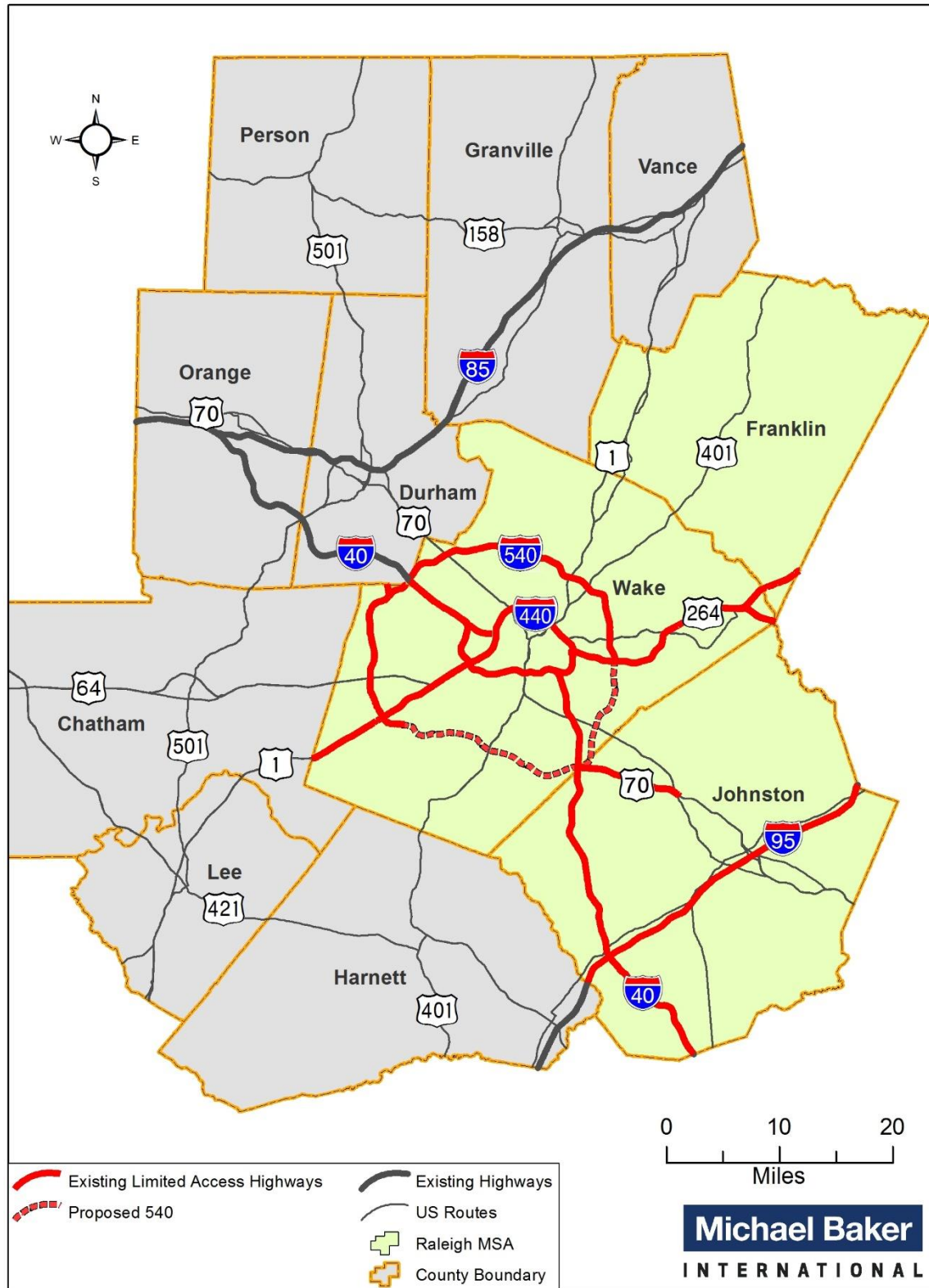
⁴ Based on ratio of Persons per Dwelling Unit from Imagine 2040 Control Totals

Note: All values are rounded and compounded rounding may result in different results when calculated independently. The Duranton and Turner estimate has a standard error of 3.7%; therefore, all subsequent calculations are subject to that same standard error.

The results of this analysis suggest that employment in the MSA area would increase by about 12,759 additional jobs by 2040. Using the ratios of jobs to dwelling units and dwelling units to population assumed in Imagine 2040, this increase in jobs would yield approximately 13,014 additional dwelling units and about 33,836 additional people.

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Figure 3: Existing Limited-Access Highways and the Proposed Complete 540



Regional Economic Model Approach

The Connecticut Academy of Science and Engineering (2013) described different ways to assess the long-term economic impacts of transportation investments and concluded that Regional Economic Models (REMs) are the most comprehensive and commonly used analysis tool for large transportation projects. The academy recommended the use of REMs for estimating the economic impacts of major transportation projects. NCDOT uses a REM, the TREDIS model, to assess the long-term economic effects of projects as part of its data-driven decision-making process.

The TREDIS model assesses changes in market access and travel cost to estimate economic changes using an input-output economic model. An input-output economic model uses the relationships between the inputs and outputs of different industrial sectors and assesses how the changes in those inputs and outputs affect overall economic output through industry linkages. The TREDIS model is calibrated to local economic conditions and uses inputs from Moody's Analytics, the Bureau of Labor Statistics, and other authoritative sources for existing and future employment, industrial output, and other essential model inputs.

NCDOT used the TREDIS model to assess long-term employment changes that could be attributed to all potential projects as part of their Project Prioritization scoring process. TREDIS was used to generate relative rankings of projects. Although not designed to be used in Quantitative ICE analyses, TREDIS is publicly available and provides an independent estimate of potential long-term growth associated with Complete 540. Prioritization 3.0 rankings were the last to include all three phases of Complete 540 and estimated the project would increase long-term employment by 7,557 jobs within Wake County (the model area for this TREDIS model run). Although this modeled area does not coincide with the FLUSA or with the Imagine 2040 model area, it does cover the county with the largest existing employment in the Imagine 2040 model area and where the majority of the new facility will be constructed.

Table 4: Wake County Control Total Adjustments Based on TREDIS Modeling

Parameter	Total Adjustment
Long-Term Employment Increase (20 years)	7,557
Dwelling Units per Job ¹	1.02
Dwelling Unit Increase	7,708
Persons per Dwelling Unit ²	2.60
Estimated Population Increase	20,041
¹ Based on ratio of Dwelling Units to Jobs from Imagine 2040 Control Totals	
² Based on ratio of Persons per Dwelling Unit from Imagine 2040 Control Totals	

Selected Control Total Adjustment Approach

Opinions vary on potential regional and county-level growth attributable to the Complete 540 project. Triangle J COG and CAMPO feel that, although the project will influence growth patterns, it will not have a substantial impact on overall growth in the Triangle Region given the current and projected high growth rate in this area. Other approaches suggest that some potential long-term growth effects are possible.

Given this range of opinion and the size of the Complete 540 project, the project team decided that the best approach would be to assess three possibilities and see how different the dwelling unit and employment outputs of CommunityViz model would be. Thus, the study team conducted a sensitivity test of three possible No-Build scenarios using different control total inputs to assess the sensitivity of

different assumptions about future growth. These three No-Build scenarios for the sensitivity testing were:

- **No-Build scenario 1:** No changes to the control totals.
- **No-Build scenario 2:** Control totals were reduced based on the Duranton and Turner historical research approach. The reductions in dwelling units and jobs calculated in Table 2 and Table 3 were subtracted from the control totals shown in Table 1 to create No-Build scenario 2 control totals for the CommunityViz model.
- **No-Build scenario 3:** Control totals were reduced based on the TREDIS economic model. The reductions in dwelling units and jobs calculated in Table 4 were subtracted from the control totals shown in Table 1 to create No-Build scenario 3 control totals for the CommunityViz model.

All three No-Build scenarios were run through CommunityViz, and the resulting dwelling unit and employment totals within the FLUSA are described in Table 5 below. FHWA, NCDOT, and study team staff reviewed these results and considered them in the context of input from local planners and engineers, and comments on the DEIS. Although the regional planners from the Triangle J COG and CAMPO felt that Complete 540 would not affect overall control totals for the region, the study team felt it would be appropriate to adjust the control totals in this case given the size and scale of this project relative to others.

Table 5: Comparison of FLUSA Dwelling Units and Employment for Different Scenarios

Parameter	Scenarios			
	No-Build 1	No-Build 2	No-Build 3	Build
Dwelling Units	143,078	137,677	139,656	144,775
Dwelling Units % Difference from Build	-1.2%	-4.9%	-3.5%	NA ¹
Jobs	88,243	83,604	85,268	89,654
Jobs % Difference from Build	-1.6%	-6.7%	-4.9%	NA ¹

¹ NA = Not Applicable

Therefore, the study team considered the No-Build scenarios 2 and 3. The TREDIS model inputs used for No-Build scenario 3 would likely be more attuned to local economic conditions, but given that the area of analysis for the TREDIS model used for Prioritization 3.0 was limited to just one county, the study team determined that using this option would limit the potential adjustment to control totals without consideration of economic effects in Johnston and Harnett counties.

Therefore, the study team determined that the most appropriate decision was to use No-Build scenario 2 as the input to the land use modeling and water quality modeling analyses. Although the Duranton and Turner historical research approach is not completely analogous to the situation of Complete 540, the study team determined that the selection of No-Build scenario 2 would provide the greater potential difference (i.e., greater estimation of induced impacts) between the 2040 No-Build and 2040 Build scenarios. The process used to develop the CommunityViz outputs for all alternatives shown in Table 5 is described in detail below with regards to the preferred scenario (Duranton and Turner historical research approach) and summarized in Section 6.

Distribution of Control Total Changes

Once the decision was made to adjust county-level control totals, the team needed to determine how these changes in control totals would be distributed around the region. Assessment of this question

required looking at how the proposed highway would affect the accessibility of different parts of the region. The TRM was used to analyze job accessibility with and without Complete 540. To ensure the analysis was not affected by assumptions about the location of future jobs that might be affected by the expected construction of Complete 540, this portion of the analysis relied on 2015 socioeconomic data for the number and location of jobs.

The 2015 socioeconomic data was input into the TRM (adopted by CAMPO and DCHC MPOs), and the model ran using a roadway networks with and without Complete 540 (a 2040 Build Network and a 2040 No-Build Network) to assess how access to jobs across the region would change. This analysis estimated the number of jobs accessible within a 30-minute drive time from each TAZ during the PM peak period. This time period was chosen as it is the most congested time period and the comparisons between 2040 No-Build and 2040 Build scenarios would likely show the largest differences in access to jobs, based on network speeds.¹

The resulting number of jobs accessible to each TAZ within a 30-minute drive varies widely across the region. TAZs farther from downtown Raleigh tended to be accessible to fewer jobs than those closer to downtown Raleigh. Also, when comparing the number of jobs accessible in the No-Build scenario versus the Build scenario, the mean and median numbers of jobs accessible are higher in the Build than the No-Build. This is expected because the addition of a new highway increases the overall accessibility to jobs if no other changes are made to the network or socioeconomic model inputs. To compare the relative accessibility change across the region requires a normalizing the accessibility results. The raw numbers of jobs accessible for each TAZ were normalized into standard scores (also known as z-scores), using the process of standardization as described below.

A z-score is the number of standard deviations by which an observation is above or below the mean of the group. As an example, Table 6 shows the change in job accessibility for TAZ 1748, which is located just southwest of the proposed interchange of Complete 540 and Benson Road (NC 50). Figure 4 shows the location of this TAZ and other TAZs in the area of southeast Wake and northern Johnston counties.

Appendix A reports the results of the Job Accessibility Analysis by TAZ. As seen in Appendix A, the job accessibility analysis shows that TAZ 1748 has the greatest increase in job accessibility from the No-Build to the Build scenario based on the z-scores. In the No-Build analysis of job accessibility, this TAZ has access to 215,224 jobs in 30 minutes. In the No-Build analysis, the average number of jobs accessible within 30 minutes for all TAZs is 307,235 jobs, and the standard deviation of jobs accessible within 30 minutes for all TAZs is 176,922 jobs. Thus, TAZ 1748 has a lower than average accessibility to jobs for the No-Build scenario, and its z-score is -0.52, indicating that its accessibility is about half a standard deviation lower than the average for all TAZs in the region.

In the Build analysis, the number of jobs accessible in 30 minutes from this TAZ rises to 388,077 jobs, compared to an average of 318,307 jobs across all the TAZs. Also, the standard deviation of accessibility for all TAZs in the Build analysis rises to 181,261 jobs. In this analysis, TAZ 1748 now has above average accessibility, as reflected in its z-score (0.385), indicating that its accessibility is about one-third of a standard deviation higher than the regional average. Thus, when comparing the difference in z-scores between the two model runs (with and without the Complete 540 roadway link), the result shows that

¹ Model runs were completed using 2015 socioeconomic data and roadway networks with (Build) and without (No-Build) the proposed highway. Triangle Regional Model Version 5.0 (V5) Build Version 416, created 2/8/2016.

the difference in relative accessibility for TAZ 1748 from No-Build to Build is 0.905 standard deviation. The same results for all TAZs are shown in Appendix A.

Table 6: Example of z-score Calculation for TAZ 1748

	Number of Jobs Accessible within 30 Minutes (2015 Jobs)		z-score of Number of Jobs Accessible within 30 Minutes (2015 Jobs)		z-score difference
	2040 No-Build Network	2040 Build Network	2040 No-Build Network	2040 Build Network	
TAZ 1748	215,224	388,077	-0.520	0.385	0.905
Mean (All TAZs)	307,235	318,307			
Standard deviation (All TAZs)	176,922	181,261			
Median (All TAZs)	327,126	341,062			

Once z-scores were calculated for each TAZ in each scenario, the change in z-score from the No-Build to the Build was calculated to assess the relative change in accessibility to jobs. The resulting changes in z-scores for each TAZ are shown in Figure 5. As expected, the greatest increases in job accessibility are in and around the immediate vicinity of the proposed highway. The areas in dark blue see an increase in accessibility to jobs of 0.5 and 1 standard deviation.

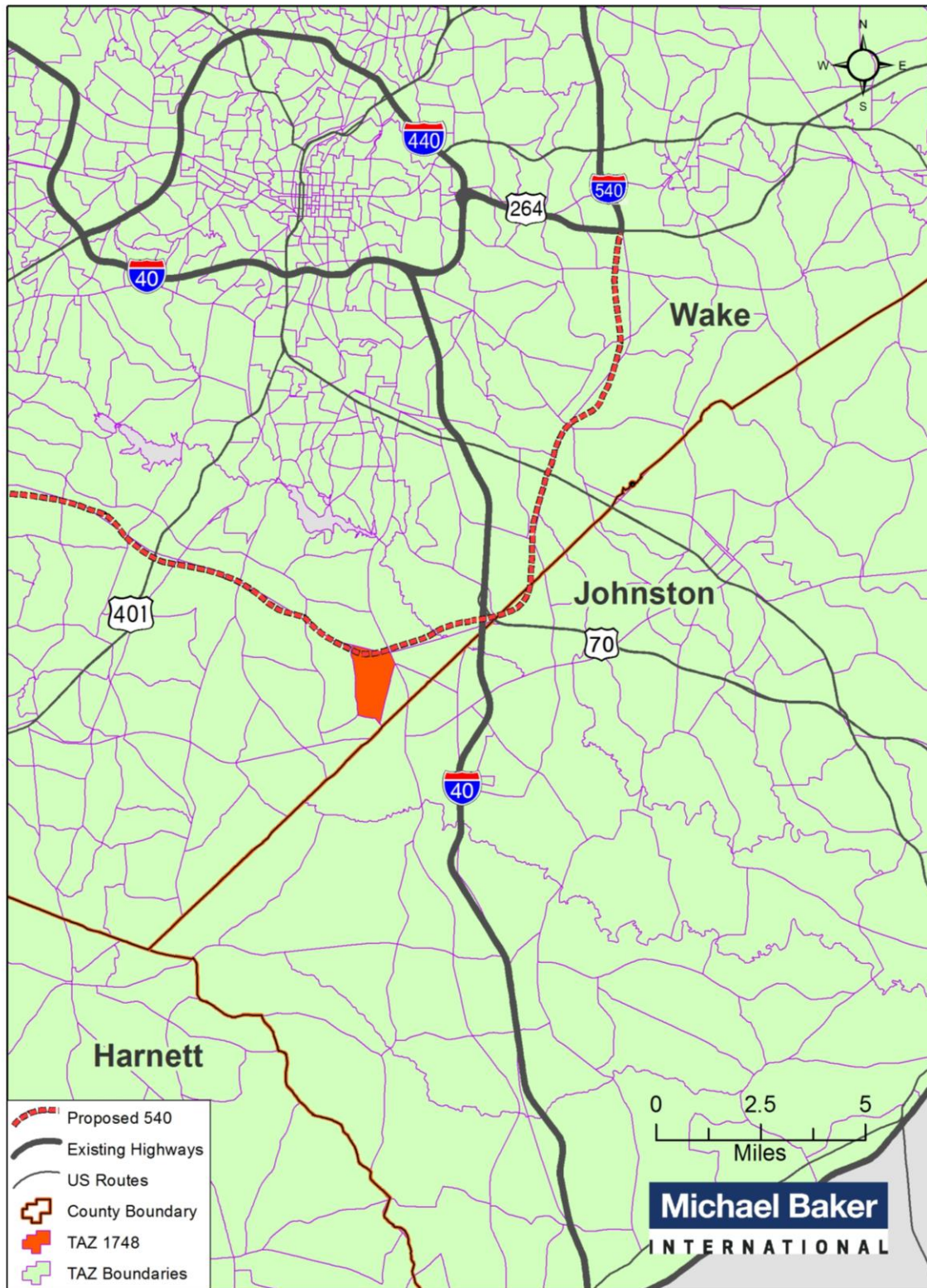
The point of this analysis is not to predict the additional number of jobs likely to develop in the Build scenario. Instead, the focus is on comparing the relative change in accessibility for TAZs across the region to estimate the areas within the FLUSA where Complete 540 has the greatest potential for influencing future land use. Of course, an increase in job accessibility is not a sufficient condition for assuming significant changes in future land use. Local land use regulations, utility availability, and other factors will affect the desirability of any specific areas within the FLUSA. Many of these factors are assessed within the CommunityViz model.

Those TAZs with the highest change in job accessibility are the most likely to see an increase in jobs, dwelling units, and population. In this analysis, TAZs in southern Wake County see the largest increase in job accessibility with the Complete 540 project; therefore, these areas would likely see increases in jobs, dwelling units, and population. TAZs in northwestern Johnston County did have some increased accessibility to jobs and, therefore, are likely to see some increase in jobs, dwelling units, and population. The results suggest that northern Harnett County would experience minimal to no relative gain in accessibility to jobs from the proposed highway and, therefore, is unlikely to see much increase in jobs, dwelling units, and population from the Complete 540 project.

Analyzing the relative change in accessibility indicates that approximately 70 percent of the improvement in job accessibility would occur in TAZs in Wake County; the remaining 30 percent would occur in TAZs in northwestern Johnston County. The exact location of the new dwelling units and jobs, however, is highly dependent on the local development regulations, sewer and water access, and other factors. Most of these factors are considered within the Land Suitability Analysis included within the CommunityViz model.

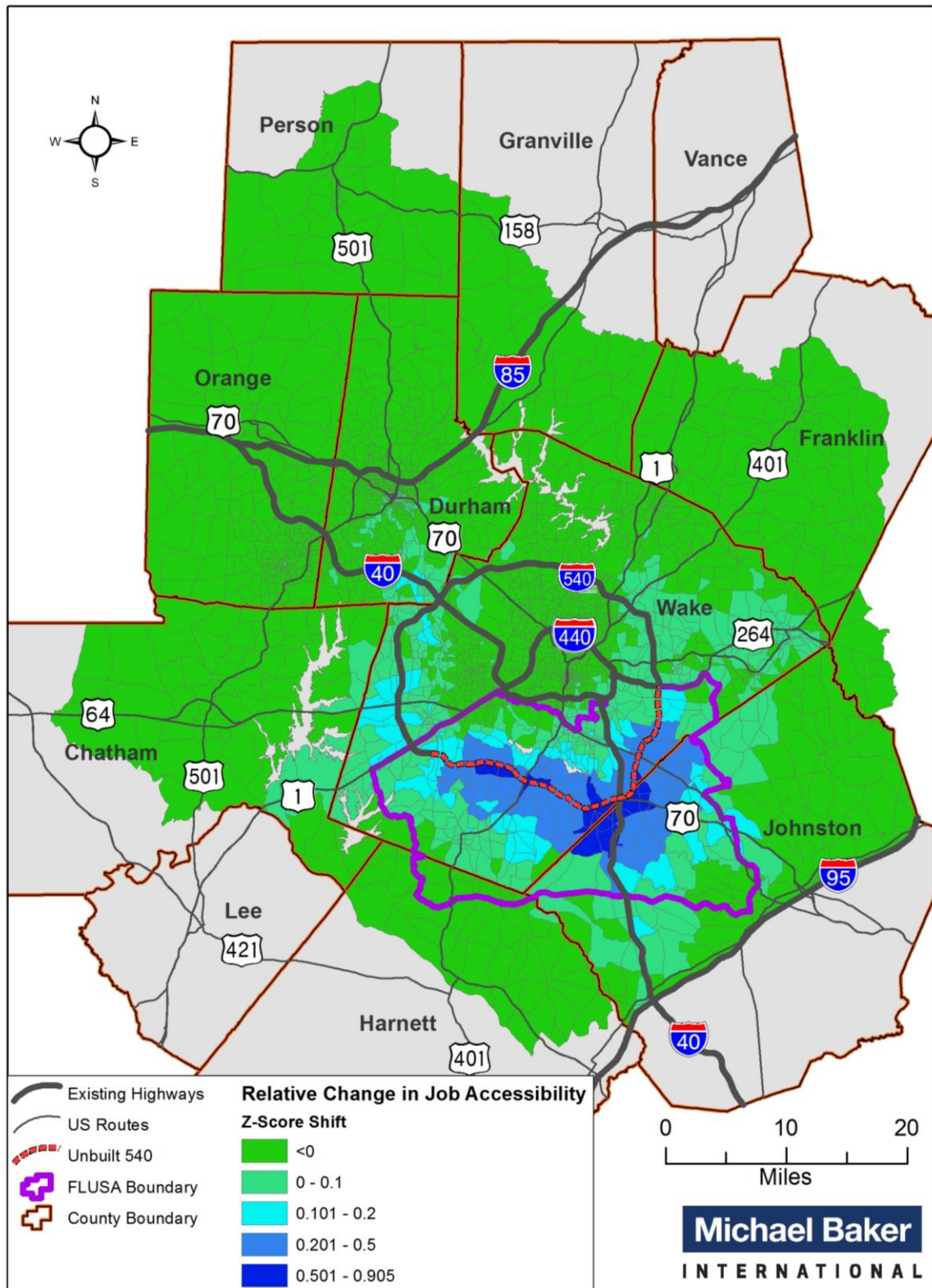
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Figure 4: Traffic Analysis Zones in Southern Wake and Northern Johnston Counties



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Figure 5: Analysis of Job Access with and without Complete 540 at the TAZ level.



2040 No-Build Scenario 2 Control Totals

Based on the above analysis, the county-level control total inputs for the CommunityViz modeling for the 2040 No-Build scenario will be reduced as shown in Table 7 and Table 8 from the values in Table 1 to produce the control total inputs for 2040 No-Build scenario 2.

Table 7: Control Total Adjustments to 2040 Dwelling Units by County for No-Build Scenario 2

2040 Build Scenario Control Totals for Dwelling Units from Table 1			
County	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Dwelling Units
Wake	206,581	82,440	289,021
Percent	71%	29%	100%
Johnston	46,396	2,291	48,687
Percent	95%	5%	100%
Estimated Reduction from Duranton and Turner Historical Research Approach and Job Accessibility Analysis			
Total Dwelling Unit Reduction from Table 3			13,014
Reduction to Wake County (70% of 13,014)			9,110
Reduction to Johnston County (30% of 13,014)			3,904
2040 No-Build Scenario Reductions to Control Totals for Dwelling Units			
County	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Dwelling Units
Wake	6,511	2,599	9,110
Percent	71%	29%	100%
Johnston	3,720	184	3,904
Percent	95%	5%	100%
This analysis assumes that the split between Single-Family and Multifamily Dwelling Units within each county will remain the same.			
2040 No-Build Scenario Control Totals for Dwelling Units			
County	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Dwelling Units
Wake	200,070	79,841	279,911
Johnston	42,676	2,107	44,783

Table 8: Control Total Adjustments to Employment by County for No-Build Scenario 2

Build Scenario Control Totals for Employment from Table 1						
County	Industrial Jobs	Office Jobs	Service Jobs	Retail Jobs	Highway Retail Jobs	Total Jobs
Wake	21,334	30,597	177,977	16,977	21,082	267,967
Percent	8%	11%	66%	6%	8%	100%
Johnston	6,632	835	16,496	741	3,161	27,865
Percent	24%	3%	59%	3%	11%	100%
Estimated Reduction from Duranton and Turner Historical Research Approach and Job Accessibility Analysis						
Total Jobs Reduction from Table 3						12,759
Reduction to Wake County (70% of 12,759)						8,931
Reduction to Johnston County (30% of 12,759)						3,828
2040 No-Build Scenario Reductions to Control Totals for Employment						
County	Industrial Jobs	Office Jobs	Service Jobs	Retail Jobs	Highway Retail Jobs	Total Jobs
Wake	711	1,020	5,932	566	703	8,932
Percent	8%	11%	66%	6%	8%	100%
Johnston	911	115	2,266	102	434	3,828
Percent	24%	3%	59%	3%	11%	100%
<i>This analysis assumes that the split between different employment types within each county will remain the same.</i>						
2040 No-Build Scenario Control Totals for Employment						
County	Industrial Jobs	Office Jobs	Service Jobs	Retail Jobs	Highway Retail Jobs	Total Jobs
Wake	20,623	29,577	172,045	16,411	20,379	259,035
Johnston	5,721	720	14,230	639	2,727	24,037

These calculations provided updated county-level estimates of dwelling units and employment estimates for the 2040 No-Build scenario. To determine what changes in the FLUSA could be estimated based on these changes, the project team reviewed which changes to the other CommunityViz inputs would be necessary, see Sections 3 and 4.

3. Attractiveness Factors

The CommunityViz model developed for Imagine 2040 included a Land Suitability Analysis (LSA) which was customized by Triangle J COG and CAMPO with the assistance of area planners in 2010, to gauge the appropriateness of an area for specific conditions or land uses. Factors input into the CommunityViz LSA had both positive and negative correlations to the desirability of an area. Factors included in the CommunityViz modeling for Imagine 2040 included:

Urban Footprint

- Existing & Emerging Growth Areas
- Water Service Area
- Sewer Service Area

Development Activity Centers

- Metropolitan Centers
- Town Center & Central Business District Activity Centers
- Regional & Community Activity Centers
- Four-Year Colleges & Universities

Environmental Features

- Watershed Protection Areas
- Significant Natural Heritage Areas
- Flood Hazard Areas

Highway System

- NC Highways
- US Highways
- Interchange Locations
- Major Intersections
- Secondary Intersections
- 2040 TRM highway network

Transit System

- Premium Rubber Tire Transit Corridors (also known as BRT Transit Corridors)
- Regional Bus Routes
- Commuter Rail Station, Area of Influence, 0.5 mile
- Light Rail Station, Area of Influence, 0.5 mile

Of concern to the analysis of effects related to Complete 540 are the factors associated with the highway system, in particular the 2040 TRM highway network and interchange locations. In the travel demand modeling for Imagine 2040, the 2040 TRM highway network included the centerline of the proposed Complete 540. In addition, the interchange locations factor used in the analysis included the interchanges associated with the proposed highway. Therefore, to properly conduct a scenario planning analysis for the Quantitative ICE assessment, the 2040 No-Build scenario will exclude Complete 540 and its proposed interchanges from the 2040 TRM highway network and interchange location factors included in the LSA.

4. Place Types (Parcel Level)

The CommunityViz model used for Imagine 2040 required customized inputs of density and intensity controls for use in estimating the development potential for an area. A key input to that process is the place type. Place types generalize “the various development categories from zoning and land use plans used by local governments to describe, measure and evaluate the built environment” (TJCOG, 2013). In addition to place types, the model uses development status to determine whether a given parcel is fully developed, partially developed, or is not developable. The place types are combined with the LSA and the development status to allocate future growth across the region. In effect, the place type describes how much growth is possible in any given parcel by defining the type of development and the maximum intensity of development that is possible. Appendix B provides details on each place type used in the Imagine 2040 process.

As required by the Federal Aid Highway Act of 1962, the 3-C planning process requires all MPOs develop long-range transportation plans through a process that is continuous, comprehensive, and cooperative. In 2010 and 2011, local government planning staff, MPO staff, and the consultant staff for Triangle J COG spent extensive time defining the appropriate place type inputs for the region. The Imagine 2040 process and the socioeconomic outputs of that process were approved by the regional MPOs as representative of the conditions expected with the construction of Complete 540. Therefore, the study team concluded that the place type inputs to the Imagine 2040 Preferred Growth Scenario are representative of a 2040 Build scenario. Consequently, the approach for this process requires determining the appropriate changes in place types to input into CommunityViz to reflect a 2040 No-Build scenario.

In August and September of 2016, the project team met with all localities in the FLUSA to review and discuss place type inputs to best match local planner expectations for development in a 2040 No-Build scenario. Table 9 below shows the date, time, and attendees at each local jurisdiction meeting. These meetings were generally one to one and a half hours in length and consisted of an introduction to the Quantitative ICE assessment and a review of the place type inputs. Local staff at each jurisdiction reviewed the maps of the original place type inputs used in Imagine 2040 and discussed possible place type changes.

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Table 9: Meetings with Jurisdictions in the FLUSA

Jurisdiction	Jurisdiction Attendees	Meeting Date	Meeting Time	Project Team Attendees
Angier	Sean Johnson, Coley Price, Lew Weatherspoon	9/6/2016	10:00 AM	Ken Gilland, Scudder Wagg, Jon Wergin, Will Kerr
Apex	Dianne Khin	8/30/2016	9:30 AM	Scudder Wagg, Jon Wergin, Emaly Simone, Ken Gilland
Cary	Will Hartye	8/26/2016	1:00 PM	Kristin Maseman, Scudder Wagg, Jon Wergin, Will Kerr
Clayton	Jay McLeod	8/29/2016	3:30 PM	Scudder Wagg, Jon Wergin, Emaly Simone, Ken Gilland
Fuquay-Varina	Danny Johnson, Samantha Smith, Mike Sorensen	8/26/2016	10:00 AM	Scudder Wagg, Jon Wergin, Will Kerr, Ken Gilland, Kristin Maseman
Garner	Brad Bass, Jeff Triezenberg, Dave Bamford	8/30/2016	9:30 AM	Scudder Wagg, Jon Wergin, Emaly Simone, Ken Gilland, Kristin Maseman
Harnett County	Jay Sikes, Mark Locklear	8/25/2016	10:30 AM	Scudder Wagg, Jon Wergin, Will Kerr, Emaly Simone, Ken Gilland
Holly Springs	Gina Clapp, Justin Steinmann, Kendra Parrish	8/30/2016	3:30 PM	Scudder Wagg, Jon Wergin, Emaly Simone
Johnston County	Berry Gray, Matt Kirkland	9/1/2016	1:00 PM	Scudder Wagg (via teleconference), Jon Wergin (via teleconference), Emaly Simone, Ken Gilland
Knightdale	Jason Brown	9/6/2016	1:00 PM	Ken Gilland, Scudder Wagg, Jon Wergin, Will Kerr
Raleigh	Bynum Walter, John Anagnost, Kyle Little, Ray Aull, Ken Bowers	9/7/2016	2:00 PM	Ken Gilland, Scudder Wagg, Jon Wergin, Emaly Simone
Smithfield	Paul Embler, Mark Helmer	9/23/2016	11:00 AM	Ken Gilland, Emaly Simone, Scudder Wagg (via teleconference)
Wake County	Bill Shroyer, Tim Gardiner	8/29/2016	1:00 PM	Scudder Wagg, Jon Wergin, Emaly Simone, Ken Gilland
Wendell	David Bergmark	8/25/2016	1:00 PM	Scudder Wagg, Jon Wergin, Will Kerr, Ken Gilland

The meeting summaries (Appendix C) describe the differences that local planners felt would be appropriate if starting from scratch with today's knowledge. The study team reviewed the local input and adapted that input to fit the approach of understanding that the Imagine 2040 Preferred Growth Scenario is the most appropriate representation of the 2040 Build scenario. The discussion below along with the maps included in Appendix C summarize the adjustments to the place-type inputs to the Imagine 2040 model for the 2040 No-Build scenario. Where noted, the 2040 No-Build scenario changes indicate where changes were made relative to the original inputs to Imagine 2040. The appendix provides the full summary of each meeting and the maps showing changes to the place-type inputs based on the study team interpretation of local planning staff input.

Angier Place-Type Changes

No Changes

Apex Place-Type Changes

No changes

Cary Place-Type Changes

- Commercial place types near proposed interchange at Bells Lake Rd. changed to large-lot residential neighborhood.

Clayton Place-Type Changes

- Several parcels off of Guy Rd. north of White Oak Circle changed to large-lot residential neighborhood

Fuquay-Varina Place-Type Changes

- Non-residential place types changed to small-lot residential neighborhood at proposed interchange with Fayetteville Rd. and further south on Fayetteville Rd.

Garner Place-Type Changes

- Non-residential place types changed to small-lot residential neighborhood at the intersection of Ten Ten Rd. and Jordan Rd.
- Higher intensity commercial reduced to neighborhood commercial center west of proposed interchange with Rock Quarry Rd.

Harnett County Place-Type Changes

No Changes

Holly Springs Place-Type Changes

- Non-residential and mixed uses changed to small-lot residential neighborhood at proposed interchange with Holly Spring Rd. and at intersection between Sunset Lake Rd. and Holly Springs Rd.

Johnston County Place-Type Changes

- Small-lot residential and non-residential place types to the south and east of proposed interchange with I-40 changed to large-lot residential neighborhood.

Knightsdale Place-Type Changes

- Parcels along Grasshopper Rd. between Poole Rd. and NC 264 changed from non-residential and small-lot residential to large-lot residential neighborhood

Raleigh Place-Type Changes

- Small-lot residential changed to large-lot residential neighborhood in between proposed interchanges at Auburn-Knightsdale Rd. and Poole Rd.
- Small-lot residential changed to large-lot residential neighborhood north of proposed interchange at Old Baucom Rd.
- Suburban commercial center changed to neighborhood commercial center west of proposed interchange at Old Baucom Rd.

Wake County Place-Type Changes

- Small-lot residential changed to large-lot residential neighborhood at proposed interchanges at Poole Rd., Auburn-Knightsdale Rd., Rock Quarry Rd., White Oak Rd., I-40, Benson Rd., Old Stage Rd., and Bells Lake Rd.
- Commercial uses changed to small-lot residential neighborhood parcels at proposed interchange with Fayetteville Rd.
- Suburban commercial center changed to neighborhood commercial center parcels at proposed interchange with Rock Quarry Rd.

Wendell Place-Type Changes

No changes

5. Imagine 2040 Output for Dwelling Units and Employment

Based on steps outlined in Sections 3, 4, and 5; the project team updated the Imagine 2040 county-level control totals of dwelling units and employment and removed the influence of the Complete 540 project from the Imagine 2040 initiative inputs. These updated materials were processed using the CommunityViz software to estimate the changes in land use associated with the 2040 No-Build scenario.

For 2040 No-Build scenario 2, reduction of county-level control totals using the Duranton and Turner historical research approach, the following FLUSA-level changes were estimated:

Table 10: Comparison of FLUSA Dwelling Units and Employment for 2040 No-Build Scenario 2 with the 2040 Build Scenario

Parameter	No-Build 2	Build
Dwelling Units	137,677	144,775
Dwelling Units % Difference from Build	-4.9%	NA ¹
Jobs	83,604	89,654
Jobs % Difference from Build	-6.7%	NA ¹

¹ NA = Not applicable

6. Next Steps

The next steps will be to use CommunityViz outputs of employment and dwelling units from the 2040 No-Build 2 scenario (Duranton and Turner historical research approach) and the original Imagine 2040 outputs to produce a 2040 No-Build and 2040 Build land cover forecast for 2040. The differences between the two land cover forecasts will be used to assess changes in impervious surface and development patterns by watershed, and water quality modeling will be conducted. Then using the CommunityViz, land cover, and water quality analyses of each scenario, the indirect effects of the proposed project can be assessed. Building upon the indirect effects analysis, the cumulative effects will also be assessed by reviewing overall changes from the Baseline to the future Build and considering the impacts of past, present, and reasonably foreseeable future actions by federal, state, local, and non-governmental entities.

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Appendix A: Job Accessibility Analysis Results by TAZ

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1	353,768	367,758	0.263	0.273	0.010
2	357,538	373,875	0.284	0.307	0.022
3	360,542	375,582	0.301	0.316	0.015
4	356,346	372,991	0.278	0.302	0.024
5	358,725	372,233	0.291	0.298	0.006
6	376,885	379,532	0.394	0.338	-0.056
7	356,681	371,481	0.279	0.293	0.014
8	357,268	371,239	0.283	0.292	0.009
9	324,544	327,260	0.098	0.049	-0.048
10	376,988	383,939	0.394	0.362	-0.032
11	376,270	385,547	0.390	0.371	-0.019
12	332,439	342,686	0.142	0.134	-0.008
13	381,581	390,326	0.420	0.397	-0.023
14	333,324	347,115	0.147	0.159	0.011
15	356,828	369,971	0.280	0.285	0.005
16	372,316	377,977	0.368	0.329	-0.039
17	381,433	387,167	0.419	0.380	-0.039
18	381,098	388,130	0.417	0.385	-0.032
19	351,072	368,986	0.248	0.280	0.032
20	334,284	343,026	0.153	0.136	-0.017
21	330,827	332,656	0.133	0.079	-0.054
22	327,352	336,070	0.114	0.098	-0.016
23	324,406	328,734	0.097	0.058	-0.040
24	323,802	327,592	0.094	0.051	-0.042
25	322,160	321,775	0.084	0.019	-0.065
26	323,165	322,398	0.090	0.023	-0.067
27	318,675	320,871	0.065	0.014	-0.051
28	327,499	325,791	0.115	0.041	-0.073
29	325,221	326,676	0.102	0.046	-0.055
30	322,907	322,776	0.089	0.025	-0.064
31	315,907	319,373	0.049	0.006	-0.043
32	314,845	314,749	0.043	-0.020	-0.063
33	317,556	321,498	0.058	0.018	-0.041
34	332,481	331,793	0.143	0.074	-0.068
35	320,064	321,247	0.073	0.016	-0.056
36	322,539	322,904	0.086	0.025	-0.061
37	319,757	320,940	0.071	0.015	-0.056
38	327,645	330,537	0.115	0.067	-0.048
39	311,180	316,328	0.022	-0.011	-0.033
40	325,066	325,609	0.101	0.040	-0.060
41	335,597	338,734	0.160	0.113	-0.048
42	331,154	332,470	0.135	0.078	-0.057
43	317,396	317,251	0.057	-0.006	-0.063
44	311,991	312,501	0.027	-0.032	-0.059
45	300,861	300,880	-0.036	-0.096	-0.060
46	299,261	300,861	-0.045	-0.096	-0.051
47	308,474	313,570	0.007	-0.026	-0.033
48	331,782	331,628	0.139	0.073	-0.065
49	341,150	343,334	0.192	0.138	-0.054
50	341,217	346,107	0.192	0.153	-0.039
51	319,919	320,657	0.072	0.013	-0.059
52	317,508	323,095	0.058	0.026	-0.032
53	307,512	312,645	0.002	-0.031	-0.033
54	303,573	309,041	-0.021	-0.051	-0.030

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
55	336,667	340,380	0.166	0.122	-0.045
56	321,304	325,967	0.080	0.042	-0.037
57	316,035	319,537	0.050	0.007	-0.043
58	324,885	329,225	0.100	0.060	-0.040
59	326,527	326,750	0.109	0.047	-0.062
60	329,572	329,112	0.126	0.060	-0.067
61	324,654	324,260	0.098	0.033	-0.066
62	310,852	311,808	0.020	-0.036	-0.056
63	313,695	313,562	0.037	-0.026	-0.063
64	361,597	362,163	0.307	0.242	-0.065
65	308,988	319,539	0.010	0.007	-0.003
66	349,458	350,393	0.239	0.177	-0.062
67	340,899	341,094	0.190	0.126	-0.065
68	346,544	346,261	0.222	0.154	-0.068
69	300,887	302,233	-0.036	-0.089	-0.053
70	309,798	310,020	0.014	-0.046	-0.060
71	332,571	332,934	0.143	0.081	-0.063
72	346,780	347,605	0.224	0.162	-0.062
73	336,497	336,148	0.165	0.098	-0.067
74	339,340	342,744	0.181	0.135	-0.047
75	344,323	343,657	0.210	0.140	-0.070
76	355,894	356,612	0.275	0.211	-0.064
77	426,509	432,602	0.674	0.631	-0.044
78	314,600	314,431	0.042	-0.021	-0.063
79	314,134	313,313	0.039	-0.028	-0.067
80	339,238	342,148	0.181	0.132	-0.049
81	324,831	327,819	0.099	0.052	-0.047
82	285,079	287,464	-0.125	-0.170	-0.045
83	279,216	278,155	-0.158	-0.222	-0.063
84	286,493	286,504	-0.117	-0.175	-0.058
85	302,510	310,245	-0.027	-0.044	-0.018
86	314,197	317,897	0.039	-0.002	-0.042
87	401,756	405,752	0.534	0.482	-0.052
88	327,003	327,572	0.112	0.051	-0.061
89	347,041	348,101	0.225	0.164	-0.061
90	338,371	346,246	0.176	0.154	-0.022
91	404,000	415,943	0.547	0.539	-0.008
92	411,736	418,370	0.591	0.552	-0.039
93	464,725	470,028	0.890	0.837	-0.053
94	361,408	375,527	0.306	0.316	0.009
95	335,790	350,059	0.161	0.175	0.014
96	373,852	376,465	0.377	0.321	-0.056
97	380,589	389,228	0.415	0.391	-0.023
98	334,545	348,261	0.154	0.165	0.011
99	329,627	330,484	0.127	0.067	-0.059
100	321,887	321,136	0.083	0.016	-0.067
101	347,792	363,112	0.229	0.247	0.018
102	355,981	373,621	0.276	0.305	0.030
103	345,212	356,482	0.215	0.211	-0.004
104	345,296	364,587	0.215	0.255	0.040
105	345,720	363,814	0.218	0.251	0.034
106	89,151	89,151	-1.233	-1.264	-0.032
107	86,289	86,289	-1.249	-1.280	-0.031
108	83,078	83,078	-1.267	-1.298	-0.031

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
109	30,330	30,330	-1.565	-1.589	-0.024
110	140,424	140,997	-0.943	-0.978	-0.035
111	108,440	108,440	-1.124	-1.158	-0.034
112	166,960	168,142	-0.793	-0.828	-0.036
113	186,437	186,437	-0.683	-0.728	-0.045
114	227,999	227,583	-0.448	-0.501	-0.053
115	212,104	212,104	-0.538	-0.586	-0.048
116	258,436	259,087	-0.276	-0.327	-0.051
117	187,608	187,608	-0.676	-0.721	-0.045
118	236,062	236,100	-0.402	-0.454	-0.051
119	206,705	206,705	-0.568	-0.616	-0.047
120	212,637	212,722	-0.535	-0.583	-0.048
121	227,103	227,393	-0.453	-0.502	-0.049
122	245,496	246,033	-0.349	-0.399	-0.050
123	254,830	254,830	-0.296	-0.350	-0.054
124	274,970	276,178	-0.182	-0.232	-0.050
125	285,893	285,893	-0.121	-0.179	-0.058
126	289,880	290,290	-0.098	-0.155	-0.056
127	297,401	296,475	-0.056	-0.120	-0.065
128	271,972	273,174	-0.199	-0.249	-0.050
129	280,645	280,304	-0.150	-0.210	-0.059
130	258,287	258,287	-0.277	-0.331	-0.054
131	257,307	257,490	-0.282	-0.336	-0.053
132	225,047	225,062	-0.465	-0.514	-0.050
133	238,773	240,505	-0.387	-0.429	-0.042
134	186,786	186,786	-0.681	-0.726	-0.045
135	190,083	190,083	-0.662	-0.707	-0.045
136	152,602	152,620	-0.874	-0.914	-0.040
137	159,090	159,562	-0.837	-0.876	-0.038
138	223,258	223,258	-0.475	-0.524	-0.050
139	213,188	213,134	-0.532	-0.580	-0.049
140	248,337	248,337	-0.333	-0.386	-0.053
141	216,663	217,161	-0.512	-0.558	-0.046
142	248,600	249,088	-0.331	-0.382	-0.050
143	252,183	252,183	-0.311	-0.365	-0.054
144	318,386	317,876	0.063	-0.002	-0.065
145	267,376	267,081	-0.225	-0.283	-0.057
146	296,216	296,339	-0.062	-0.121	-0.059
147	291,322	291,322	-0.090	-0.149	-0.059
148	289,028	288,962	-0.103	-0.162	-0.059
149	267,054	267,090	-0.227	-0.283	-0.055
150	264,341	264,108	-0.242	-0.299	-0.057
151	290,180	290,180	-0.096	-0.155	-0.059
152	323,407	327,102	0.091	0.049	-0.043
153	317,314	318,509	0.057	0.001	-0.056
154	335,319	335,424	0.159	0.094	-0.064
155	312,633	312,909	0.031	-0.030	-0.060
156	313,973	313,479	0.038	-0.027	-0.065
157	310,778	311,430	0.020	-0.038	-0.058
158	316,562	318,612	0.053	0.002	-0.051
159	292,117	295,161	-0.085	-0.128	-0.042
160	294,906	294,934	-0.070	-0.129	-0.059
161	298,573	299,225	-0.049	-0.105	-0.056
162	297,870	297,882	-0.053	-0.113	-0.060

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
163	292,614	292,614	-0.083	-0.142	-0.059
164	299,091	300,212	-0.046	-0.100	-0.054
165	286,939	287,765	-0.115	-0.168	-0.054
166	285,094	285,864	-0.125	-0.179	-0.054
167	287,435	287,435	-0.112	-0.170	-0.058
168	310,234	310,772	0.017	-0.042	-0.059
169	332,249	334,767	0.141	0.091	-0.051
170	300,425	300,425	-0.038	-0.099	-0.060
171	335,877	336,778	0.162	0.102	-0.060
172	332,677	333,269	0.144	0.083	-0.061
173	340,646	352,028	0.189	0.186	-0.003
174	310,483	314,881	0.018	-0.019	-0.037
175	308,475	308,331	0.007	-0.055	-0.062
176	331,115	335,028	0.135	0.092	-0.043
177	304,529	309,494	-0.015	-0.049	-0.033
178	303,928	309,039	-0.019	-0.051	-0.032
179	306,968	311,958	-0.002	-0.035	-0.034
180	300,864	305,675	-0.036	-0.070	-0.034
181	306,453	308,762	-0.004	-0.053	-0.048
182	299,119	300,834	-0.046	-0.096	-0.051
183	274,672	274,672	-0.184	-0.241	-0.057
184	280,555	282,763	-0.151	-0.196	-0.045
185	283,970	283,970	-0.132	-0.189	-0.058
186	290,918	292,934	-0.092	-0.140	-0.048
187	287,346	287,375	-0.112	-0.171	-0.058
188	291,256	291,876	-0.090	-0.146	-0.056
189	294,958	299,981	-0.069	-0.101	-0.032
190	376,600	380,469	0.392	0.343	-0.049
191	474,079	480,029	0.943	0.892	-0.051
192	519,443	526,485	1.199	1.148	-0.051
193	533,484	553,259	1.279	1.296	0.017
194	523,479	525,770	1.222	1.145	-0.078
195	462,987	469,161	0.880	0.832	-0.048
196	443,300	444,316	0.769	0.695	-0.074
197	469,645	474,868	0.918	0.864	-0.054
198	373,332	379,379	0.374	0.337	-0.037
199	403,482	413,698	0.544	0.526	-0.018
200	358,131	366,966	0.288	0.268	-0.019
201	449,588	453,709	0.805	0.747	-0.058
202	410,283	415,930	0.582	0.539	-0.044
203	382,794	390,555	0.427	0.399	-0.028
204	410,392	420,669	0.583	0.565	-0.018
205	407,638	414,101	0.567	0.528	-0.039
206	357,393	373,278	0.284	0.303	0.020
207	358,114	378,385	0.288	0.331	0.044
208	356,641	375,294	0.279	0.314	0.035
209	354,252	371,964	0.266	0.296	0.030
210	330,641	338,851	0.132	0.113	-0.019
211	379,735	387,930	0.410	0.384	-0.026
212	335,873	355,668	0.162	0.206	0.044
213	353,763	368,932	0.263	0.279	0.016
214	380,015	390,749	0.411	0.400	-0.012
215	382,019	389,010	0.423	0.390	-0.033
216	345,736	362,691	0.218	0.245	0.027

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
217	352,885	369,341	0.258	0.282	0.024
218	348,628	368,309	0.234	0.276	0.042
219	339,481	361,214	0.182	0.237	0.054
220	327,775	332,089	0.116	0.076	-0.040
221	327,311	335,315	0.113	0.094	-0.020
222	338,174	356,858	0.175	0.213	0.038
223	337,486	349,725	0.171	0.173	0.002
224	329,433	338,308	0.125	0.110	-0.015
225	327,463	331,874	0.114	0.075	-0.039
226	326,794	330,074	0.111	0.065	-0.046
227	322,488	325,510	0.086	0.040	-0.046
228	330,558	343,305	0.132	0.138	0.006
229	328,232	341,665	0.119	0.129	0.010
230	320,818	324,154	0.077	0.032	-0.045
231	327,621	337,215	0.115	0.104	-0.011
232	325,211	328,042	0.102	0.054	-0.048
233	322,976	326,415	0.089	0.045	-0.044
234	315,998	317,075	0.050	-0.007	-0.056
235	321,218	323,243	0.079	0.027	-0.052
236	321,128	325,506	0.079	0.040	-0.039
237	318,368	319,250	0.063	0.005	-0.058
238	328,863	330,288	0.122	0.066	-0.056
239	328,823	338,817	0.122	0.113	-0.009
240	304,743	309,935	-0.014	-0.046	-0.032
241	356,231	370,756	0.277	0.289	0.012
242	329,672	333,817	0.127	0.086	-0.041
243	387,264	396,892	0.452	0.434	-0.019
244	434,771	440,937	0.721	0.677	-0.044
245	456,985	465,353	0.846	0.811	-0.035
246	430,017	435,918	0.694	0.649	-0.045
247	379,449	392,598	0.408	0.410	0.002
248	353,124	360,840	0.259	0.235	-0.025
249	443,013	450,429	0.767	0.729	-0.039
250	440,895	447,404	0.755	0.712	-0.043
251	464,439	471,291	0.889	0.844	-0.045
252	482,872	495,031	0.993	0.975	-0.018
253	518,249	530,871	1.193	1.173	-0.020
254	444,966	455,992	0.778	0.760	-0.019
255	468,863	474,945	0.914	0.864	-0.049
256	481,876	504,780	0.987	1.029	0.042
257	483,373	505,427	0.996	1.032	0.037
258	463,930	488,348	0.886	0.938	0.052
259	483,678	504,544	0.997	1.027	0.030
260	507,068	527,106	1.129	1.152	0.022
261	483,286	506,724	0.995	1.039	0.044
262	516,149	534,958	1.181	1.195	0.014
263	506,994	524,309	1.129	1.136	0.007
264	529,325	579,057	1.255	1.439	0.183
265	556,234	598,254	1.407	1.544	0.137
266	603,870	630,271	1.677	1.721	0.044
267	580,463	615,771	1.544	1.641	0.097
268	563,843	606,201	1.450	1.588	0.138
269	626,667	646,269	1.805	1.809	0.004
270	596,325	620,542	1.634	1.667	0.033

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
271	571,397	599,733	1.493	1.553	0.060
272	562,368	594,685	1.442	1.525	0.083
273	516,959	534,750	1.185	1.194	0.009
274	494,465	511,248	1.058	1.064	0.006
275	496,452	520,658	1.069	1.116	0.047
276	489,346	505,742	1.029	1.034	0.005
277	549,274	589,437	1.368	1.496	0.128
278	519,750	555,204	1.201	1.307	0.106
279	517,586	528,112	1.189	1.157	-0.031
280	517,641	524,511	1.189	1.138	-0.052
281	518,384	526,876	1.193	1.151	-0.043
282	461,019	480,531	0.869	0.895	0.026
283	484,149	506,319	1.000	1.037	0.037
284	469,580	486,474	0.918	0.928	0.010
285	467,910	489,258	0.908	0.943	0.035
286	475,309	492,225	0.950	0.959	0.010
287	436,645	440,274	0.731	0.673	-0.059
288	478,389	498,424	0.967	0.994	0.026
289	505,568	525,636	1.121	1.144	0.023
290	445,977	449,899	0.784	0.726	-0.058
291	449,322	453,174	0.803	0.744	-0.059
292	436,434	438,671	0.730	0.664	-0.066
293	431,087	434,033	0.700	0.638	-0.062
294	430,739	446,540	0.698	0.707	0.009
295	342,198	358,704	0.198	0.223	0.025
296	403,458	416,535	0.544	0.542	-0.002
297	429,654	435,059	0.692	0.644	-0.048
298	407,674	418,403	0.568	0.552	-0.015
299	419,881	435,775	0.637	0.648	0.011
300	440,514	449,176	0.753	0.722	-0.031
301	434,360	442,031	0.719	0.683	-0.036
302	408,030	414,411	0.570	0.530	-0.040
303	407,067	412,896	0.564	0.522	-0.042
304	439,211	458,267	0.746	0.772	0.026
305	482,160	502,607	0.989	1.017	0.028
306	433,842	444,153	0.716	0.694	-0.021
307	438,835	446,853	0.744	0.709	-0.035
308	413,347	419,077	0.600	0.556	-0.044
309	411,476	419,297	0.589	0.557	-0.032
310	524,151	544,818	1.226	1.250	0.024
311	452,182	456,009	0.819	0.760	-0.060
312	445,337	455,106	0.781	0.755	-0.026
313	409,894	416,452	0.580	0.541	-0.039
314	348,516	349,329	0.233	0.171	-0.062
315	350,544	354,526	0.245	0.200	-0.045
316	402,973	408,888	0.541	0.500	-0.041
317	330,583	344,185	0.132	0.143	0.011
318	356,921	373,744	0.281	0.306	0.025
319	388,410	394,758	0.459	0.422	-0.037
320	382,758	390,373	0.427	0.398	-0.029
321	416,265	424,377	0.616	0.585	-0.031
322	392,762	399,284	0.483	0.447	-0.037
323	380,355	387,401	0.413	0.381	-0.032
324	382,391	390,727	0.425	0.400	-0.025

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
325	373,400	376,786	0.374	0.323	-0.051
326	341,510	359,596	0.194	0.228	0.034
327	352,924	369,108	0.258	0.280	0.022
328	372,655	376,323	0.370	0.320	-0.050
329	376,467	379,239	0.391	0.336	-0.055
330	374,370	377,474	0.379	0.326	-0.053
331	377,621	381,625	0.398	0.349	-0.049
332	360,301	375,083	0.300	0.313	0.013
333	361,305	375,169	0.306	0.314	0.008
334	406,017	413,639	0.558	0.526	-0.032
335	405,301	411,935	0.554	0.517	-0.038
336	329,844	334,010	0.128	0.087	-0.041
337	338,335	351,956	0.176	0.186	0.010
338	350,952	369,730	0.247	0.284	0.037
339	349,761	367,827	0.240	0.273	0.033
340	360,898	376,892	0.303	0.323	0.020
341	345,350	354,389	0.215	0.199	-0.016
342	411,075	416,850	0.587	0.544	-0.043
343	410,474	414,565	0.584	0.531	-0.052
344	351,722	364,975	0.251	0.257	0.006
345	366,772	376,236	0.337	0.320	-0.017
346	366,152	374,026	0.333	0.307	-0.026
347	378,487	396,575	0.403	0.432	0.029
348	360,055	361,311	0.299	0.237	-0.061
349	337,513	340,979	0.171	0.125	-0.046
350	360,475	358,149	0.301	0.220	-0.081
351	355,926	355,124	0.275	0.203	-0.072
352	338,376	342,744	0.176	0.135	-0.041
353	351,632	349,924	0.251	0.174	-0.077
354	336,243	340,626	0.164	0.123	-0.041
355	331,905	332,099	0.139	0.076	-0.063
356	329,608	330,466	0.126	0.067	-0.059
357	309,862	314,302	0.015	-0.022	-0.037
358	323,314	324,029	0.091	0.032	-0.059
359	325,758	325,795	0.105	0.041	-0.063
360	343,798	348,724	0.207	0.168	-0.039
361	326,655	326,161	0.110	0.043	-0.066
362	329,464	329,669	0.126	0.063	-0.063
363	306,868	306,868	-0.002	-0.063	-0.061
364	328,755	329,434	0.122	0.061	-0.060
365	335,802	341,030	0.161	0.125	-0.036
366	353,713	355,855	0.263	0.207	-0.056
367	331,039	330,740	0.135	0.069	-0.066
368	311,661	311,330	0.025	-0.038	-0.064
369	311,356	311,691	0.023	-0.037	-0.060
370	306,771	307,245	-0.003	-0.061	-0.058
371	304,134	303,283	-0.018	-0.083	-0.065
372	314,827	314,810	0.043	-0.019	-0.062
373	335,803	333,226	0.161	0.082	-0.079
374	351,779	351,741	0.252	0.184	-0.067
375	343,062	344,766	0.202	0.146	-0.057
376	324,792	329,713	0.099	0.063	-0.036
377	375,082	391,645	0.383	0.405	0.021
378	370,646	384,391	0.358	0.365	0.006

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
379	354,332	364,911	0.266	0.257	-0.009
380	371,592	388,091	0.364	0.385	0.021
381	347,490	347,452	0.228	0.161	-0.067
382	410,465	418,820	0.583	0.555	-0.029
383	399,526	408,100	0.522	0.495	-0.026
384	351,186	354,056	0.248	0.197	-0.051
385	338,972	339,896	0.179	0.119	-0.060
386	348,071	348,848	0.231	0.168	-0.062
387	355,504	366,206	0.273	0.264	-0.009
388	335,801	351,455	0.161	0.183	0.021
389	327,710	329,535	0.116	0.062	-0.054
390	332,695	340,718	0.144	0.124	-0.020
391	335,934	345,760	0.162	0.151	-0.011
392	333,905	334,112	0.151	0.087	-0.064
393	343,113	343,026	0.203	0.136	-0.066
394	325,999	326,768	0.106	0.047	-0.059
395	322,931	324,550	0.089	0.034	-0.054
396	269,916	271,098	-0.211	-0.260	-0.050
397	330,205	328,472	0.130	0.056	-0.074
398	77,462	77,462	-1.299	-1.329	-0.030
399	145,700	145,700	-0.913	-0.952	-0.039
400	145,916	145,916	-0.912	-0.951	-0.039
401	182,704	182,641	-0.704	-0.748	-0.045
402	255,691	256,462	-0.291	-0.341	-0.050
403	235,084	237,320	-0.408	-0.447	-0.039
404	284,395	284,395	-0.129	-0.187	-0.058
405	327,248	327,226	0.113	0.049	-0.064
406	315,560	315,985	0.047	-0.013	-0.060
407	317,545	317,974	0.058	-0.002	-0.060
408	260,010	259,482	-0.267	-0.325	-0.058
409	267,589	267,831	-0.224	-0.278	-0.054
410	193,107	190,193	-0.645	-0.707	-0.062
411	324,346	328,759	0.097	0.058	-0.039
412	421,070	426,591	0.643	0.597	-0.046
413	459,219	466,205	0.859	0.816	-0.043
414	470,853	479,151	0.925	0.887	-0.037
415	526,766	538,365	1.241	1.214	-0.027
416	588,508	616,533	1.590	1.645	0.055
417	589,586	616,624	1.596	1.646	0.050
418	613,603	632,279	1.732	1.732	0.001
419	628,696	648,952	1.817	1.824	0.007
420	558,459	593,151	1.420	1.516	0.096
421	487,782	503,173	1.020	1.020	-0.001
422	528,211	546,889	1.249	1.261	0.012
423	457,346	474,291	0.848	0.861	0.012
424	455,307	477,029	0.837	0.876	0.039
425	435,262	440,324	0.724	0.673	-0.050
426	436,793	439,993	0.732	0.671	-0.061
427	408,187	416,646	0.571	0.543	-0.028
428	379,056	392,452	0.406	0.409	0.003
429	384,685	399,912	0.438	0.450	0.012
430	273,830	273,587	-0.189	-0.247	-0.058
431	341,146	345,383	0.192	0.149	-0.042
432	329,107	329,673	0.124	0.063	-0.061

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
433	314,068	314,302	0.039	-0.022	-0.061
434	295,817	295,817	-0.065	-0.124	-0.060
435	297,886	303,337	-0.053	-0.083	-0.030
436	325,060	325,060	0.101	0.037	-0.063
437	317,725	323,146	0.059	0.027	-0.033
438	352,956	350,819	0.258	0.179	-0.079
439	324,846	328,504	0.100	0.056	-0.043
440	340,103	336,640	0.186	0.101	-0.085
441	336,819	334,876	0.167	0.091	-0.076
442	342,548	345,297	0.200	0.149	-0.051
443	359,376	371,546	0.295	0.294	-0.001
444	245,231	245,231	-0.350	-0.403	-0.053
445	368,701	377,917	0.347	0.329	-0.019
446	376,857	379,555	0.394	0.338	-0.056
447	339,496	352,505	0.182	0.189	0.006
448	380,168	387,918	0.412	0.384	-0.028
449	354,713	370,645	0.268	0.289	0.020
450	331,174	345,558	0.135	0.150	0.015
451	342,027	360,097	0.197	0.231	0.034
452	333,703	346,411	0.150	0.155	0.005
453	317,604	318,274	0.059	0.000	-0.059
454	329,407	331,533	0.125	0.073	-0.052
455	330,303	327,620	0.130	0.051	-0.079
456	320,666	322,789	0.076	0.025	-0.051
457	341,315	346,265	0.193	0.154	-0.038
458	269,145	269,145	-0.215	-0.271	-0.056
459	297,013	297,019	-0.058	-0.117	-0.060
460	330,095	330,661	0.129	0.068	-0.061
461	374,912	379,368	0.383	0.337	-0.046
462	324,593	327,226	0.098	0.049	-0.049
463	317,757	317,896	0.059	-0.002	-0.062
464	109,840	109,955	-1.116	-1.149	-0.034
465	81,472	81,552	-1.276	-1.306	-0.030
466	131,319	131,194	-0.994	-1.032	-0.038
467	83,112	83,112	-1.267	-1.298	-0.031
468	136,430	136,430	-0.965	-1.003	-0.038
469	129,165	129,165	-1.006	-1.043	-0.037
470	145,689	145,689	-0.913	-0.952	-0.039
471	143,636	143,636	-0.925	-0.964	-0.039
472	215,190	215,563	-0.520	-0.567	-0.047
473	284,039	284,169	-0.131	-0.188	-0.057
474	199,926	199,926	-0.607	-0.653	-0.047
475	152,513	153,704	-0.875	-0.908	-0.034
476	286,990	286,990	-0.114	-0.173	-0.058
477	325,754	325,768	0.105	0.041	-0.064
478	326,795	328,687	0.111	0.057	-0.053
479	285,023	285,358	-0.126	-0.182	-0.056
480	297,682	297,188	-0.054	-0.117	-0.063
481	281,222	281,997	-0.147	-0.200	-0.053
482	294,947	299,915	-0.069	-0.101	-0.032
483	280,947	282,624	-0.149	-0.197	-0.048
484	464,182	468,009	0.887	0.826	-0.061
485	318,870	322,394	0.066	0.023	-0.043
486	251,236	251,373	-0.317	-0.369	-0.053

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
487	430,611	433,470	0.697	0.635	-0.062
488	354,109	367,831	0.265	0.273	0.008
489	353,759	369,578	0.263	0.283	0.020
490	345,798	346,869	0.218	0.158	-0.060
491	271,716	270,707	-0.201	-0.263	-0.062
492	445,467	454,335	0.781	0.750	-0.031
493	471,643	480,003	0.929	0.892	-0.037
494	518,722	532,824	1.195	1.183	-0.012
495	540,502	586,368	1.318	1.479	0.160
496	638,318	655,434	1.871	1.860	-0.011
497	626,627	642,723	1.805	1.790	-0.015
498	540,004	547,161	1.316	1.263	-0.053
499	534,964	546,605	1.287	1.259	-0.028
500	505,362	522,256	1.120	1.125	0.005
501	463,902	469,436	0.886	0.834	-0.052
502	424,867	431,139	0.665	0.622	-0.042
503	431,064	437,277	0.700	0.656	-0.044
504	430,688	432,962	0.698	0.633	-0.065
505	410,363	416,008	0.583	0.539	-0.044
506	421,351	427,209	0.645	0.601	-0.044
507	415,407	423,250	0.611	0.579	-0.032
508	402,496	411,920	0.538	0.516	-0.022
509	330,683	338,641	0.133	0.112	-0.020
510	373,339	376,171	0.374	0.319	-0.054
511	287,467	287,557	-0.112	-0.170	-0.058
512	378,597	381,989	0.403	0.351	-0.052
513	360,931	376,764	0.303	0.323	0.019
514	339,858	354,861	0.184	0.202	0.017
515	343,378	347,258	0.204	0.160	-0.045
516	368,428	384,351	0.346	0.364	0.018
517	362,692	366,430	0.313	0.265	-0.048
518	330,310	333,647	0.130	0.085	-0.046
519	315,797	315,659	0.048	-0.015	-0.063
520	305,318	305,940	-0.011	-0.068	-0.057
521	323,679	329,082	0.093	0.059	-0.033
522	325,889	325,573	0.105	0.040	-0.065
523	322,763	323,515	0.088	0.029	-0.059
524	331,320	331,366	0.136	0.072	-0.064
525	339,774	342,048	0.184	0.131	-0.053
526	340,031	338,792	0.185	0.113	-0.072
527	348,479	347,870	0.233	0.163	-0.070
528	349,962	352,798	0.241	0.190	-0.051
529	344,643	345,826	0.211	0.152	-0.060
530	377,560	393,928	0.397	0.417	0.020
531	312,972	313,061	0.032	-0.029	-0.061
532	460,514	465,687	0.866	0.813	-0.053
533	464,049	466,937	0.886	0.820	-0.066
534	464,452	467,955	0.889	0.826	-0.063
535	460,750	463,700	0.868	0.802	-0.066
536	462,178	465,719	0.876	0.813	-0.063
537	480,076	485,938	0.977	0.925	-0.052
538	482,774	494,888	0.992	0.974	-0.018
539	492,164	497,074	1.045	0.986	-0.059
540	496,106	501,948	1.068	1.013	-0.054

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
541	495,083	498,001	1.062	0.991	-0.070
542	479,422	492,693	0.973	0.962	-0.011
543	474,902	479,543	0.948	0.890	-0.058
544	474,088	475,812	0.943	0.869	-0.074
545	460,524	465,306	0.866	0.811	-0.055
546	463,553	467,818	0.884	0.825	-0.059
547	474,362	479,020	0.945	0.887	-0.058
548	466,730	476,322	0.901	0.872	-0.030
549	458,753	464,198	0.856	0.805	-0.052
550	449,856	455,455	0.806	0.757	-0.049
551	459,762	465,905	0.862	0.814	-0.048
552	461,538	465,248	0.872	0.811	-0.061
553	462,481	469,161	0.877	0.832	-0.045
554	463,689	474,184	0.884	0.860	-0.024
555	475,976	484,493	0.954	0.917	-0.037
556	480,103	500,810	0.977	1.007	0.030
557	497,750	508,029	1.077	1.047	-0.030
558	481,893	498,528	0.987	0.994	0.007
559	512,508	523,283	1.160	1.131	-0.029
560	520,563	523,859	1.206	1.134	-0.072
561	497,745	504,583	1.077	1.028	-0.049
562	498,809	502,212	1.083	1.015	-0.068
563	501,309	504,594	1.097	1.028	-0.069
564	502,813	511,709	1.105	1.067	-0.038
565	516,077	518,995	1.180	1.107	-0.073
566	505,607	508,351	1.121	1.048	-0.073
567	497,150	498,407	1.073	0.994	-0.080
568	493,046	494,442	1.050	0.972	-0.079
569	486,033	491,639	1.011	0.956	-0.054
570	490,310	497,627	1.035	0.989	-0.045
571	488,358	495,876	1.024	0.980	-0.044
572	447,656	453,713	0.794	0.747	-0.047
573	506,879	510,875	1.128	1.062	-0.066
574	510,484	515,830	1.149	1.090	-0.059
575	521,285	523,550	1.210	1.132	-0.078
576	450,469	453,069	0.810	0.743	-0.066
577	475,018	489,278	0.948	0.943	-0.005
578	453,074	454,002	0.824	0.749	-0.076
579	441,381	443,377	0.758	0.690	-0.068
580	454,403	456,445	0.832	0.762	-0.070
581	459,670	465,490	0.862	0.812	-0.050
582	439,310	445,625	0.747	0.702	-0.044
583	443,311	450,526	0.769	0.729	-0.040
584	436,190	449,416	0.729	0.723	-0.006
585	440,610	447,394	0.754	0.712	-0.042
586	456,815	466,818	0.845	0.819	-0.026
587	451,573	456,982	0.816	0.765	-0.051
588	522,202	537,905	1.215	1.212	-0.004
589	491,993	509,046	1.044	1.052	0.008
590	475,482	497,586	0.951	0.989	0.038
591	490,586	504,622	1.036	1.028	-0.008
592	473,234	494,107	0.938	0.970	0.032
593	494,197	505,943	1.057	1.035	-0.022
594	475,800	485,126	0.953	0.920	-0.032

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
595	503,279	513,432	1.108	1.076	-0.032
596	495,030	506,010	1.061	1.036	-0.026
597	537,309	551,325	1.300	1.286	-0.015
598	500,866	514,272	1.094	1.081	-0.013
599	486,496	499,813	1.013	1.001	-0.012
600	493,914	502,491	1.055	1.016	-0.039
601	533,874	540,775	1.281	1.227	-0.054
602	536,059	547,611	1.293	1.265	-0.028
603	528,579	538,035	1.251	1.212	-0.039
604	527,287	537,354	1.244	1.208	-0.035
605	537,297	544,584	1.300	1.248	-0.052
606	526,359	533,168	1.239	1.185	-0.053
607	522,243	529,706	1.215	1.166	-0.049
608	525,180	528,379	1.232	1.159	-0.073
609	530,396	536,748	1.261	1.205	-0.056
610	521,613	530,063	1.212	1.168	-0.043
611	525,942	528,627	1.236	1.160	-0.076
612	523,040	528,024	1.220	1.157	-0.063
613	524,147	529,316	1.226	1.164	-0.062
614	542,427	546,468	1.329	1.259	-0.071
615	517,798	522,265	1.190	1.125	-0.065
616	526,655	536,248	1.240	1.202	-0.038
617	522,966	528,424	1.219	1.159	-0.060
618	536,739	540,983	1.297	1.228	-0.069
619	518,253	522,376	1.193	1.126	-0.067
620	535,534	538,773	1.290	1.216	-0.074
621	532,126	535,784	1.271	1.200	-0.071
622	511,545	516,314	1.155	1.092	-0.062
623	514,512	516,999	1.172	1.096	-0.075
624	531,948	537,157	1.270	1.207	-0.063
625	531,513	535,049	1.268	1.196	-0.072
626	536,485	541,458	1.296	1.231	-0.065
627	540,152	545,128	1.316	1.251	-0.065
628	519,077	523,677	1.197	1.133	-0.064
629	529,173	533,297	1.254	1.186	-0.068
630	551,424	552,876	1.380	1.294	-0.086
631	511,789	518,899	1.156	1.107	-0.050
632	512,099	514,607	1.158	1.083	-0.075
633	505,893	509,701	1.123	1.056	-0.067
634	509,937	513,458	1.146	1.077	-0.069
635	515,959	520,761	1.180	1.117	-0.063
636	521,082	526,032	1.209	1.146	-0.063
637	522,926	525,532	1.219	1.143	-0.076
638	533,962	536,189	1.282	1.202	-0.079
639	526,381	529,974	1.239	1.168	-0.071
640	539,160	540,716	1.311	1.227	-0.084
641	538,995	542,592	1.310	1.237	-0.073
642	540,859	544,650	1.320	1.249	-0.072
643	531,908	536,220	1.270	1.202	-0.068
644	530,663	532,517	1.263	1.182	-0.081
645	534,500	536,340	1.285	1.203	-0.082
646	515,883	518,627	1.179	1.105	-0.074
647	509,909	512,770	1.146	1.073	-0.073
648	506,882	512,749	1.128	1.073	-0.056

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
649	541,719	545,318	1.325	1.252	-0.073
650	521,599	525,062	1.212	1.141	-0.071
651	540,752	548,930	1.320	1.272	-0.048
652	517,765	525,640	1.190	1.144	-0.046
653	509,399	513,215	1.143	1.075	-0.067
654	491,242	495,673	1.040	0.979	-0.062
655	510,413	515,694	1.148	1.089	-0.059
656	515,331	519,391	1.176	1.109	-0.067
657	514,666	522,140	1.172	1.125	-0.048
658	514,127	520,173	1.169	1.114	-0.056
659	511,429	518,524	1.154	1.105	-0.050
660	521,111	525,254	1.209	1.142	-0.067
661	497,145	503,520	1.073	1.022	-0.052
662	487,266	494,081	1.018	0.970	-0.048
663	485,707	491,795	1.009	0.957	-0.052
664	517,803	524,236	1.190	1.136	-0.054
665	512,833	519,249	1.162	1.109	-0.053
666	519,171	520,557	1.198	1.116	-0.082
667	505,050	511,663	1.118	1.067	-0.051
668	510,747	514,833	1.150	1.084	-0.066
669	488,115	494,766	1.022	0.974	-0.049
670	507,378	512,721	1.131	1.073	-0.059
671	488,865	494,346	1.027	0.971	-0.055
672	475,214	488,434	0.949	0.939	-0.011
673	465,646	467,241	0.895	0.822	-0.074
674	494,281	498,818	1.057	0.996	-0.061
675	464,551	468,104	0.889	0.826	-0.063
676	470,050	470,767	0.920	0.841	-0.079
677	472,436	474,073	0.934	0.859	-0.074
678	432,787	443,021	0.710	0.688	-0.022
679	422,228	432,461	0.650	0.630	-0.020
680	412,887	425,604	0.597	0.592	-0.005
681	441,823	453,495	0.761	0.746	-0.015
682	445,615	458,966	0.782	0.776	-0.006
683	415,740	427,177	0.613	0.601	-0.013
684	438,462	452,898	0.742	0.743	0.001
685	437,089	448,781	0.734	0.720	-0.014
686	410,843	424,005	0.586	0.583	-0.002
687	444,940	460,724	0.778	0.786	0.007
688	455,842	471,932	0.840	0.848	0.008
689	412,674	431,365	0.596	0.624	0.028
690	476,723	489,351	0.958	0.944	-0.014
691	472,710	496,749	0.935	0.984	0.049
692	536,833	541,884	1.298	1.233	-0.064
693	534,570	542,149	1.285	1.235	-0.050
694	536,122	540,198	1.294	1.224	-0.070
695	529,152	534,625	1.254	1.193	-0.061
696	549,062	554,999	1.367	1.306	-0.061
697	516,655	521,710	1.184	1.122	-0.062
698	525,725	529,646	1.235	1.166	-0.069
699	536,727	542,830	1.297	1.239	-0.058
700	524,862	528,320	1.230	1.159	-0.071
701	534,216	537,320	1.283	1.208	-0.075
702	537,971	542,492	1.304	1.237	-0.067

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
703	543,161	549,437	1.333	1.275	-0.058
704	541,379	545,501	1.323	1.253	-0.070
705	548,679	553,379	1.365	1.297	-0.068
706	546,063	551,723	1.350	1.288	-0.062
707	535,019	539,689	1.287	1.221	-0.066
708	558,981	561,970	1.423	1.344	-0.079
709	550,161	554,730	1.373	1.304	-0.069
710	543,646	549,824	1.336	1.277	-0.059
711	562,236	564,457	1.441	1.358	-0.083
712	552,328	555,154	1.385	1.307	-0.079
713	553,565	557,534	1.392	1.320	-0.073
714	546,650	550,819	1.353	1.283	-0.070
715	549,617	553,136	1.370	1.296	-0.074
716	555,902	558,464	1.406	1.325	-0.081
717	552,981	555,496	1.389	1.309	-0.080
718	542,237	544,167	1.328	1.246	-0.082
719	562,457	563,881	1.443	1.355	-0.088
720	564,782	568,601	1.456	1.381	-0.075
721	569,569	574,834	1.483	1.415	-0.068
722	511,759	515,183	1.156	1.086	-0.070
723	525,082	530,708	1.231	1.172	-0.060
724	529,810	537,596	1.258	1.210	-0.048
725	537,443	540,922	1.301	1.228	-0.073
726	546,565	550,980	1.353	1.284	-0.069
727	507,502	509,854	1.132	1.057	-0.075
728	521,523	527,957	1.211	1.157	-0.055
729	542,599	546,812	1.330	1.261	-0.070
730	526,574	530,456	1.240	1.170	-0.069
731	548,671	553,724	1.365	1.299	-0.066
732	503,211	507,735	1.108	1.045	-0.063
733	510,814	514,167	1.151	1.081	-0.070
734	507,179	511,252	1.130	1.064	-0.066
735	518,631	522,569	1.195	1.127	-0.068
736	515,503	519,535	1.177	1.110	-0.067
737	516,659	522,554	1.184	1.127	-0.057
738	520,278	527,971	1.204	1.157	-0.047
739	500,309	507,029	1.091	1.041	-0.050
740	513,045	517,505	1.163	1.099	-0.064
741	505,602	509,865	1.121	1.057	-0.064
742	524,751	529,517	1.229	1.165	-0.064
743	530,804	534,703	1.264	1.194	-0.070
744	528,035	530,767	1.248	1.172	-0.076
745	499,760	504,536	1.088	1.027	-0.061
746	497,947	503,525	1.078	1.022	-0.056
747	484,915	490,169	1.004	0.948	-0.056
748	530,077	536,137	1.260	1.202	-0.058
749	495,420	507,165	1.064	1.042	-0.022
750	501,123	506,088	1.096	1.036	-0.060
751	503,320	509,913	1.108	1.057	-0.051
752	495,388	500,852	1.063	1.007	-0.056
753	501,412	507,575	1.098	1.044	-0.053
754	490,102	502,832	1.034	1.018	-0.016
755	488,174	496,738	1.023	0.984	-0.038
756	470,823	475,202	0.925	0.866	-0.059

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
757	472,131	477,469	0.932	0.878	-0.054
758	489,352	494,876	1.029	0.974	-0.055
759	485,407	492,872	1.007	0.963	-0.044
760	509,620	519,315	1.144	1.109	-0.035
761	495,610	502,338	1.065	1.015	-0.049
762	475,987	483,603	0.954	0.912	-0.042
763	472,037	478,958	0.931	0.886	-0.045
764	492,192	496,812	1.045	0.985	-0.061
765	496,401	501,030	1.069	1.008	-0.061
766	498,072	505,327	1.079	1.032	-0.047
767	473,850	479,489	0.942	0.889	-0.053
768	461,018	467,442	0.869	0.823	-0.046
769	469,631	474,112	0.918	0.860	-0.058
770	452,686	456,935	0.822	0.765	-0.057
771	445,593	450,392	0.782	0.729	-0.053
772	435,586	443,064	0.725	0.688	-0.037
773	452,271	456,687	0.820	0.763	-0.056
774	438,192	443,802	0.740	0.692	-0.048
775	448,927	460,983	0.801	0.787	-0.014
776	458,910	468,484	0.857	0.829	-0.029
777	443,549	454,526	0.770	0.752	-0.019
778	455,592	466,396	0.839	0.817	-0.022
779	423,686	428,236	0.658	0.606	-0.052
780	432,026	438,386	0.705	0.662	-0.043
781	401,125	406,478	0.531	0.486	-0.044
782	456,839	466,988	0.846	0.820	-0.025
783	456,816	462,637	0.845	0.796	-0.049
784	436,347	440,826	0.730	0.676	-0.054
785	479,317	484,614	0.973	0.918	-0.055
786	441,278	447,364	0.758	0.712	-0.046
787	407,229	417,455	0.565	0.547	-0.018
788	418,815	429,523	0.631	0.614	-0.017
789	459,287	465,004	0.859	0.809	-0.050
790	391,979	403,892	0.479	0.472	-0.007
791	455,400	465,845	0.837	0.814	-0.024
792	437,026	442,281	0.734	0.684	-0.050
793	446,591	453,789	0.788	0.747	-0.040
794	494,984	511,026	1.061	1.063	0.002
795	490,809	506,100	1.038	1.036	-0.002
796	491,568	505,248	1.042	1.031	-0.011
797	485,635	511,262	1.008	1.065	0.056
798	483,405	503,021	0.996	1.019	0.023
799	479,201	490,301	0.972	0.949	-0.023
800	465,419	474,465	0.894	0.862	-0.033
801	436,027	445,045	0.728	0.699	-0.029
802	426,867	430,562	0.676	0.619	-0.057
803	445,183	452,759	0.780	0.742	-0.038
804	436,420	440,768	0.730	0.676	-0.055
805	461,974	465,196	0.875	0.810	-0.064
806	480,526	482,980	0.979	0.908	-0.071
807	474,663	485,450	0.946	0.922	-0.024
808	463,782	469,991	0.885	0.837	-0.048
809	475,211	480,831	0.949	0.897	-0.053
810	468,895	477,718	0.914	0.879	-0.034

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
811	455,609	469,568	0.839	0.834	-0.004
812	441,765	451,105	0.760	0.733	-0.028
813	474,854	489,260	0.947	0.943	-0.004
814	451,246	469,998	0.814	0.837	0.023
815	476,061	496,643	0.954	0.984	0.030
816	427,441	443,319	0.679	0.690	0.010
817	460,539	483,091	0.867	0.909	0.043
818	459,031	468,690	0.858	0.830	-0.028
819	475,356	480,976	0.950	0.897	-0.053
820	467,477	472,602	0.906	0.851	-0.054
821	430,432	435,600	0.696	0.647	-0.049
822	442,516	445,419	0.765	0.701	-0.063
823	443,770	447,600	0.772	0.713	-0.058
824	449,666	451,943	0.805	0.737	-0.068
825	452,180	459,240	0.819	0.778	-0.042
826	473,135	476,230	0.938	0.871	-0.066
827	437,926	440,245	0.739	0.673	-0.066
828	451,995	457,890	0.818	0.770	-0.048
829	471,330	476,855	0.927	0.875	-0.053
830	426,827	438,714	0.676	0.664	-0.012
831	454,519	459,684	0.832	0.780	-0.053
832	450,901	457,035	0.812	0.765	-0.047
833	412,981	425,106	0.598	0.589	-0.008
834	421,761	436,589	0.647	0.653	0.005
835	431,963	453,136	0.705	0.744	0.039
836	424,128	444,398	0.661	0.696	0.035
837	417,496	438,834	0.623	0.665	0.042
838	402,776	421,197	0.540	0.568	0.028
839	408,892	425,747	0.575	0.593	0.018
840	394,004	404,914	0.490	0.478	-0.013
841	397,698	409,141	0.511	0.501	-0.010
842	405,997	421,712	0.558	0.570	0.012
843	406,492	423,838	0.561	0.582	0.021
844	407,660	422,484	0.568	0.575	0.007
845	401,099	416,189	0.531	0.540	0.009
846	406,053	421,430	0.559	0.569	0.010
847	404,205	414,701	0.548	0.532	-0.016
848	432,428	455,340	0.708	0.756	0.048
849	410,396	436,229	0.583	0.651	0.067
850	395,633	407,279	0.500	0.491	-0.009
851	429,475	444,084	0.691	0.694	0.003
852	397,818	409,753	0.512	0.504	-0.007
853	363,677	380,709	0.319	0.344	0.025
854	447,977	467,848	0.795	0.825	0.030
855	429,851	447,695	0.693	0.714	0.021
856	385,378	400,754	0.442	0.455	0.013
857	329,906	345,515	0.128	0.150	0.022
858	404,420	417,208	0.549	0.546	-0.004
859	390,283	403,789	0.469	0.472	0.002
860	534,031	546,066	1.282	1.257	-0.025
861	491,187	506,726	1.040	1.039	0.000
862	525,436	537,403	1.233	1.209	-0.025
863	498,557	514,354	1.081	1.082	0.000
864	508,401	533,468	1.137	1.187	0.050

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
865	502,276	516,579	1.102	1.094	-0.009
866	525,830	536,709	1.236	1.205	-0.031
867	494,652	511,129	1.059	1.064	0.004
868	440,310	457,866	0.752	0.770	0.018
869	472,863	488,527	0.936	0.939	0.003
870	438,003	457,247	0.739	0.767	0.027
871	447,451	466,841	0.793	0.819	0.027
872	468,170	495,859	0.910	0.980	0.070
873	454,374	468,158	0.832	0.827	-0.005
874	460,873	476,891	0.868	0.875	0.007
875	495,122	512,350	1.062	1.071	0.009
876	515,886	533,343	1.179	1.186	0.007
877	494,579	519,379	1.059	1.109	0.050
878	468,403	494,696	0.911	0.973	0.062
879	465,602	493,243	0.895	0.965	0.070
880	484,424	503,179	1.002	1.020	0.018
881	427,315	447,057	0.679	0.710	0.032
882	451,983	472,666	0.818	0.852	0.033
883	402,516	427,872	0.539	0.604	0.066
884	427,315	450,453	0.679	0.729	0.050
885	412,742	437,771	0.596	0.659	0.063
886	398,581	430,680	0.516	0.620	0.104
887	420,980	442,409	0.643	0.685	0.042
888	407,000	433,630	0.564	0.636	0.072
889	440,045	457,080	0.751	0.766	0.015
890	401,939	446,948	0.535	0.710	0.174
891	447,288	475,815	0.792	0.869	0.077
892	389,614	407,848	0.466	0.494	0.028
893	372,995	399,229	0.372	0.446	0.075
894	365,280	423,757	0.328	0.582	0.254
895	423,797	446,769	0.659	0.709	0.050
896	388,250	430,950	0.458	0.621	0.164
897	305,344	377,059	-0.011	0.324	0.335
898	364,894	448,716	0.326	0.719	0.394
899	345,814	415,120	0.218	0.534	0.316
900	395,610	454,151	0.500	0.749	0.250
901	334,097	386,096	0.152	0.374	0.222
902	363,074	402,462	0.316	0.464	0.149
903	326,877	367,851	0.111	0.273	0.162
904	343,463	386,037	0.205	0.374	0.169
905	400,137	434,755	0.525	0.642	0.117
906	407,900	434,248	0.569	0.640	0.071
907	380,760	404,802	0.416	0.477	0.062
908	398,910	425,219	0.518	0.590	0.072
909	391,539	421,375	0.477	0.569	0.092
910	425,448	449,939	0.668	0.726	0.058
911	427,162	450,431	0.678	0.729	0.051
912	400,486	425,004	0.527	0.589	0.062
913	379,440	403,526	0.408	0.470	0.062
914	362,612	386,938	0.313	0.379	0.066
915	381,693	407,032	0.421	0.489	0.069
916	349,039	373,095	0.236	0.302	0.066
917	356,307	382,344	0.277	0.353	0.076
918	355,634	386,308	0.274	0.375	0.102

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
919	341,238	379,964	0.192	0.340	0.148
920	366,951	401,405	0.338	0.458	0.121
921	358,058	386,572	0.287	0.377	0.089
922	361,044	392,040	0.304	0.407	0.103
923	397,580	428,528	0.511	0.608	0.097
924	375,339	412,116	0.385	0.518	0.133
925	354,787	393,826	0.269	0.417	0.148
926	340,871	371,918	0.190	0.296	0.106
927	394,150	425,405	0.491	0.591	0.100
928	368,326	402,930	0.345	0.467	0.122
929	385,259	418,441	0.441	0.552	0.111
930	407,833	435,653	0.569	0.647	0.079
931	381,427	422,816	0.419	0.577	0.157
932	396,143	425,909	0.503	0.594	0.091
933	418,697	446,796	0.630	0.709	0.079
934	429,164	452,676	0.689	0.741	0.052
935	442,161	476,840	0.763	0.875	0.112
936	429,859	456,482	0.693	0.762	0.069
937	420,509	448,961	0.640	0.721	0.081
938	443,768	464,946	0.772	0.809	0.037
939	460,429	481,582	0.866	0.901	0.035
940	468,076	495,842	0.909	0.979	0.070
941	417,665	441,653	0.624	0.680	0.056
942	438,370	462,884	0.741	0.798	0.056
943	393,152	421,425	0.486	0.569	0.083
944	410,698	435,011	0.585	0.644	0.059
945	534,599	546,218	1.285	1.257	-0.028
946	525,894	538,162	1.236	1.213	-0.023
947	523,574	535,368	1.223	1.198	-0.025
948	532,221	540,581	1.272	1.226	-0.045
949	518,845	537,273	1.196	1.208	0.012
950	527,892	538,499	1.247	1.215	-0.032
951	528,128	536,547	1.249	1.204	-0.045
952	548,277	555,159	1.362	1.307	-0.056
953	531,750	537,120	1.269	1.207	-0.062
954	537,927	544,622	1.304	1.249	-0.055
955	549,109	556,168	1.367	1.312	-0.055
956	526,184	530,794	1.238	1.172	-0.065
957	527,790	532,084	1.247	1.179	-0.067
958	516,009	526,781	1.180	1.150	-0.030
959	510,264	517,545	1.148	1.099	-0.048
960	505,259	514,032	1.119	1.080	-0.039
961	524,441	532,859	1.228	1.184	-0.044
962	503,793	516,040	1.111	1.091	-0.020
963	526,172	539,439	1.237	1.220	-0.018
964	520,803	531,394	1.207	1.176	-0.032
965	537,487	548,985	1.301	1.273	-0.029
966	533,076	547,770	1.276	1.266	-0.011
967	509,869	524,796	1.145	1.139	-0.006
968	451,677	472,434	0.816	0.850	0.034
969	494,877	510,204	1.061	1.059	-0.002
970	518,716	530,073	1.195	1.168	-0.027
971	517,179	525,051	1.187	1.141	-0.046
972	499,021	516,026	1.084	1.091	0.007

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
973	460,692	479,317	0.867	0.888	0.021
974	424,286	438,045	0.662	0.661	-0.001
975	454,997	472,386	0.835	0.850	0.015
976	422,897	448,743	0.654	0.720	0.066
977	495,427	511,866	1.064	1.068	0.004
978	526,039	533,961	1.237	1.190	-0.047
979	500,888	516,662	1.095	1.094	0.000
980	499,035	511,020	1.084	1.063	-0.021
981	482,643	498,265	0.991	0.993	0.001
982	474,963	495,214	0.948	0.976	0.028
983	415,108	453,359	0.610	0.745	0.135
984	414,623	446,618	0.607	0.708	0.101
985	417,263	475,050	0.622	0.865	0.243
986	522,410	533,424	1.216	1.187	-0.029
987	413,863	437,203	0.603	0.656	0.053
988	571,466	575,101	1.493	1.417	-0.077
989	571,841	580,909	1.496	1.449	-0.047
990	611,689	620,004	1.721	1.664	-0.056
991	615,687	622,966	1.743	1.681	-0.063
992	540,733	549,494	1.320	1.275	-0.044
993	568,664	580,354	1.478	1.446	-0.032
994	530,670	541,657	1.263	1.232	-0.031
995	535,500	543,571	1.290	1.243	-0.047
996	575,038	581,888	1.514	1.454	-0.060
997	543,552	550,985	1.336	1.284	-0.052
998	582,300	588,638	1.555	1.491	-0.063
999	553,959	560,201	1.395	1.335	-0.060
1000	550,034	553,128	1.372	1.295	-0.077
1001	567,323	584,951	1.470	1.471	0.001
1002	571,880	577,567	1.496	1.430	-0.066
1003	571,658	577,853	1.495	1.432	-0.063
1004	580,651	593,456	1.545	1.518	-0.027
1005	539,307	550,170	1.312	1.279	-0.033
1006	528,209	538,565	1.249	1.215	-0.034
1007	540,170	549,693	1.317	1.277	-0.040
1008	496,370	506,415	1.069	1.038	-0.031
1009	513,414	524,387	1.165	1.137	-0.028
1010	510,301	518,948	1.148	1.107	-0.041
1011	503,958	517,695	1.112	1.100	-0.012
1012	520,644	530,147	1.206	1.169	-0.038
1013	526,622	535,802	1.240	1.200	-0.040
1014	536,478	547,592	1.296	1.265	-0.031
1015	509,101	519,245	1.141	1.109	-0.032
1016	499,457	508,419	1.086	1.049	-0.038
1017	498,808	512,222	1.083	1.070	-0.013
1018	519,208	529,864	1.198	1.167	-0.031
1019	526,901	536,141	1.242	1.202	-0.040
1020	539,745	548,163	1.314	1.268	-0.046
1021	496,516	505,930	1.070	1.035	-0.035
1022	503,752	510,505	1.111	1.060	-0.050
1023	539,608	549,103	1.313	1.273	-0.040
1024	526,426	537,663	1.239	1.210	-0.029
1025	524,962	535,391	1.231	1.198	-0.033
1026	531,636	539,899	1.268	1.223	-0.046

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1027	511,905	524,527	1.157	1.138	-0.019
1028	531,726	540,139	1.269	1.224	-0.045
1029	560,131	569,800	1.429	1.387	-0.042
1030	553,321	565,414	1.391	1.363	-0.028
1031	551,490	564,701	1.381	1.359	-0.021
1032	543,189	556,644	1.334	1.315	-0.019
1033	541,946	553,295	1.327	1.296	-0.030
1034	547,000	554,537	1.355	1.303	-0.052
1035	565,480	574,974	1.460	1.416	-0.044
1036	522,605	531,039	1.217	1.174	-0.044
1037	542,104	551,181	1.328	1.285	-0.043
1038	529,570	540,879	1.257	1.228	-0.029
1039	522,720	531,694	1.218	1.177	-0.041
1040	532,611	541,890	1.274	1.233	-0.040
1041	541,308	549,471	1.323	1.275	-0.048
1042	520,701	530,442	1.207	1.170	-0.036
1043	545,381	555,543	1.346	1.309	-0.037
1044	528,967	537,076	1.253	1.207	-0.046
1045	536,558	545,892	1.296	1.256	-0.041
1046	515,082	524,205	1.175	1.136	-0.039
1047	489,809	500,131	1.032	1.003	-0.029
1048	524,112	534,679	1.226	1.194	-0.032
1049	535,737	547,883	1.292	1.267	-0.025
1050	503,892	511,611	1.112	1.066	-0.045
1051	501,524	508,785	1.098	1.051	-0.047
1052	514,351	522,809	1.171	1.128	-0.042
1053	491,435	498,356	1.041	0.993	-0.048
1054	492,461	500,346	1.047	1.004	-0.043
1055	488,347	497,136	1.024	0.987	-0.037
1056	501,167	510,140	1.096	1.058	-0.038
1057	488,560	496,557	1.025	0.983	-0.041
1058	491,143	498,322	1.039	0.993	-0.046
1059	504,029	510,480	1.112	1.060	-0.052
1060	485,836	494,269	1.009	0.971	-0.039
1061	492,832	504,211	1.049	1.026	-0.023
1062	497,810	506,356	1.077	1.037	-0.040
1063	497,235	509,311	1.074	1.054	-0.020
1064	498,272	506,818	1.080	1.040	-0.040
1065	501,942	510,757	1.101	1.062	-0.039
1066	486,007	496,461	1.010	0.983	-0.028
1067	470,807	485,247	0.925	0.921	-0.004
1068	494,674	509,820	1.059	1.057	-0.003
1069	505,344	515,074	1.120	1.086	-0.034
1070	447,184	464,151	0.791	0.805	0.014
1071	462,133	480,313	0.876	0.894	0.018
1072	464,521	479,183	0.889	0.888	-0.001
1073	509,118	523,290	1.141	1.131	-0.010
1074	577,678	586,341	1.529	1.479	-0.050
1075	549,359	562,692	1.369	1.348	-0.020
1076	462,141	473,907	0.876	0.858	-0.017
1077	497,353	509,327	1.075	1.054	-0.021
1078	548,894	561,513	1.366	1.342	-0.024
1079	550,340	560,975	1.374	1.339	-0.035
1080	546,988	572,644	1.355	1.403	0.048

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1081	539,407	549,793	1.312	1.277	-0.035
1082	632,574	643,236	1.839	1.793	-0.046
1083	632,984	647,393	1.841	1.816	-0.026
1084	653,608	665,804	1.958	1.917	-0.041
1085	653,540	666,940	1.957	1.923	-0.034
1086	637,425	650,554	1.866	1.833	-0.033
1087	582,014	594,302	1.553	1.523	-0.030
1088	589,492	598,919	1.595	1.548	-0.047
1089	576,754	591,173	1.523	1.505	-0.018
1090	548,722	565,083	1.365	1.361	-0.003
1091	594,159	615,798	1.622	1.641	0.019
1092	591,121	603,122	1.605	1.571	-0.033
1093	531,932	537,935	1.270	1.212	-0.058
1094	594,098	616,602	1.621	1.646	0.024
1095	533,742	553,659	1.280	1.298	0.018
1096	532,363	553,395	1.272	1.297	0.024
1097	497,909	536,741	1.078	1.205	0.127
1098	505,263	554,545	1.119	1.303	0.184
1099	516,018	545,344	1.180	1.253	0.072
1100	526,050	547,003	1.237	1.262	0.025
1101	502,438	514,405	1.103	1.082	-0.021
1102	521,066	537,901	1.209	1.211	0.003
1103	512,616	528,820	1.161	1.161	0.001
1104	516,402	527,467	1.182	1.154	-0.028
1105	524,817	548,486	1.230	1.270	0.040
1106	530,954	544,011	1.265	1.245	-0.019
1107	509,266	528,143	1.142	1.158	0.016
1108	484,609	504,379	1.003	1.027	0.024
1109	594,558	603,132	1.624	1.571	-0.053
1110	552,941	577,661	1.389	1.431	0.042
1111	508,872	521,816	1.140	1.123	-0.017
1112	444,721	459,676	0.777	0.780	0.003
1113	469,578	484,405	0.918	0.916	-0.001
1114	526,467	540,142	1.239	1.224	-0.015
1115	562,345	563,043	1.442	1.350	-0.092
1116	554,013	562,442	1.395	1.347	-0.048
1117	547,751	558,691	1.359	1.326	-0.033
1118	600,462	604,990	1.657	1.582	-0.076
1119	536,223	537,542	1.294	1.210	-0.085
1120	585,578	589,933	1.573	1.499	-0.075
1121	545,922	547,927	1.349	1.267	-0.082
1122	552,887	561,385	1.388	1.341	-0.047
1123	568,978	575,724	1.479	1.420	-0.059
1124	556,473	558,807	1.409	1.327	-0.082
1125	555,496	557,841	1.403	1.321	-0.082
1126	549,969	551,785	1.372	1.288	-0.084
1127	549,117	558,290	1.367	1.324	-0.043
1128	550,493	550,560	1.375	1.281	-0.094
1129	556,256	563,238	1.408	1.351	-0.056
1130	568,627	573,823	1.477	1.410	-0.068
1131	517,011	534,773	1.186	1.194	0.009
1132	570,279	579,954	1.487	1.443	-0.043
1133	527,743	531,716	1.246	1.177	-0.069
1134	580,203	601,238	1.543	1.561	0.018

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1135	482,278	487,292	0.989	0.932	-0.057
1136	501,206	502,684	1.096	1.017	-0.079
1137	398,171	399,568	0.514	0.448	-0.066
1138	496,744	500,437	1.071	1.005	-0.066
1139	519,014	533,153	1.197	1.185	-0.012
1140	528,170	536,770	1.249	1.205	-0.044
1141	440,141	438,168	0.751	0.661	-0.090
1142	326,253	329,854	0.107	0.064	-0.044
1143	567,618	565,535	1.472	1.364	-0.108
1144	551,323	553,568	1.380	1.298	-0.082
1145	483,311	489,511	0.995	0.945	-0.051
1146	442,536	447,126	0.765	0.711	-0.054
1147	465,335	474,159	0.894	0.860	-0.034
1148	462,976	469,824	0.880	0.836	-0.044
1149	482,634	487,062	0.991	0.931	-0.060
1150	491,898	499,867	1.044	1.002	-0.042
1151	521,012	527,002	1.208	1.151	-0.057
1152	484,610	497,475	1.003	0.988	-0.014
1153	502,312	512,092	1.103	1.069	-0.034
1154	482,991	496,145	0.993	0.981	-0.012
1155	543,102	544,166	1.333	1.246	-0.087
1156	523,452	527,627	1.222	1.155	-0.067
1157	413,687	416,907	0.602	0.544	-0.058
1158	97,544	96,866	-1.185	-1.222	-0.036
1159	147,050	146,824	-0.905	-0.946	-0.041
1160	233,907	235,183	-0.414	-0.459	-0.044
1161	73,360	71,549	-1.322	-1.361	-0.039
1162	159,480	159,423	-0.835	-0.877	-0.041
1163	116,343	115,664	-1.079	-1.118	-0.039
1164	139,495	139,071	-0.948	-0.989	-0.041
1165	119,317	120,155	-1.062	-1.093	-0.031
1166	100,234	100,234	-1.170	-1.203	-0.033
1167	173,801	173,812	-0.754	-0.797	-0.043
1168	206,621	206,818	-0.569	-0.615	-0.046
1169	293,272	298,548	-0.079	-0.109	-0.030
1170	134,019	133,978	-0.979	-1.017	-0.038
1171	131,375	130,021	-0.994	-1.039	-0.045
1172	156,816	156,823	-0.850	-0.891	-0.041
1173	218,802	220,629	-0.500	-0.539	-0.039
1174	194,983	195,192	-0.634	-0.679	-0.045
1175	206,415	206,719	-0.570	-0.616	-0.046
1176	216,192	216,162	-0.515	-0.564	-0.049
1177	216,514	216,842	-0.513	-0.560	-0.047
1178	275,300	277,524	-0.181	-0.225	-0.044
1179	272,395	272,795	-0.197	-0.251	-0.054
1180	433,477	449,035	0.714	0.721	0.008
1181	425,845	433,774	0.670	0.637	-0.033
1182	428,602	435,180	0.686	0.645	-0.041
1183	401,618	420,542	0.533	0.564	0.031
1184	400,082	416,265	0.525	0.540	0.016
1185	349,352	357,224	0.238	0.215	-0.023
1186	303,061	317,178	-0.024	-0.006	0.017
1187	310,069	316,017	0.016	-0.013	-0.029
1188	310,213	317,649	0.017	-0.004	-0.020

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1189	308,589	315,187	0.008	-0.017	-0.025
1190	352,302	356,212	0.255	0.209	-0.046
1191	281,360	283,790	-0.146	-0.190	-0.044
1192	281,376	286,066	-0.146	-0.178	-0.032
1193	273,808	286,970	-0.189	-0.173	0.016
1194	199,981	201,831	-0.606	-0.643	-0.036
1195	214,046	215,784	-0.527	-0.566	-0.039
1196	168,441	168,664	-0.784	-0.826	-0.041
1197	183,704	183,712	-0.698	-0.743	-0.044
1198	132,914	131,816	-0.985	-1.029	-0.044
1199	124,278	124,465	-1.034	-1.069	-0.035
1200	153,687	153,473	-0.868	-0.909	-0.041
1201	165,605	166,100	-0.801	-0.840	-0.039
1202	202,505	203,400	-0.592	-0.634	-0.042
1203	203,687	203,399	-0.585	-0.634	-0.049
1204	194,538	190,538	-0.637	-0.705	-0.068
1205	169,432	169,605	-0.779	-0.820	-0.041
1206	206,260	206,807	-0.571	-0.615	-0.044
1207	183,162	184,049	-0.701	-0.741	-0.039
1208	176,189	176,053	-0.741	-0.785	-0.044
1209	139,047	139,052	-0.951	-0.989	-0.038
1210	164,279	162,688	-0.808	-0.859	-0.051
1211	170,797	171,190	-0.771	-0.812	-0.040
1212	171,239	172,326	-0.769	-0.805	-0.037
1213	135,989	135,708	-0.968	-1.007	-0.039
1214	145,096	145,799	-0.916	-0.952	-0.035
1215	174,980	174,901	-0.748	-0.791	-0.044
1216	175,208	175,474	-0.746	-0.788	-0.042
1217	200,351	202,024	-0.604	-0.642	-0.037
1218	175,565	175,575	-0.744	-0.787	-0.043
1219	203,818	204,925	-0.585	-0.626	-0.041
1220	174,320	174,388	-0.751	-0.794	-0.043
1221	174,603	175,043	-0.750	-0.790	-0.041
1222	161,034	162,299	-0.826	-0.861	-0.034
1223	174,664	174,616	-0.749	-0.793	-0.043
1224	180,415	182,003	-0.717	-0.752	-0.035
1225	187,019	189,672	-0.679	-0.710	-0.030
1226	256,020	258,230	-0.289	-0.331	-0.042
1227	296,206	307,980	-0.062	-0.057	0.005
1228	276,251	283,405	-0.175	-0.193	-0.017
1229	187,523	188,149	-0.677	-0.718	-0.041
1230	198,139	202,827	-0.617	-0.637	-0.020
1231	245,669	255,659	-0.348	-0.346	0.002
1232	222,021	229,144	-0.482	-0.492	-0.010
1233	351,348	360,076	0.249	0.230	-0.019
1234	317,412	329,623	0.058	0.062	0.005
1235	374,016	395,830	0.377	0.428	0.050
1236	410,828	428,777	0.586	0.609	0.024
1237	416,937	435,120	0.620	0.644	0.024
1238	421,992	439,615	0.649	0.669	0.021
1239	357,383	373,324	0.283	0.304	0.020
1240	403,973	416,503	0.547	0.542	-0.005
1241	330,467	337,848	0.131	0.108	-0.024
1242	224,971	226,136	-0.465	-0.509	-0.044

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1243	219,681	221,458	-0.495	-0.534	-0.039
1244	158,750	159,359	-0.839	-0.877	-0.038
1245	154,775	155,638	-0.862	-0.897	-0.036
1246	154,138	158,468	-0.865	-0.882	-0.016
1247	194,143	203,357	-0.639	-0.634	0.005
1248	152,734	154,384	-0.873	-0.904	-0.031
1249	177,163	179,536	-0.735	-0.766	-0.030
1250	187,211	190,752	-0.678	-0.704	-0.025
1251	218,066	226,377	-0.504	-0.507	-0.003
1252	191,853	200,495	-0.652	-0.650	0.002
1253	200,076	213,749	-0.606	-0.577	0.029
1254	183,654	191,352	-0.699	-0.700	-0.002
1255	97,409	99,243	-1.186	-1.209	-0.023
1256	97,161	102,205	-1.187	-1.192	-0.005
1257	98,683	103,379	-1.179	-1.186	-0.007
1258	99,357	100,664	-1.175	-1.201	-0.026
1259	180,451	191,887	-0.717	-0.697	0.019
1260	56,143	57,461	-1.419	-1.439	-0.020
1261	168,371	180,939	-0.785	-0.758	0.027
1262	161,214	170,780	-0.825	-0.814	0.011
1263	72,539	77,341	-1.327	-1.329	-0.003
1264	118,613	124,782	-1.066	-1.068	-0.002
1265	94,945	99,679	-1.200	-1.206	-0.006
1266	143,387	152,387	-0.926	-0.915	0.011
1267	166,467	178,347	-0.796	-0.772	0.024
1268	182,312	194,052	-0.706	-0.686	0.021
1269	275,476	296,218	-0.180	-0.122	0.058
1270	246,708	266,121	-0.342	-0.288	0.054
1271	202,681	219,201	-0.591	-0.547	0.044
1272	243,362	261,997	-0.361	-0.311	0.050
1273	179,541	192,874	-0.722	-0.692	0.030
1274	151,433	163,977	-0.881	-0.851	0.029
1275	238,025	255,474	-0.391	-0.347	0.045
1276	195,932	213,014	-0.629	-0.581	0.048
1277	179,015	190,749	-0.725	-0.704	0.021
1278	174,393	187,974	-0.751	-0.719	0.032
1279	146,525	159,353	-0.908	-0.877	0.031
1280	140,363	150,573	-0.943	-0.925	0.018
1281	159,216	170,279	-0.837	-0.817	0.020
1282	89,672	97,020	-1.230	-1.221	0.009
1283	91,867	99,156	-1.217	-1.209	0.008
1284	104,320	110,333	-1.147	-1.147	0.000
1285	105,158	109,934	-1.142	-1.150	-0.007
1286	119,764	128,100	-1.060	-1.049	0.010
1287	138,512	146,078	-0.954	-0.950	0.003
1288	225,028	241,863	-0.465	-0.422	0.043
1289	261,560	279,198	-0.258	-0.216	0.042
1290	247,254	270,343	-0.339	-0.265	0.074
1291	227,308	252,733	-0.452	-0.362	0.090
1292	212,591	226,074	-0.535	-0.509	0.026
1293	312,743	326,406	0.031	0.045	0.014
1294	286,143	302,531	-0.119	-0.087	0.032
1295	357,825	375,496	0.286	0.316	0.030
1296	353,984	364,304	0.264	0.254	-0.010

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1297	337,771	347,705	0.173	0.162	-0.010
1298	399,079	410,673	0.519	0.510	-0.010
1299	372,070	390,428	0.366	0.398	0.031
1300	340,626	354,954	0.189	0.202	0.013
1301	344,169	359,516	0.209	0.227	0.019
1302	305,871	320,146	-0.008	0.010	0.018
1303	281,339	296,738	-0.146	-0.119	0.027
1304	199,178	209,639	-0.611	-0.600	0.011
1305	163,788	171,590	-0.811	-0.809	0.001
1306	167,412	175,237	-0.790	-0.789	0.001
1307	314,949	326,675	0.044	0.046	0.003
1308	331,152	346,121	0.135	0.153	0.018
1309	366,604	378,748	0.336	0.333	-0.002
1310	360,064	372,693	0.299	0.300	0.001
1311	285,170	294,470	-0.125	-0.132	-0.007
1312	284,241	293,262	-0.130	-0.138	-0.008
1313	289,608	300,220	-0.100	-0.100	0.000
1314	293,255	299,320	-0.079	-0.105	-0.026
1315	253,018	262,739	-0.306	-0.307	0.000
1316	261,736	272,176	-0.257	-0.255	0.003
1317	244,670	255,539	-0.354	-0.346	0.007
1318	243,430	252,507	-0.361	-0.363	-0.002
1319	305,080	312,825	-0.012	-0.030	-0.018
1320	309,051	315,546	0.010	-0.015	-0.025
1321	231,626	240,661	-0.427	-0.428	-0.001
1322	252,153	262,848	-0.311	-0.306	0.005
1323	236,264	246,941	-0.401	-0.394	0.007
1324	185,413	197,272	-0.689	-0.668	0.021
1325	139,608	147,007	-0.947	-0.945	0.002
1326	148,518	154,687	-0.897	-0.903	-0.006
1327	165,115	172,093	-0.803	-0.807	-0.003
1328	254,043	269,177	-0.301	-0.271	0.030
1329	314,890	323,145	0.043	0.027	-0.017
1330	344,994	354,059	0.213	0.197	-0.016
1331	352,065	365,199	0.253	0.259	0.005
1332	282,604	288,937	-0.139	-0.162	-0.023
1333	371,538	386,318	0.363	0.375	0.012
1334	341,045	391,970	0.191	0.406	0.215
1335	316,716	385,731	0.054	0.372	0.318
1336	317,373	394,240	0.057	0.419	0.362
1337	311,775	367,867	0.026	0.273	0.248
1338	284,665	355,668	-0.128	0.206	0.334
1339	283,811	359,037	-0.132	0.225	0.357
1340	247,249	408,870	-0.339	0.500	0.839
1341	209,629	379,351	-0.552	0.337	0.888
1342	164,803	235,507	-0.805	-0.457	0.348
1343	183,333	259,865	-0.700	-0.322	0.378
1344	185,716	262,469	-0.687	-0.308	0.379
1345	196,182	299,693	-0.628	-0.103	0.525
1346	198,039	278,011	-0.617	-0.222	0.395
1347	102,213	150,653	-1.159	-0.925	0.234
1348	131,725	173,399	-0.992	-0.799	0.193
1349	51,965	56,773	-1.443	-1.443	0.000
1350	253,107	286,599	-0.306	-0.175	0.131

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1351	221,819	294,392	-0.483	-0.132	0.351
1352	272,227	356,139	-0.198	0.209	0.407
1353	319,897	394,275	0.072	0.419	0.348
1354	307,922	388,186	0.004	0.386	0.382
1355	224,175	277,467	-0.469	-0.225	0.244
1356	173,970	208,498	-0.753	-0.606	0.147
1357	315,793	405,074	0.048	0.479	0.430
1358	292,755	355,040	-0.082	0.203	0.284
1359	286,433	355,433	-0.118	0.205	0.322
1360	252,915	291,466	-0.307	-0.148	0.159
1361	204,849	252,329	-0.579	-0.364	0.215
1362	171,857	193,376	-0.765	-0.689	0.076
1363	232,470	258,003	-0.423	-0.333	0.090
1364	237,388	271,157	-0.395	-0.260	0.135
1365	238,587	266,326	-0.388	-0.287	0.101
1366	235,813	277,208	-0.404	-0.227	0.177
1367	220,123	241,659	-0.492	-0.423	0.070
1368	219,367	237,418	-0.497	-0.446	0.050
1369	169,256	199,601	-0.780	-0.655	0.125
1370	101,776	133,695	-1.161	-1.018	0.143
1371	75,102	101,321	-1.312	-1.197	0.115
1372	66,839	73,639	-1.359	-1.350	0.009
1373	62,980	71,929	-1.381	-1.359	0.021
1374	80,219	98,465	-1.283	-1.213	0.070
1375	78,775	90,920	-1.291	-1.254	0.037
1376	96,272	98,074	-1.192	-1.215	-0.023
1377	176,378	206,089	-0.740	-0.619	0.121
1378	126,518	136,956	-1.021	-1.000	0.021
1379	201,126	216,535	-0.600	-0.561	0.038
1380	215,996	232,452	-0.516	-0.474	0.042
1381	175,290	188,157	-0.746	-0.718	0.028
1382	87,598	94,566	-1.241	-1.234	0.007
1383	122,828	134,774	-1.042	-1.013	0.030
1384	88,434	95,892	-1.237	-1.227	0.010
1385	89,107	97,220	-1.233	-1.220	0.013
1386	119,259	129,242	-1.062	-1.043	0.019
1387	189,868	203,186	-0.663	-0.635	0.028
1388	170,671	190,747	-0.772	-0.704	0.068
1389	209,933	268,745	-0.550	-0.273	0.277
1390	194,506	211,004	-0.637	-0.592	0.045
1391	193,352	215,068	-0.644	-0.570	0.074
1392	192,541	206,113	-0.648	-0.619	0.029
1393	132,866	153,522	-0.986	-0.909	0.076
1394	128,315	147,208	-1.011	-0.944	0.067
1395	149,041	165,552	-0.894	-0.843	0.051
1396	146,166	156,096	-0.910	-0.895	0.015
1397	133,059	155,164	-0.984	-0.900	0.084
1398	161,288	185,942	-0.825	-0.730	0.095
1399	184,766	201,805	-0.692	-0.643	0.049
1400	154,956	169,164	-0.861	-0.823	0.038
1401	213,814	234,510	-0.528	-0.462	0.066
1402	197,657	229,186	-0.619	-0.492	0.128
1403	303,867	380,410	-0.019	0.343	0.362
1404	378,522	473,449	0.403	0.856	0.453

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1405	228,660	250,376	-0.444	-0.375	0.069
1406	285,846	310,456	-0.121	-0.043	0.078
1407	335,528	379,884	0.160	0.340	0.180
1408	314,942	395,625	0.044	0.427	0.383
1409	399,512	455,402	0.522	0.756	0.235
1410	314,683	409,400	0.042	0.503	0.460
1411	211,780	237,712	-0.540	-0.445	0.095
1412	212,708	282,155	-0.534	-0.199	0.335
1413	140,812	149,291	-0.941	-0.932	0.008
1414	229,099	252,148	-0.442	-0.365	0.077
1415	333,723	366,181	0.150	0.264	0.114
1416	320,959	356,649	0.078	0.212	0.134
1417	91,206	93,830	-1.221	-1.238	-0.017
1418	177,779	194,676	-0.732	-0.682	0.050
1419	224,317	251,347	-0.469	-0.369	0.099
1420	120,064	134,032	-1.058	-1.017	0.041
1421	311,480	343,532	0.024	0.139	0.115
1422	377,406	400,814	0.397	0.455	0.059
1423	368,142	400,736	0.344	0.455	0.110
1424	282,309	319,070	-0.141	0.004	0.145
1425	470,787	511,534	0.924	1.066	0.142
1426	435,926	468,803	0.727	0.830	0.103
1427	427,223	447,104	0.678	0.711	0.032
1428	476,165	501,171	0.955	1.009	0.054
1429	453,998	487,412	0.830	0.933	0.103
1430	323,276	395,461	0.091	0.426	0.335
1431	290,144	311,531	-0.097	-0.037	0.059
1432	297,727	316,074	-0.054	-0.012	0.041
1433	317,086	339,034	0.056	0.114	0.059
1434	283,039	296,948	-0.137	-0.118	0.019
1435	277,356	295,903	-0.169	-0.124	0.045
1436	370,474	408,548	0.357	0.498	0.140
1437	358,848	394,555	0.292	0.421	0.129
1438	328,962	349,518	0.123	0.172	0.049
1439	390,691	425,078	0.472	0.589	0.117
1440	219,065	231,599	-0.498	-0.478	0.020
1441	315,591	333,896	0.047	0.086	0.039
1442	534,506	559,827	1.285	1.332	0.048
1443	497,087	517,999	1.073	1.102	0.029
1444	510,876	539,007	1.151	1.218	0.067
1445	464,754	489,184	0.890	0.943	0.052
1446	445,149	465,220	0.780	0.811	0.031
1447	465,849	492,310	0.897	0.960	0.063
1448	434,095	456,160	0.717	0.761	0.043
1449	502,782	532,029	1.105	1.179	0.074
1450	452,811	480,363	0.823	0.894	0.071
1451	466,290	496,547	0.899	0.983	0.084
1452	449,184	473,736	0.802	0.857	0.055
1453	459,221	482,425	0.859	0.905	0.046
1454	497,703	514,978	1.077	1.085	0.008
1455	493,946	515,288	1.055	1.087	0.031
1456	497,729	522,234	1.077	1.125	0.048
1457	474,423	499,352	0.945	0.999	0.054
1458	451,643	480,102	0.816	0.893	0.076

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1459	497,993	524,543	1.078	1.138	0.060
1460	502,104	530,929	1.101	1.173	0.072
1461	468,380	488,219	0.911	0.937	0.027
1462	490,396	505,542	1.035	1.033	-0.002
1463	489,860	500,567	1.032	1.006	-0.027
1464	489,823	499,635	1.032	1.000	-0.032
1465	498,469	513,321	1.081	1.076	-0.005
1466	497,594	509,659	1.076	1.056	-0.020
1467	514,885	526,447	1.174	1.148	-0.025
1468	474,430	488,961	0.945	0.941	-0.004
1469	499,000	523,393	1.084	1.131	0.048
1470	490,048	511,080	1.033	1.064	0.030
1471	522,431	537,584	1.216	1.210	-0.007
1472	539,501	570,241	1.313	1.390	0.077
1473	482,154	498,076	0.989	0.992	0.003
1474	493,322	502,934	1.052	1.019	-0.033
1475	478,082	493,052	0.966	0.964	-0.002
1476	317,733	326,433	0.059	0.045	-0.015
1477	204,789	205,015	-0.579	-0.625	-0.046
1478	252,610	253,050	-0.309	-0.360	-0.051
1479	334,880	350,126	0.156	0.176	0.019
1480	385,685	424,081	0.443	0.584	0.140
1481	379,562	400,199	0.409	0.452	0.043
1482	443,071	464,299	0.768	0.805	0.038
1483	412,579	440,612	0.595	0.675	0.079
1484	434,705	456,566	0.720	0.763	0.042
1485	427,737	456,754	0.681	0.764	0.083
1486	298,659	427,758	-0.048	0.604	0.652
1487	302,338	396,474	-0.028	0.431	0.459
1488	562,393	572,693	1.442	1.403	-0.039
1489	398,524	439,631	0.516	0.669	0.153
1490	419,885	463,133	0.637	0.799	0.162
1491	422,638	461,573	0.652	0.790	0.138
1492	493,492	521,406	1.053	1.120	0.068
1493	465,793	476,826	0.896	0.875	-0.022
1494	442,008	450,889	0.762	0.731	-0.030
1495	467,124	480,194	0.904	0.893	-0.011
1496	481,665	493,054	0.986	0.964	-0.022
1497	445,779	451,973	0.783	0.737	-0.046
1498	445,724	451,115	0.783	0.733	-0.050
1499	514,071	525,059	1.169	1.141	-0.028
1500	538,409	547,431	1.307	1.264	-0.043
1501	548,269	559,007	1.362	1.328	-0.034
1502	543,047	545,476	1.333	1.253	-0.080
1503	522,854	525,535	1.219	1.143	-0.075
1504	517,086	521,457	1.186	1.121	-0.065
1505	459,753	464,253	0.862	0.805	-0.057
1506	491,038	493,453	1.039	0.966	-0.073
1507	479,053	481,143	0.971	0.898	-0.073
1508	421,513	426,919	0.646	0.599	-0.047
1509	438,328	443,619	0.741	0.691	-0.050
1510	438,057	450,477	0.739	0.729	-0.010
1511	504,935	509,359	1.117	1.054	-0.063
1512	165,895	165,940	-0.799	-0.841	-0.042

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1513	198,782	199,132	-0.613	-0.657	-0.044
1514	525,374	531,033	1.233	1.174	-0.059
1515	532,761	538,836	1.275	1.217	-0.058
1516	539,236	545,709	1.311	1.255	-0.057
1517	337,292	346,930	0.170	0.158	-0.012
1518	230,553	232,552	-0.433	-0.473	-0.040
1519	220,308	220,615	-0.491	-0.539	-0.048
1520	160,768	160,377	-0.828	-0.871	-0.043
1521	529,818	538,712	1.258	1.216	-0.042
1522	446,718	457,599	0.788	0.768	-0.020
1523	485,637	507,687	1.008	1.045	0.036
1524	499,385	522,135	1.086	1.125	0.038
1525	484,712	498,892	1.003	0.996	-0.007
1526	453,388	467,736	0.826	0.824	-0.002
1527	495,605	509,556	1.065	1.055	-0.010
1528	469,917	488,067	0.920	0.937	0.017
1529	468,511	471,710	0.912	0.846	-0.065
1530	424,746	437,802	0.664	0.659	-0.005
1531	361,006	378,086	0.304	0.330	0.026
1532	453,602	468,338	0.827	0.828	0.000
1533	449,278	467,089	0.803	0.821	0.018
1534	384,466	410,540	0.437	0.509	0.072
1535	376,102	412,494	0.389	0.520	0.130
1536	410,079	427,438	0.581	0.602	0.021
1537	443,478	466,454	0.770	0.817	0.047
1538	345,618	353,858	0.217	0.196	-0.021
1539	423,685	447,851	0.658	0.715	0.056
1540	415,450	433,427	0.612	0.635	0.023
1541	375,784	385,784	0.387	0.372	-0.015
1542	378,579	390,744	0.403	0.400	-0.004
1543	462,863	482,535	0.880	0.906	0.026
1544	253,544	343,097	-0.303	0.137	0.440
1545	217,510	299,435	-0.507	-0.104	0.403
1546	439,849	462,328	0.750	0.795	0.045
1547	386,222	459,073	0.446	0.777	0.330
1548	310,765	364,336	0.020	0.254	0.234
1549	212,229	361,963	-0.537	0.241	0.778
1550	317,190	423,081	0.056	0.578	0.522
1551	487,818	497,311	1.021	0.988	-0.033
1552	427,533	462,877	0.680	0.798	0.118
1553	326,090	441,868	0.107	0.682	0.575
1554	348,395	387,110	0.233	0.380	0.147
1555	319,228	403,101	0.068	0.468	0.400
1556	423,484	469,582	0.657	0.835	0.178
1557	339,408	428,439	0.182	0.608	0.426
1558	279,748	312,475	-0.155	-0.032	0.123
1559	506,994	518,786	1.129	1.106	-0.023
1560	519,616	532,782	1.200	1.183	-0.017
1561	191,721	209,346	-0.653	-0.601	0.052
1562	528,651	536,974	1.251	1.206	-0.045
1563	481,394	503,982	0.984	1.024	0.040
1564	475,781	505,825	0.953	1.035	0.082
1565	586,457	592,672	1.578	1.514	-0.065
1566	421,027	464,274	0.643	0.805	0.162

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1567	186,971	191,895	-0.680	-0.697	-0.018
1568	602,558	621,688	1.669	1.674	0.005
1569	533,814	543,284	1.281	1.241	-0.039
1570	490,431	508,316	1.035	1.048	0.013
1571	515,104	547,880	1.175	1.267	0.092
1572	514,039	528,897	1.169	1.162	-0.007
1573	606,721	637,625	1.693	1.762	0.069
1574	383,307	405,983	0.430	0.484	0.054
1575	469,322	489,258	0.916	0.943	0.027
1576	564,781	569,425	1.456	1.385	-0.070
1577	294,807	305,662	-0.070	-0.070	0.000
1578	460,798	503,512	0.868	1.022	0.154
1579	451,329	492,957	0.814	0.964	0.149
1580	470,592	494,978	0.923	0.975	0.051
1581	320,936	350,501	0.077	0.178	0.100
1582	554,089	553,110	1.395	1.295	-0.100
1583	408,696	446,534	0.573	0.707	0.134
1584	458,518	489,237	0.855	0.943	0.088
1585	462,673	490,825	0.879	0.952	0.073
1586	483,349	502,178	0.995	1.014	0.019
1587	378,523	412,497	0.403	0.520	0.117
1588	486,417	502,771	1.013	1.018	0.005
1589	340,881	369,958	0.190	0.285	0.095
1590	392,699	419,397	0.483	0.558	0.075
1591	469,995	505,375	0.920	1.032	0.112
1592	195,970	196,951	-0.629	-0.670	-0.041
1593	458,934	466,719	0.857	0.819	-0.039
1594	443,981	449,233	0.773	0.722	-0.051
1595	390,047	397,133	0.468	0.435	-0.033
1596	493,344	493,704	1.052	0.968	-0.084
1597	410,636	414,915	0.584	0.533	-0.051
1598	479,994	483,229	0.976	0.910	-0.067
1599	578,968	580,573	1.536	1.447	-0.089
1600	452,500	454,353	0.821	0.751	-0.071
1601	474,534	480,652	0.946	0.896	-0.050
1602	404,617	412,311	0.550	0.519	-0.032
1603	467,863	475,022	0.908	0.865	-0.043
1604	393,006	393,838	0.485	0.417	-0.068
1605	429,474	435,176	0.691	0.645	-0.046
1606	466,371	472,129	0.899	0.849	-0.051
1607	450,400	462,959	0.809	0.798	-0.011
1608	464,757	477,476	0.890	0.878	-0.012
1609	578,693	579,469	1.534	1.441	-0.094
1610	551,545	552,924	1.381	1.294	-0.087
1611	558,228	566,002	1.419	1.367	-0.052
1612	545,348	552,948	1.346	1.294	-0.051
1613	463,187	479,541	0.881	0.890	0.008
1614	544,954	556,652	1.344	1.315	-0.029
1615	531,301	543,046	1.266	1.240	-0.027
1616	467,490	483,944	0.906	0.914	0.008
1617	522,733	528,835	1.218	1.161	-0.057
1618	517,754	532,579	1.190	1.182	-0.008
1619	499,630	508,977	1.087	1.052	-0.036
1620	484,261	495,049	1.001	0.975	-0.026

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1621	502,723	514,876	1.105	1.084	-0.020
1622	505,710	508,415	1.122	1.049	-0.073
1623	507,324	509,346	1.131	1.054	-0.077
1624	481,693	496,346	0.986	0.982	-0.004
1625	459,295	463,557	0.859	0.801	-0.058
1626	426,632	432,671	0.675	0.631	-0.044
1627	457,655	466,588	0.850	0.818	-0.032
1628	437,105	447,944	0.734	0.715	-0.019
1629	452,992	461,593	0.824	0.790	-0.033
1630	518,327	525,806	1.193	1.145	-0.048
1631	515,919	520,443	1.180	1.115	-0.064
1632	538,377	545,276	1.306	1.252	-0.054
1633	559,659	572,936	1.427	1.405	-0.022
1634	538,017	539,539	1.304	1.221	-0.084
1635	510,070	511,828	1.146	1.068	-0.079
1636	517,188	520,818	1.187	1.117	-0.069
1637	495,279	497,628	1.063	0.989	-0.074
1638	495,022	496,804	1.061	0.985	-0.077
1639	462,584	464,076	0.878	0.804	-0.074
1640	456,338	460,150	0.843	0.783	-0.060
1641	438,198	447,809	0.740	0.714	-0.026
1642	405,142	413,444	0.553	0.525	-0.029
1643	427,889	440,169	0.682	0.672	-0.010
1644	257,659	256,769	-0.280	-0.340	-0.059
1645	253,544	249,266	-0.303	-0.381	-0.077
1646	549,666	553,731	1.370	1.299	-0.071
1647	133,711	132,790	-0.981	-1.023	-0.043
1648	165,455	165,751	-0.801	-0.842	-0.040
1649	281,057	282,923	-0.148	-0.195	-0.047
1650	288,892	289,014	-0.104	-0.162	-0.058
1651	550,525	554,914	1.375	1.305	-0.070
1652	190,622	190,895	-0.659	-0.703	-0.044
1653	558,775	563,341	1.422	1.352	-0.070
1654	540,897	542,974	1.321	1.239	-0.081
1655	541,555	546,409	1.324	1.258	-0.066
1656	533,608	536,289	1.280	1.203	-0.077
1657	277,951	282,014	-0.166	-0.200	-0.035
1658	532,951	538,812	1.276	1.217	-0.059
1659	205,637	206,208	-0.574	-0.618	-0.044
1660	529,450	533,203	1.256	1.186	-0.070
1661	144,411	144,523	-0.920	-0.959	-0.038
1662	512,992	521,203	1.163	1.119	-0.044
1663	512,555	514,400	1.161	1.082	-0.079
1664	169,576	169,498	-0.778	-0.821	-0.043
1665	202,328	201,787	-0.593	-0.643	-0.050
1666	164,482	164,053	-0.807	-0.851	-0.044
1667	166,406	166,156	-0.796	-0.839	-0.043
1668	163,537	161,024	-0.812	-0.868	-0.056
1669	184,685	179,937	-0.693	-0.763	-0.071
1670	179,958	179,998	-0.719	-0.763	-0.044
1671	166,743	166,471	-0.794	-0.838	-0.044
1672	157,339	157,395	-0.847	-0.888	-0.040
1673	155,297	155,331	-0.859	-0.899	-0.040
1674	230,885	232,026	-0.432	-0.476	-0.044

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1675	251,932	258,356	-0.313	-0.331	-0.018
1676	285,245	293,157	-0.124	-0.139	-0.014
1677	461,824	467,365	0.874	0.822	-0.051
1678	141,465	144,881	-0.937	-0.957	-0.020
1679	434,869	436,971	0.721	0.655	-0.067
1680	116,056	118,676	-1.081	-1.101	-0.021
1681	437,761	443,857	0.738	0.693	-0.045
1682	105,906	112,535	-1.138	-1.135	0.003
1683	448,883	448,288	0.801	0.717	-0.084
1684	164,880	174,224	-0.805	-0.795	0.010
1685	428,367	436,646	0.685	0.653	-0.032
1686	448,851	458,684	0.800	0.774	-0.026
1687	129,220	136,399	-1.006	-1.004	0.003
1688	441,528	460,299	0.759	0.783	0.024
1689	450,133	472,882	0.808	0.853	0.045
1690	496,237	516,347	1.068	1.093	0.024
1691	499,367	525,256	1.086	1.142	0.056
1692	479,206	492,517	0.972	0.961	-0.011
1693	239,192	255,198	-0.385	-0.348	0.036
1694	461,006	473,564	0.869	0.857	-0.013
1695	416,908	417,717	0.620	0.548	-0.071
1696	186,983	202,541	-0.680	-0.639	0.041
1697	172,368	183,151	-0.762	-0.746	0.017
1698	155,599	167,609	-0.857	-0.831	0.026
1699	503,427	520,533	1.109	1.116	0.007
1700	164,986	177,143	-0.804	-0.779	0.025
1701	521,102	540,035	1.209	1.223	0.014
1702	448,128	459,565	0.796	0.779	-0.017
1703	449,509	458,888	0.804	0.776	-0.029
1704	146,982	156,161	-0.906	-0.895	0.011
1705	163,385	176,535	-0.813	-0.782	0.031
1706	166,530	178,153	-0.795	-0.773	0.022
1707	131,517	140,370	-0.993	-0.982	0.012
1708	499,868	515,570	1.089	1.088	-0.001
1709	64,813	70,536	-1.370	-1.367	0.003
1710	116,429	123,427	-1.078	-1.075	0.003
1711	70,354	76,231	-1.339	-1.336	0.003
1712	399,257	403,452	0.520	0.470	-0.050
1713	79,378	82,502	-1.288	-1.301	-0.013
1714	112,228	117,941	-1.102	-1.105	-0.003
1715	497,454	521,108	1.075	1.119	0.044
1716	477,140	479,202	0.960	0.888	-0.073
1717	472,311	490,517	0.933	0.950	0.017
1718	315,634	327,063	0.047	0.048	0.001
1719	477,580	481,358	0.963	0.900	-0.063
1720	424,365	430,663	0.662	0.620	-0.042
1721	435,079	441,758	0.723	0.681	-0.042
1722	408,314	428,613	0.571	0.609	0.037
1723	387,086	398,466	0.451	0.442	-0.009
1724	443,530	456,852	0.770	0.764	-0.006
1725	393,118	405,007	0.485	0.478	-0.007
1726	471,553	488,437	0.929	0.939	0.010
1727	384,891	424,235	0.439	0.584	0.145
1728	373,414	411,619	0.374	0.515	0.141

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1729	400,983	415,977	0.530	0.539	0.009
1730	397,094	414,211	0.508	0.529	0.021
1731	179,018	189,979	-0.725	-0.708	0.017
1732	406,304	421,076	0.560	0.567	0.007
1733	387,995	398,493	0.456	0.442	-0.014
1734	360,675	373,453	0.302	0.304	0.002
1735	385,682	405,504	0.443	0.481	0.038
1736	391,284	404,604	0.475	0.476	0.001
1737	404,296	420,481	0.549	0.564	0.015
1738	411,129	427,798	0.587	0.604	0.017
1739	377,058	400,745	0.395	0.455	0.060
1740	442,249	458,324	0.763	0.772	0.009
1741	372,766	392,341	0.370	0.408	0.038
1742	478,966	495,388	0.971	0.977	0.006
1743	475,300	491,573	0.950	0.956	0.006
1744	493,747	516,466	1.054	1.093	0.039
1745	296,105	313,172	-0.063	-0.028	0.035
1746	403,661	412,692	0.545	0.521	-0.024
1747	222,656	352,491	-0.478	0.189	0.667
1748	215,224	388,077	-0.520	0.385	0.905
1749	224,857	296,779	-0.466	-0.119	0.347
1750	259,538	350,100	-0.270	0.175	0.445
1751	463,620	482,868	0.884	0.908	0.024
1752	409,829	443,923	0.580	0.693	0.113
1753	380,510	425,789	0.414	0.593	0.179
1754	390,221	451,283	0.469	0.734	0.265
1755	400,773	492,443	0.529	0.961	0.432
1756	288,467	363,697	-0.106	0.250	0.356
1757	376,173	435,674	0.390	0.648	0.258
1758	293,869	306,707	-0.076	-0.064	0.012
1759	338,541	407,582	0.177	0.493	0.316
1760	374,288	434,579	0.379	0.641	0.262
1761	278,626	345,819	-0.162	0.152	0.313
1762	343,090	376,818	0.203	0.323	0.120
1763	396,176	426,456	0.503	0.597	0.094
1764	352,901	387,985	0.258	0.384	0.126
1765	323,220	413,007	0.090	0.522	0.432
1766	354,381	458,970	0.266	0.776	0.510
1767	328,929	446,300	0.123	0.706	0.584
1768	527,949	534,852	1.248	1.195	-0.053
1769	272,605	347,552	-0.196	0.161	0.357
1770	486,444	500,845	1.013	1.007	-0.006
1771	528,947	538,705	1.253	1.216	-0.037
1772	97,324	99,559	-1.186	-1.207	-0.020
1773	85,345	88,588	-1.254	-1.267	-0.013
1774	103,084	109,588	-1.154	-1.151	0.002
1775	492,174	502,303	1.045	1.015	-0.030
1776	412,827	450,753	0.597	0.731	0.134
1777	355,406	397,133	0.272	0.435	0.163
1778	164,991	186,600	-0.804	-0.727	0.077
1779	375,838	457,765	0.388	0.769	0.382
1780	223,287	255,374	-0.474	-0.347	0.127
1781	360,013	426,746	0.298	0.598	0.300
1782	364,412	465,488	0.323	0.812	0.489

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1783	364,571	440,522	0.324	0.674	0.350
1784	190,184	212,543	-0.662	-0.583	0.078
1785	394,064	459,155	0.491	0.777	0.286
1786	315,528	449,975	0.047	0.726	0.680
1787	353,894	407,214	0.264	0.490	0.227
1788	412,426	448,837	0.595	0.720	0.126
1789	332,787	427,819	0.144	0.604	0.460
1790	357,210	396,098	0.282	0.429	0.147
1791	517,593	528,132	1.189	1.158	-0.031
1792	533,132	542,257	1.277	1.236	-0.041
1793	335,491	399,623	0.160	0.449	0.289
1794	248,134	277,391	-0.334	-0.226	0.108
1795	168,912	192,617	-0.782	-0.693	0.088
1796	563,351	573,168	1.448	1.406	-0.042
1797	530,135	540,758	1.260	1.227	-0.033
1798	91,090	93,979	-1.222	-1.238	-0.016
1799	540,514	547,607	1.319	1.265	-0.054
1800	537,106	543,742	1.299	1.244	-0.056
1801	526,115	535,197	1.237	1.197	-0.041
1802	541,276	546,731	1.323	1.260	-0.063
1803	82,334	84,719	-1.271	-1.289	-0.018
1804	162,998	177,631	-0.815	-0.776	0.039
1805	524,687	533,805	1.229	1.189	-0.040
1806	493,464	510,082	1.053	1.058	0.005
1807	524,389	535,925	1.227	1.201	-0.027
1808	527,045	539,110	1.242	1.218	-0.024
1809	534,347	540,870	1.284	1.228	-0.056
1810	562,741	572,531	1.444	1.403	-0.042
1811	517,783	527,712	1.190	1.155	-0.035
1812	486,970	502,140	1.016	1.014	-0.002
1813	591,032	613,980	1.604	1.631	0.027
1814	586,839	617,520	1.580	1.651	0.070
1815	564,221	570,079	1.453	1.389	-0.064
1816	622,210	643,795	1.780	1.796	0.015
1817	306,808	333,173	-0.002	0.082	0.084
1818	403,759	444,967	0.546	0.699	0.153
1819	522,142	536,167	1.215	1.202	-0.013
1820	623,519	636,869	1.788	1.757	-0.030
1821	631,188	642,720	1.831	1.790	-0.041
1822	626,174	643,074	1.803	1.792	-0.011
1823	591,708	610,806	1.608	1.614	0.006
1824	269,917	287,684	-0.211	-0.169	0.042
1825	348,361	372,148	0.232	0.297	0.065
1826	125,011	127,303	-1.030	-1.054	-0.024
1827	73,479	80,270	-1.321	-1.313	0.008
1828	98,632	105,108	-1.179	-1.176	0.003
1829	619,737	639,065	1.766	1.770	0.003
1830	520,967	546,490	1.208	1.259	0.051
1831	506,724	526,439	1.128	1.148	0.021
1832	556,114	586,641	1.407	1.480	0.074
1833	591,134	622,087	1.605	1.676	0.071
1834	647,497	659,761	1.923	1.884	-0.039
1835	631,546	653,462	1.833	1.849	0.016
1836	482,390	508,869	0.990	1.051	0.061

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1837	558,968	573,329	1.423	1.407	-0.016
1838	525,494	547,534	1.234	1.265	0.031
1839	532,362	567,424	1.272	1.374	0.102
1840	564,154	596,689	1.452	1.536	0.084
1841	591,619	625,450	1.607	1.694	0.087
1842	565,983	568,557	1.462	1.381	-0.082
1843	498,016	520,157	1.078	1.114	0.035
1844	423,236	445,098	0.656	0.699	0.044
1845	500,696	513,759	1.093	1.078	-0.015
1846	573,388	577,272	1.504	1.429	-0.076
1847	613,699	618,439	1.732	1.656	-0.076
1848	554,013	562,526	1.395	1.347	-0.048
1849	435,736	465,721	0.726	0.813	0.087
1850	400,961	446,189	0.530	0.706	0.176
1851	537,636	540,539	1.302	1.226	-0.076
1852	456,732	480,977	0.845	0.897	0.052
1853	523,458	529,086	1.222	1.163	-0.059
1854	549,913	553,225	1.372	1.296	-0.076
1855	551,581	555,942	1.381	1.311	-0.070
1856	517,625	519,781	1.189	1.112	-0.078
1857	536,380	542,174	1.295	1.235	-0.060
1858	510,312	511,656	1.148	1.067	-0.081
1859	420,028	453,606	0.638	0.746	0.109
1860	458,834	486,993	0.857	0.931	0.074
1861	540,676	543,805	1.319	1.244	-0.075
1862	471,498	506,846	0.928	1.040	0.112
1863	500,565	525,068	1.093	1.141	0.048
1864	531,017	535,616	1.265	1.199	-0.066
1865	465,540	490,533	0.895	0.950	0.055
1866	475,779	496,391	0.953	0.982	0.030
1867	472,511	499,579	0.934	1.000	0.066
1868	512,286	533,902	1.159	1.189	0.030
1869	432,977	470,361	0.711	0.839	0.128
1870	458,179	496,242	0.853	0.982	0.128
1871	478,557	487,234	0.968	0.932	-0.036
1872	341,716	355,404	0.195	0.205	0.010
1873	445,360	468,970	0.781	0.831	0.050
1874	467,283	491,545	0.905	0.956	0.051
1875	183,704	183,712	-0.698	-0.743	-0.044
1876	71,034	71,034	-1.335	-1.364	-0.029
1877	133,009	133,512	-0.985	-1.020	-0.035
1878	125,986	126,459	-1.024	-1.058	-0.034
1879	190,561	191,728	-0.659	-0.698	-0.039
1880	93,650	93,650	-1.207	-1.239	-0.032
1881	83,582	83,582	-1.264	-1.295	-0.031
1882	40,868	41,475	-1.506	-1.527	-0.022
1883	104,573	104,161	-1.145	-1.181	-0.036
1884	164,629	162,147	-0.806	-0.862	-0.055
1885	79,360	79,360	-1.288	-1.318	-0.030
1886	80,368	80,368	-1.282	-1.313	-0.030
1887	27,460	27,488	-1.581	-1.604	-0.023
1888	102,077	98,787	-1.160	-1.211	-0.051
1889	91,781	91,722	-1.218	-1.250	-0.032
1890	21,655	21,655	-1.614	-1.637	-0.022

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1891	13,191	13,191	-1.662	-1.683	-0.021
1892	22,511	22,511	-1.609	-1.632	-0.023
1893	36,523	36,523	-1.530	-1.555	-0.024
1894	124,774	124,774	-1.031	-1.068	-0.036
1895	73,015	73,015	-1.324	-1.353	-0.029
1896	58,975	59,411	-1.403	-1.428	-0.025
1897	38,845	38,900	-1.517	-1.541	-0.024
1898	83,735	83,795	-1.263	-1.294	-0.031
1899	107,548	107,548	-1.129	-1.163	-0.034
1900	190,243	190,243	-0.661	-0.707	-0.045
1901	164,959	165,159	-0.804	-0.845	-0.041
1902	241,044	240,724	-0.374	-0.428	-0.054
1903	239,400	234,844	-0.383	-0.460	-0.077
1904	290,656	296,585	-0.094	-0.120	-0.026
1905	274,225	273,986	-0.187	-0.245	-0.058
1906	258,626	258,223	-0.275	-0.331	-0.057
1907	211,601	212,048	-0.541	-0.586	-0.046
1908	290,229	289,437	-0.096	-0.159	-0.063
1909	306,854	306,504	-0.002	-0.065	-0.063
1910	309,973	310,381	0.015	-0.044	-0.059
1911	306,926	306,904	-0.002	-0.063	-0.061
1912	307,677	307,677	0.002	-0.059	-0.061
1913	283,686	283,629	-0.133	-0.191	-0.058
1914	285,857	285,634	-0.121	-0.180	-0.059
1915	276,437	275,824	-0.174	-0.234	-0.060
1916	287,723	287,490	-0.110	-0.170	-0.060
1917	290,367	292,027	-0.095	-0.145	-0.050
1918	302,751	302,751	-0.025	-0.086	-0.060
1919	306,360	306,139	-0.005	-0.067	-0.062
1920	308,665	308,731	0.008	-0.053	-0.061
1921	308,397	309,141	0.007	-0.051	-0.057
1922	313,213	313,575	0.034	-0.026	-0.060
1923	313,477	313,161	0.035	-0.028	-0.064
1924	254,505	254,514	-0.298	-0.352	-0.054
1925	156,984	155,469	-0.849	-0.898	-0.049
1926	130,293	130,232	-1.000	-1.038	-0.037
1927	122,095	122,326	-1.046	-1.081	-0.035
1928	104,991	106,902	-1.143	-1.166	-0.023
1929	103,509	103,691	-1.152	-1.184	-0.033
1930	103,692	103,750	-1.150	-1.184	-0.033
1931	93,193	93,526	-1.210	-1.240	-0.030
1932	84,207	84,207	-1.261	-1.292	-0.031
1933	131,847	131,627	-0.991	-1.030	-0.039
1934	288,092	288,092	-0.108	-0.167	-0.058
1935	115,244	115,255	-1.085	-1.120	-0.035
1936	98,614	99,725	-1.179	-1.206	-0.027
1937	33,786	33,786	-1.546	-1.570	-0.024
1938	121,267	123,791	-1.051	-1.073	-0.022
1939	211,247	208,975	-0.543	-0.603	-0.061
1940	171,378	171,342	-0.768	-0.811	-0.043
1941	143,909	145,121	-0.923	-0.955	-0.032
1942	203,767	203,767	-0.585	-0.632	-0.047
1943	288,943	289,637	-0.103	-0.158	-0.055
1944	243,830	243,304	-0.358	-0.414	-0.055

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1945	150,601	150,630	-0.885	-0.925	-0.040
1946	316,981	317,648	0.055	-0.004	-0.059
1947	219,870	218,799	-0.494	-0.549	-0.055
1948	271,006	271,006	-0.205	-0.261	-0.056
1949	223,568	224,070	-0.473	-0.520	-0.047
1950	263,494	263,494	-0.247	-0.302	-0.055
1951	222,972	222,972	-0.476	-0.526	-0.050
1952	201,778	201,778	-0.596	-0.643	-0.047
1953	191,420	191,716	-0.655	-0.698	-0.044
1954	153,918	153,964	-0.867	-0.907	-0.040
1955	130,437	129,413	-0.999	-1.042	-0.043
1956	160,577	160,552	-0.829	-0.870	-0.041
1957	188,312	188,340	-0.672	-0.717	-0.045
1958	224,839	223,237	-0.466	-0.524	-0.059
1959	230,777	230,777	-0.432	-0.483	-0.051
1960	247,403	247,403	-0.338	-0.391	-0.053
1961	248,019	244,670	-0.335	-0.406	-0.072
1962	252,707	253,254	-0.308	-0.359	-0.051
1963	218,182	218,433	-0.503	-0.551	-0.048
1964	25,262	25,262	-1.594	-1.617	-0.023
1965	62,494	63,685	-1.383	-1.405	-0.021
1966	130,422	130,422	-0.999	-1.037	-0.037
1967	139,761	140,335	-0.947	-0.982	-0.035
1968	122,481	123,393	-1.044	-1.075	-0.031
1969	125,517	127,769	-1.027	-1.051	-0.024
1970	120,661	120,135	-1.055	-1.093	-0.039
1971	114,205	115,396	-1.091	-1.119	-0.028
1972	118,481	116,887	-1.067	-1.111	-0.044
1973	115,078	115,446	-1.086	-1.119	-0.033
1974	112,541	112,818	-1.100	-1.134	-0.033
1975	122,055	121,597	-1.047	-1.085	-0.039
1976	118,570	118,570	-1.066	-1.102	-0.036
1977	109,199	109,267	-1.119	-1.153	-0.034
1978	108,610	108,373	-1.123	-1.158	-0.036
1979	110,888	111,882	-1.110	-1.139	-0.029
1980	303,525	303,648	-0.021	-0.081	-0.060
1981	304,990	304,990	-0.013	-0.073	-0.061
1982	293,424	293,834	-0.078	-0.135	-0.057
1983	297,810	297,816	-0.053	-0.113	-0.060
1984	309,028	308,812	0.010	-0.052	-0.063
1985	250,065	250,411	-0.323	-0.375	-0.051
1986	256,489	255,994	-0.287	-0.344	-0.057
1987	311,016	311,468	0.021	-0.038	-0.059
1988	311,194	310,916	0.022	-0.041	-0.063
1989	322,102	322,228	0.084	0.022	-0.062
1990	329,365	329,178	0.125	0.060	-0.065
1991	313,718	314,183	0.037	-0.023	-0.059
1992	311,234	310,859	0.023	-0.041	-0.064
1993	305,573	305,079	-0.009	-0.073	-0.064
1994	304,954	304,516	-0.013	-0.076	-0.063
1995	302,715	302,693	-0.026	-0.086	-0.061
1996	256,450	257,628	-0.287	-0.335	-0.048
1997	254,685	249,057	-0.297	-0.382	-0.085
1998	271,152	271,482	-0.204	-0.258	-0.054

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
1999	265,433	265,594	-0.236	-0.291	-0.055
2000	286,220	285,770	-0.119	-0.180	-0.061
2001	319,844	319,715	0.071	0.008	-0.063
2002	301,583	300,856	-0.032	-0.096	-0.064
2003	286,695	286,791	-0.116	-0.174	-0.058
2004	266,817	266,817	-0.228	-0.284	-0.056
2005	267,888	268,534	-0.222	-0.275	-0.052
2006	251,775	246,007	-0.313	-0.399	-0.085
2007	206,869	207,385	-0.567	-0.612	-0.045
2008	167,557	169,157	-0.789	-0.823	-0.033
2009	235,375	235,180	-0.406	-0.459	-0.052
2010	254,135	253,615	-0.300	-0.357	-0.057
2011	259,422	259,394	-0.270	-0.325	-0.055
2012	119,987	117,715	-1.058	-1.107	-0.048
2013	110,188	110,379	-1.114	-1.147	-0.033
2014	110,649	110,191	-1.111	-1.148	-0.037
2015	120,128	120,078	-1.058	-1.094	-0.036
2016	120,323	120,731	-1.056	-1.090	-0.034
2017	125,172	126,017	-1.029	-1.061	-0.032
2018	162,404	162,404	-0.819	-0.860	-0.041
2019	215,691	211,475	-0.517	-0.589	-0.072
2020	212,875	212,986	-0.533	-0.581	-0.048
2021	177,904	178,432	-0.731	-0.772	-0.041
2022	189,583	189,945	-0.665	-0.708	-0.043
2023	175,210	176,604	-0.746	-0.782	-0.036
2024	167,286	168,584	-0.791	-0.826	-0.035
2025	114,679	115,146	-1.088	-1.121	-0.032
2026	117,871	117,709	-1.070	-1.107	-0.036
2027	110,217	110,764	-1.114	-1.145	-0.031
2028	116,362	116,353	-1.079	-1.114	-0.035
2029	122,708	120,436	-1.043	-1.092	-0.049
2030	135,119	137,736	-0.973	-0.996	-0.023
2031	151,228	153,008	-0.882	-0.912	-0.030
2032	125,186	125,642	-1.029	-1.063	-0.034
2033	111,941	116,116	-1.104	-1.115	-0.012
2034	136,391	133,290	-0.966	-1.021	-0.055
2035	164,610	164,407	-0.806	-0.849	-0.043
2036	127,088	126,292	-1.018	-1.059	-0.041
2037	126,891	126,090	-1.019	-1.060	-0.041
2038	139,756	142,272	-0.947	-0.971	-0.025
2039	145,498	144,486	-0.914	-0.959	-0.045
2040	137,532	141,102	-0.959	-0.978	-0.018
2041	246,513	245,448	-0.343	-0.402	-0.059
2042	192,647	190,897	-0.648	-0.703	-0.055
2043	204,429	204,251	-0.581	-0.629	-0.048
2044	168,442	165,259	-0.784	-0.844	-0.060
2045	148,047	148,056	-0.900	-0.939	-0.039
2046	264,589	264,602	-0.241	-0.296	-0.055
2047	288,833	289,527	-0.104	-0.159	-0.055
2048	126,138	126,291	-1.024	-1.059	-0.036
2049	94,658	93,766	-1.202	-1.239	-0.037
2050	136,573	136,638	-0.965	-1.002	-0.038
2051	226,751	227,167	-0.455	-0.503	-0.048
2052	198,751	199,295	-0.613	-0.657	-0.043

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2053	122,547	123,812	-1.044	-1.073	-0.029
2054	82,877	82,877	-1.268	-1.299	-0.031
2055	172,232	172,232	-0.763	-0.806	-0.043
2056	238,254	237,984	-0.390	-0.443	-0.053
2057	143,498	143,498	-0.925	-0.964	-0.039
2058	130,537	131,038	-0.999	-1.033	-0.034
2059	141,697	142,352	-0.936	-0.971	-0.035
2060	109,896	109,617	-1.115	-1.151	-0.036
2061	123,778	123,535	-1.037	-1.075	-0.038
2062	108,606	109,548	-1.123	-1.152	-0.029
2063	119,840	119,620	-1.059	-1.096	-0.037
2064	256,814	255,904	-0.285	-0.344	-0.059
2065	251,438	252,086	-0.315	-0.365	-0.050
2066	55,282	55,282	-1.424	-1.451	-0.027
2067	63,655	63,655	-1.377	-1.405	-0.028
2068	172,138	172,322	-0.764	-0.805	-0.042
2069	261,856	261,856	-0.256	-0.311	-0.055
2070	293,389	293,389	-0.078	-0.137	-0.059
2071	105,042	101,833	-1.143	-1.194	-0.051
2072	301,281	301,529	-0.034	-0.093	-0.059
2073	101,475	101,995	-1.163	-1.193	-0.030
2074	85,417	86,321	-1.254	-1.280	-0.026
2075	110,316	110,232	-1.113	-1.148	-0.035
2076	295,777	295,780	-0.065	-0.124	-0.060
2077	279,255	279,193	-0.158	-0.216	-0.058
2078	136,682	136,682	-0.964	-1.002	-0.038
2079	130,293	129,645	-1.000	-1.041	-0.041
2080	294,127	296,106	-0.074	-0.122	-0.048
2081	291,061	291,274	-0.091	-0.149	-0.058
2082	292,507	293,574	-0.083	-0.136	-0.053
2083	208,120	207,103	-0.560	-0.614	-0.053
2084	222,462	222,002	-0.479	-0.531	-0.052
2085	250,910	250,714	-0.318	-0.373	-0.055
2086	273,382	273,382	-0.191	-0.248	-0.057
2087	302,125	301,311	-0.029	-0.094	-0.065
2088	232,933	232,653	-0.420	-0.473	-0.053
2089	236,992	237,185	-0.397	-0.448	-0.051
2090	291,299	292,507	-0.090	-0.142	-0.052
2091	273,716	273,483	-0.189	-0.247	-0.058
2092	178,526	179,519	-0.727	-0.766	-0.038
2093	297,766	297,862	-0.054	-0.113	-0.059
2094	317,421	318,586	0.058	0.002	-0.056
2095	285,754	285,531	-0.121	-0.181	-0.059
2096	272,921	272,921	-0.194	-0.250	-0.056
2097	265,529	270,207	-0.236	-0.265	-0.030
2098	283,985	283,985	-0.131	-0.189	-0.058
2099	270,643	270,643	-0.207	-0.263	-0.056
2100	308,356	308,752	0.006	-0.053	-0.059
2101	325,691	326,641	0.104	0.046	-0.058
2102	335,208	335,911	0.158	0.097	-0.061
2103	306,790	307,038	-0.003	-0.062	-0.060
2104	306,173	306,151	-0.006	-0.067	-0.061
2105	276,774	271,178	-0.172	-0.260	-0.088
2106	99,694	100,018	-1.173	-1.204	-0.031

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2107	251,532	251,486	-0.315	-0.369	-0.054
2108	119,476	119,137	-1.061	-1.099	-0.038
2109	265,777	266,938	-0.234	-0.283	-0.049
2110	259,800	260,332	-0.268	-0.320	-0.052
2111	177,793	177,510	-0.732	-0.777	-0.045
2112	110,062	110,062	-1.114	-1.149	-0.034
2113	196,998	197,674	-0.623	-0.666	-0.042
2114	97,411	97,915	-1.186	-1.216	-0.030
2115	225,338	227,353	-0.463	-0.502	-0.039
2116	119,764	120,132	-1.060	-1.093	-0.034
2117	166,970	167,365	-0.793	-0.833	-0.040
2118	142,477	159,208	-0.931	-0.878	0.054
2119	126,910	127,580	-1.019	-1.052	-0.033
2120	118,897	120,209	-1.065	-1.093	-0.028
2121	105,105	105,370	-1.142	-1.175	-0.032
2122	121,855	121,708	-1.048	-1.085	-0.037
2123	125,473	121,919	-1.027	-1.083	-0.056
2124	172,014	167,700	-0.764	-0.831	-0.067
2125	83,774	84,154	-1.263	-1.292	-0.029
2126	94,011	94,011	-1.205	-1.237	-0.032
2127	73,643	73,643	-1.320	-1.350	-0.029
2128	69,772	69,772	-1.342	-1.371	-0.029
2129	79,570	79,570	-1.287	-1.317	-0.030
2130	67,873	67,873	-1.353	-1.382	-0.029
2131	80,560	80,560	-1.281	-1.312	-0.030
2132	134,036	134,546	-0.979	-1.014	-0.035
2133	90,066	89,977	-1.227	-1.260	-0.032
2134	66,615	69,524	-1.360	-1.373	-0.012
2135	94,419	100,384	-1.203	-1.202	0.001
2136	63,894	71,871	-1.375	-1.360	0.016
2137	55,421	59,619	-1.423	-1.427	-0.004
2138	142,777	150,228	-0.930	-0.927	0.002
2139	46,588	44,597	-1.473	-1.510	-0.037
2140	16,564	16,564	-1.643	-1.665	-0.022
2141	6,898	6,898	-1.698	-1.718	-0.020
2142	12,577	12,577	-1.665	-1.687	-0.021
2143	74,664	74,182	-1.315	-1.347	-0.032
2144	38,408	38,435	-1.519	-1.544	-0.025
2145	42,482	42,482	-1.496	-1.522	-0.025
2146	68,207	68,207	-1.351	-1.380	-0.029
2147	15,059	15,059	-1.651	-1.673	-0.022
2148	52,885	52,083	-1.438	-1.469	-0.031
2149	67,281	66,150	-1.356	-1.391	-0.035
2150	26,462	25,924	-1.587	-1.613	-0.026
2151	9,967	9,967	-1.680	-1.701	-0.021
2152	26,463	26,463	-1.587	-1.610	-0.023
2153	65,032	65,032	-1.369	-1.397	-0.028
2154	34,652	34,312	-1.541	-1.567	-0.026
2155	48,886	48,886	-1.460	-1.486	-0.026
2156	6,829	6,829	-1.698	-1.718	-0.020
2157	14,237	14,237	-1.656	-1.678	-0.021
2158	11,111	11,565	-1.674	-1.692	-0.019
2159	67,750	74,031	-1.354	-1.348	0.006
2160	76,012	82,196	-1.307	-1.303	0.004

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2161	7,669	7,669	-1.693	-1.714	-0.021
2162	7,296	7,296	-1.695	-1.716	-0.021
2163	115,059	110,172	-1.086	-1.148	-0.062
2164	102,837	102,402	-1.155	-1.191	-0.036
2165	276,109	284,288	-0.176	-0.188	-0.012
2166	326,225	332,740	0.107	0.080	-0.028
2167	319,127	326,348	0.067	0.044	-0.023
2168	5,967	5,967	-1.703	-1.723	-0.020
2169	82,933	82,933	-1.268	-1.299	-0.031
2170	114,807	114,799	-1.088	-1.123	-0.035
2171	94,012	94,012	-1.205	-1.237	-0.032
2172	160,467	158,267	-0.830	-0.883	-0.053
2173	224,102	229,021	-0.470	-0.493	-0.023
2174	181,294	181,294	-0.712	-0.756	-0.044
2175	5,810	5,810	-1.704	-1.724	-0.020
2176	7,561	7,561	-1.694	-1.714	-0.021
2177	7,344	7,344	-1.695	-1.716	-0.021
2178	183,267	193,561	-0.701	-0.688	0.012
2179	29,966	30,146	-1.567	-1.590	-0.023
2180	72,841	72,841	-1.325	-1.354	-0.029
2181	90,361	90,361	-1.226	-1.258	-0.032
2182	42,222	42,222	-1.498	-1.523	-0.025
2183	71,099	71,101	-1.335	-1.364	-0.029
2184	322,049	336,344	0.084	0.100	0.016
2185	404,708	411,309	0.551	0.513	-0.038
2186	25,700	27,617	-1.591	-1.604	-0.012
2187	74,228	76,173	-1.317	-1.336	-0.019
2188	70,588	70,655	-1.338	-1.366	-0.029
2189	51,612	52,564	-1.445	-1.466	-0.021
2190	23,839	23,926	-1.602	-1.624	-0.022
2191	14,523	14,523	-1.654	-1.676	-0.021
2192	85,455	85,455	-1.254	-1.285	-0.031
2193	63,181	63,299	-1.379	-1.407	-0.027
2194	86,982	86,648	-1.245	-1.278	-0.033
2195	82,203	82,016	-1.272	-1.304	-0.032
2196	299,494	311,797	-0.044	-0.036	0.008
2197	320,351	332,093	0.074	0.076	0.002
2198	223,429	223,561	-0.474	-0.523	-0.049
2199	168,846	177,076	-0.782	-0.779	0.003
2200	440,876	438,868	0.755	0.665	-0.090
2201	372,905	379,365	0.371	0.337	-0.034
2202	44,902	45,993	-1.483	-1.502	-0.020
2203	99,042	98,750	-1.177	-1.211	-0.035
2204	52,425	52,425	-1.440	-1.467	-0.027
2205	64,722	65,928	-1.371	-1.392	-0.022
2206	50,454	50,557	-1.451	-1.477	-0.026
2207	57,238	57,988	-1.413	-1.436	-0.023
2208	49,592	49,644	-1.456	-1.482	-0.026
2209	40,610	40,610	-1.507	-1.532	-0.025
2210	42,050	42,308	-1.499	-1.523	-0.024
2211	44,598	44,598	-1.484	-1.510	-0.026
2212	25,575	25,575	-1.592	-1.615	-0.023
2213	47,247	47,557	-1.470	-1.494	-0.024
2214	37,400	37,400	-1.525	-1.550	-0.025

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2215	42,331	43,358	-1.497	-1.517	-0.020
2216	31,519	31,529	-1.558	-1.582	-0.024
2217	38,805	38,805	-1.517	-1.542	-0.025
2218	77,252	76,524	-1.300	-1.334	-0.034
2219	51,962	51,962	-1.443	-1.469	-0.027
2220	31,237	31,408	-1.560	-1.583	-0.023
2221	126,557	126,533	-1.021	-1.058	-0.037
2222	60,510	59,292	-1.395	-1.429	-0.034
2223	44,932	44,932	-1.483	-1.508	-0.026
2224	77,459	77,252	-1.299	-1.330	-0.031
2225	50,119	50,119	-1.453	-1.480	-0.026
2226	128,299	128,262	-1.011	-1.048	-0.037
2227	93,588	91,113	-1.208	-1.253	-0.046
2228	88,826	88,843	-1.234	-1.266	-0.031
2229	104,834	104,834	-1.144	-1.178	-0.034
2230	126,637	124,392	-1.021	-1.070	-0.049
2231	103,789	99,463	-1.150	-1.207	-0.057
2232	88,548	86,811	-1.236	-1.277	-0.041
2233	131,797	132,123	-0.992	-1.027	-0.036
2234	73,555	73,598	-1.321	-1.350	-0.029
2235	65,252	63,872	-1.368	-1.404	-0.036
2236	65,570	64,493	-1.366	-1.400	-0.034
2237	32,929	32,929	-1.550	-1.574	-0.024
2238	38,866	38,785	-1.517	-1.542	-0.025
2239	23,048	21,945	-1.606	-1.635	-0.029
2240	22,240	22,240	-1.611	-1.633	-0.023
2241	69,382	68,809	-1.344	-1.376	-0.032
2242	68,414	67,938	-1.350	-1.381	-0.031
2243	32,846	32,993	-1.551	-1.574	-0.023
2244	39,024	38,961	-1.516	-1.541	-0.025
2245	33,825	33,832	-1.545	-1.569	-0.024
2246	31,747	31,747	-1.557	-1.581	-0.024
2247	9,085	9,085	-1.685	-1.706	-0.021
2248	25,452	25,452	-1.593	-1.616	-0.023
2249	7,044	7,044	-1.697	-1.717	-0.020
2250	15,082	15,131	-1.651	-1.673	-0.021
2251	20,692	20,692	-1.620	-1.642	-0.022
2252	8,305	8,305	-1.690	-1.710	-0.021
2253	33,706	33,710	-1.546	-1.570	-0.024
2254	16,214	16,214	-1.645	-1.667	-0.022
2255	17,930	17,930	-1.635	-1.657	-0.022
2256	27,012	26,907	-1.584	-1.608	-0.024
2257	8,904	8,904	-1.686	-1.707	-0.021
2258	15,461	15,452	-1.649	-1.671	-0.022
2259	22,103	22,103	-1.612	-1.634	-0.023
2260	19,620	19,620	-1.626	-1.648	-0.022
2261	15,873	15,873	-1.647	-1.669	-0.022
2262	32,419	32,525	-1.553	-1.577	-0.023
2263	10,873	10,873	-1.675	-1.696	-0.021
2264	31,068	31,068	-1.561	-1.585	-0.024
2265	30,068	29,701	-1.567	-1.592	-0.026
2266	26,295	26,295	-1.588	-1.611	-0.023
2267	38,072	37,857	-1.521	-1.547	-0.026
2268	17,403	17,181	-1.638	-1.661	-0.023

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2269	26,642	26,642	-1.586	-1.609	-0.023
2270	24,440	24,440	-1.598	-1.621	-0.023
2271	10,873	10,873	-1.675	-1.696	-0.021
2272	24,686	24,686	-1.597	-1.620	-0.023
2273	33,954	33,724	-1.545	-1.570	-0.025
2274	10,692	10,692	-1.676	-1.697	-0.021
2275	20,116	20,141	-1.623	-1.645	-0.022
2276	25,181	25,181	-1.594	-1.617	-0.023
2277	24,711	24,780	-1.597	-1.619	-0.022
2278	20,104	20,116	-1.623	-1.645	-0.022
2279	37,630	36,600	-1.524	-1.554	-0.030
2280	52,403	51,881	-1.440	-1.470	-0.029
2281	57,248	56,483	-1.413	-1.444	-0.031
2282	34,351	34,878	-1.542	-1.564	-0.021
2283	37,842	41,503	-1.523	-1.527	-0.004
2284	41,501	46,788	-1.502	-1.498	0.004
2285	43,461	47,486	-1.491	-1.494	-0.003
2286	37,513	38,314	-1.525	-1.545	-0.020
2287	46,480	51,829	-1.474	-1.470	0.004
2288	40,368	44,670	-1.508	-1.510	-0.001
2289	40,945	45,158	-1.505	-1.507	-0.002
2290	38,382	42,330	-1.520	-1.523	-0.003
2291	37,118	37,205	-1.527	-1.551	-0.024
2292	38,950	38,950	-1.516	-1.541	-0.025
2293	43,103	43,134	-1.493	-1.518	-0.025
2294	39,225	39,227	-1.515	-1.540	-0.025
2295	36,838	37,369	-1.528	-1.550	-0.022
2296	31,198	31,264	-1.560	-1.584	-0.023
2297	26,107	26,107	-1.589	-1.612	-0.023
2298	40,290	40,226	-1.509	-1.534	-0.025
2299	28,389	28,389	-1.576	-1.599	-0.023
2300	298,437	366,689	-0.050	0.267	0.317
2301	202,614	265,397	-0.591	-0.292	0.299
2302	142,397	166,667	-0.932	-0.837	0.095
2303	245,332	292,907	-0.350	-0.140	0.210
2304	309,038	373,141	0.010	0.303	0.292
2305	152,665	177,373	-0.874	-0.778	0.096
2306	237,948	308,608	-0.392	-0.054	0.338
2307	313,970	372,626	0.038	0.300	0.262
2308	259,332	311,581	-0.271	-0.037	0.234
2309	230,676	266,673	-0.433	-0.285	0.148
2310	264,008	336,982	-0.244	0.103	0.347
2311	327,931	384,168	0.117	0.363	0.246
2312	264,925	319,624	-0.239	0.007	0.246
2313	201,273	236,970	-0.599	-0.449	0.150
2314	196,869	248,616	-0.624	-0.384	0.239
2315	296,846	416,893	-0.059	0.544	0.603
2316	57,069	63,455	-1.414	-1.406	0.008
2317	77,008	86,074	-1.301	-1.281	0.020
2318	245,542	329,881	-0.349	0.064	0.413
2319	220,508	277,577	-0.490	-0.225	0.265
2320	306,807	368,322	-0.002	0.276	0.278
2321	247,603	293,298	-0.337	-0.138	0.199
2322	174,321	191,723	-0.751	-0.698	0.053

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2323	238,929	282,160	-0.386	-0.199	0.187
2324	279,874	335,374	-0.155	0.094	0.249
2325	305,644	358,913	-0.009	0.224	0.233
2326	202,816	251,900	-0.590	-0.366	0.224
2327	76,044	104,605	-1.307	-1.179	0.128
2328	305,437	415,747	-0.010	0.538	0.548
2329	268,454	395,141	-0.219	0.424	0.643
2330	69,266	89,762	-1.345	-1.261	0.084
2331	95,243	124,439	-1.198	-1.070	0.129
2332	302,375	362,920	-0.027	0.246	0.274
2333	240,506	282,633	-0.377	-0.197	0.180
2334	278,114	325,027	-0.165	0.037	0.202
2335	76,725	102,706	-1.303	-1.189	0.113
2336	271,592	321,573	-0.201	0.018	0.219
2337	256,791	299,297	-0.285	-0.105	0.180
2338	198,087	251,090	-0.617	-0.371	0.246
2339	107,940	130,790	-1.126	-1.035	0.092
2340	181,723	286,988	-0.709	-0.173	0.537
2341	209,254	292,472	-0.554	-0.143	0.411
2342	75,835	112,318	-1.308	-1.136	0.171
2343	104,066	167,895	-1.148	-0.830	0.319
2344	109,154	155,730	-1.120	-0.897	0.223
2345	314,919	423,874	0.043	0.582	0.539
2346	234,306	357,862	-0.412	0.218	0.630
2347	250,237	367,534	-0.322	0.272	0.594
2348	262,736	366,823	-0.252	0.268	0.519
2349	224,476	342,433	-0.468	0.133	0.601
2350	209,913	291,626	-0.550	-0.147	0.403
2351	148,535	249,091	-0.897	-0.382	0.515
2352	65,695	87,479	-1.365	-1.273	0.092
2353	271,292	398,518	-0.203	0.443	0.646
2354	265,967	386,597	-0.233	0.377	0.610
2355	77,855	103,835	-1.297	-1.183	0.113
2356	51,703	56,855	-1.444	-1.442	0.002
2357	64,107	76,619	-1.374	-1.333	0.041
2358	52,723	58,849	-1.439	-1.431	0.007
2359	101,715	125,458	-1.162	-1.064	0.098
2360	63,591	72,722	-1.377	-1.355	0.022
2361	43,608	50,137	-1.490	-1.479	0.011
2362	37,737	43,012	-1.523	-1.519	0.004
2363	37,650	42,618	-1.524	-1.521	0.003
2364	44,304	44,830	-1.486	-1.509	-0.023
2365	43,524	43,932	-1.491	-1.514	-0.023
2366	41,664	42,693	-1.501	-1.521	-0.019
2367	42,419	42,473	-1.497	-1.522	-0.025
2368	53,749	56,246	-1.433	-1.446	-0.013
2369	43,788	44,774	-1.489	-1.509	-0.020
2370	46,740	47,296	-1.472	-1.495	-0.023
2371	29,579	29,782	-1.569	-1.592	-0.022
2372	48,343	48,450	-1.463	-1.489	-0.025
2373	49,379	49,379	-1.457	-1.484	-0.026
2374	45,603	45,663	-1.479	-1.504	-0.025
2375	43,470	43,583	-1.491	-1.516	-0.025
2376	45,683	46,653	-1.478	-1.499	-0.020

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2377	50,946	50,946	-1.449	-1.475	-0.026
2378	43,710	43,819	-1.489	-1.514	-0.025
2379	43,480	43,511	-1.491	-1.516	-0.025
2380	41,901	44,852	-1.500	-1.509	-0.009
2381	26,326	26,479	-1.588	-1.610	-0.022
2382	35,664	35,751	-1.535	-1.559	-0.024
2383	87,918	113,905	-1.240	-1.128	0.112
2384	72,722	86,156	-1.326	-1.281	0.045
2385	80,615	94,529	-1.281	-1.235	0.046
2386	57,502	61,035	-1.412	-1.419	-0.008
2387	111,218	158,806	-1.108	-0.880	0.228
2388	47,402	53,114	-1.469	-1.463	0.006
2389	87,679	110,967	-1.241	-1.144	0.097
2390	31,062	34,120	-1.561	-1.568	-0.007
2391	70,183	86,537	-1.340	-1.279	0.061
2392	38,449	43,296	-1.519	-1.517	0.002
2393	99,267	122,720	-1.175	-1.079	0.096
2394	70,155	82,188	-1.340	-1.303	0.037
2395	64,648	69,371	-1.371	-1.373	-0.002
2396	44,372	44,336	-1.486	-1.511	-0.026
2397	34,936	34,934	-1.539	-1.563	-0.024
2398	40,526	40,247	-1.507	-1.534	-0.027
2399	45,259	46,840	-1.481	-1.498	-0.017
2400	43,418	44,677	-1.491	-1.510	-0.018
2401	44,974	48,494	-1.482	-1.489	-0.006
2402	46,392	46,714	-1.474	-1.498	-0.024
2403	43,029	44,704	-1.493	-1.509	-0.016
2404	43,196	43,278	-1.492	-1.517	-0.025
2405	47,509	49,266	-1.468	-1.484	-0.016
2406	51,183	54,720	-1.447	-1.454	-0.007
2407	46,107	46,290	-1.476	-1.501	-0.025
2408	39,157	39,111	-1.515	-1.540	-0.025
2409	47,553	51,517	-1.468	-1.472	-0.004
2410	48,148	51,749	-1.464	-1.471	-0.006
2411	43,029	45,824	-1.493	-1.503	-0.010
2412	44,382	47,515	-1.486	-1.494	-0.008
2413	44,794	45,121	-1.483	-1.507	-0.024
2414	48,458	51,848	-1.463	-1.470	-0.007
2415	46,593	48,260	-1.473	-1.490	-0.017
2416	46,939	50,239	-1.471	-1.479	-0.008
2417	53,603	58,301	-1.434	-1.434	-0.001
2418	43,265	43,163	-1.492	-1.518	-0.026
2419	54,408	60,101	-1.429	-1.425	0.005
2420	44,777	45,216	-1.483	-1.507	-0.023
2421	45,146	45,613	-1.481	-1.504	-0.023
2422	41,642	41,777	-1.501	-1.526	-0.024
2423	46,821	49,138	-1.472	-1.485	-0.013
2424	42,931	42,947	-1.494	-1.519	-0.025
2425	49,836	53,247	-1.455	-1.462	-0.007
2426	43,766	43,766	-1.489	-1.515	-0.025
2427	47,696	50,921	-1.467	-1.475	-0.008
2428	51,450	53,924	-1.446	-1.459	-0.013
2429	96,982	107,915	-1.188	-1.161	0.028
2430	181,830	195,898	-0.709	-0.675	0.033

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2431	55,890	58,057	-1.421	-1.436	-0.015
2432	181,151	195,828	-0.713	-0.676	0.037
2433	246,408	260,886	-0.344	-0.317	0.027
2434	48,485	49,823	-1.463	-1.481	-0.019
2435	194,688	211,161	-0.636	-0.591	0.045
2436	136,969	159,054	-0.962	-0.879	0.084
2437	107,818	120,616	-1.127	-1.091	0.036
2438	81,684	88,282	-1.275	-1.269	0.006
2439	77,043	83,037	-1.301	-1.298	0.003
2440	58,994	62,541	-1.403	-1.411	-0.008
2441	55,556	60,211	-1.423	-1.424	-0.001
2442	51,792	54,811	-1.444	-1.454	-0.010
2443	141,226	157,654	-0.938	-0.886	0.052
2444	58,406	62,334	-1.406	-1.412	-0.006
2445	62,352	66,989	-1.384	-1.387	-0.002
2446	56,722	63,309	-1.416	-1.407	0.009
2447	73,391	101,371	-1.322	-1.197	0.125
2448	245,702	346,349	-0.348	0.155	0.503
2449	283,550	358,448	-0.134	0.221	0.355
2450	260,843	336,185	-0.262	0.099	0.361
2451	234,506	277,454	-0.411	-0.225	0.186
2452	218,102	280,665	-0.504	-0.208	0.296
2453	35,621	35,621	-1.535	-1.560	-0.024
2454	31,550	31,524	-1.558	-1.582	-0.024
2455	34,623	34,623	-1.541	-1.565	-0.024
2456	92,507	92,453	-1.214	-1.246	-0.032
2457	25,633	25,633	-1.592	-1.615	-0.023
2458	66,054	64,806	-1.363	-1.399	-0.035
2459	55,869	55,879	-1.421	-1.448	-0.027
2460	205,097	207,574	-0.577	-0.611	-0.034
2461	156,050	155,830	-0.855	-0.896	-0.042
2462	175,608	176,537	-0.744	-0.782	-0.038
2463	104,046	103,715	-1.148	-1.184	-0.035
2464	69,529	69,529	-1.344	-1.372	-0.029
2465	25,523	25,368	-1.592	-1.616	-0.024
2466	58,759	58,496	-1.404	-1.433	-0.029
2467	40,157	40,210	-1.510	-1.534	-0.025
2468	142,145	142,145	-0.933	-0.972	-0.039
2469	66,160	65,927	-1.363	-1.392	-0.030
2470	17,400	17,400	-1.638	-1.660	-0.022
2471	31,632	31,667	-1.558	-1.581	-0.024
2472	109,722	108,163	-1.116	-1.159	-0.043
2473	87,898	87,844	-1.240	-1.271	-0.032
2474	23,662	23,654	-1.603	-1.626	-0.023
2475	18,031	18,031	-1.635	-1.657	-0.022
2476	29,986	29,986	-1.567	-1.591	-0.024
2477	17,516	17,516	-1.638	-1.659	-0.022
2478	49,407	49,185	-1.457	-1.485	-0.027
2479	16,389	16,389	-1.644	-1.666	-0.022
2480	24,737	24,737	-1.597	-1.620	-0.023
2481	71,372	70,863	-1.333	-1.365	-0.032
2482	20,780	20,780	-1.619	-1.641	-0.022
2483	130,939	130,887	-0.996	-1.034	-0.038
2484	179,375	177,840	-0.723	-0.775	-0.052

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2485	137,994	137,994	-0.957	-0.995	-0.038
2486	70,465	70,465	-1.338	-1.367	-0.029
2487	132,572	132,313	-0.987	-1.026	-0.039
2488	26,844	26,852	-1.585	-1.608	-0.023
2489	25,359	25,395	-1.593	-1.616	-0.023
2490	27,338	27,374	-1.582	-1.605	-0.023
2491	20,169	20,219	-1.623	-1.645	-0.022
2492	28,522	28,568	-1.575	-1.598	-0.023
2493	33,419	34,144	-1.548	-1.568	-0.020
2494	27,110	27,146	-1.583	-1.606	-0.023
2495	70,568	71,503	-1.338	-1.362	-0.024
2496	42,234	43,424	-1.498	-1.517	-0.019
2497	22,311	22,683	-1.610	-1.631	-0.020
2498	39,529	42,293	-1.513	-1.523	-0.010
2499	26,768	26,980	-1.585	-1.607	-0.022
2500	22,528	22,605	-1.609	-1.631	-0.022
2501	40,644	46,042	-1.507	-1.502	0.005
2502	33,055	33,164	-1.550	-1.573	-0.023
2503	27,725	27,933	-1.580	-1.602	-0.022
2504	22,702	23,001	-1.608	-1.629	-0.021
2505	32,381	32,555	-1.554	-1.576	-0.023
2506	28,528	28,704	-1.575	-1.598	-0.022
2507	13,362	13,362	-1.661	-1.682	-0.021
2508	44,769	47,539	-1.484	-1.494	-0.010
2509	58,134	59,666	-1.408	-1.427	-0.019
2510	65,500	66,502	-1.366	-1.389	-0.023
2511	47,026	48,989	-1.471	-1.486	-0.015
2512	60,761	62,716	-1.393	-1.410	-0.017
2513	38,654	39,305	-1.518	-1.539	-0.021
2514	51,353	54,933	-1.446	-1.453	-0.007
2515	40,507	41,218	-1.508	-1.529	-0.021
2516	26,921	27,092	-1.584	-1.607	-0.022
2517	25,738	26,116	-1.591	-1.612	-0.021
2518	23,808	24,368	-1.602	-1.622	-0.020
2519	24,335	24,335	-1.599	-1.622	-0.023
2520	23,723	24,265	-1.602	-1.622	-0.020
2521	24,943	24,950	-1.596	-1.618	-0.023
2522	14,856	14,856	-1.653	-1.674	-0.022
2523	56,723	57,713	-1.416	-1.438	-0.022
2524	48,935	50,130	-1.460	-1.480	-0.020
2525	78,577	79,533	-1.292	-1.317	-0.025
2526	47,701	50,839	-1.467	-1.476	-0.009
2527	65,551	70,137	-1.366	-1.369	-0.003
2528	37,339	38,052	-1.526	-1.546	-0.021
2529	54,952	56,573	-1.426	-1.444	-0.018
2530	32,640	33,850	-1.552	-1.569	-0.017
2531	36,113	36,688	-1.532	-1.554	-0.021
2532	25,418	26,067	-1.593	-1.612	-0.019
2533	20,196	20,914	-1.622	-1.641	-0.018
2534	34,649	35,242	-1.541	-1.562	-0.021
2535	32,791	32,921	-1.551	-1.574	-0.023
2536	35,324	37,570	-1.537	-1.549	-0.012
2537	16,785	16,785	-1.642	-1.663	-0.022
2538	10,737	10,737	-1.676	-1.697	-0.021

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2539	12,580	12,580	-1.665	-1.687	-0.021
2540	10,710	10,710	-1.676	-1.697	-0.021
2541	11,068	11,068	-1.674	-1.695	-0.021
2542	11,068	11,068	-1.674	-1.695	-0.021
2543	11,068	11,068	-1.674	-1.695	-0.021
2544	11,136	11,136	-1.674	-1.695	-0.021
2545	11,577	11,577	-1.671	-1.692	-0.021
2546	11,167	11,167	-1.673	-1.694	-0.021
2547	11,167	11,167	-1.673	-1.694	-0.021
2548	10,809	10,809	-1.675	-1.696	-0.021
2549	11,470	11,470	-1.672	-1.693	-0.021
2550	11,318	11,318	-1.673	-1.694	-0.021
2551	10,778	10,778	-1.676	-1.697	-0.021
2552	11,751	11,751	-1.670	-1.691	-0.021
2553	11,783	11,783	-1.670	-1.691	-0.021
2554	13,534	13,534	-1.660	-1.681	-0.021
2555	14,724	14,724	-1.653	-1.675	-0.022
2556	10,338	10,338	-1.678	-1.699	-0.021
2557	10,686	10,686	-1.676	-1.697	-0.021
2558	11,113	11,113	-1.674	-1.695	-0.021
2559	12,346	12,346	-1.667	-1.688	-0.021
2560	16,330	16,330	-1.644	-1.666	-0.022
2561	17,652	17,652	-1.637	-1.659	-0.022
2562	15,798	15,798	-1.647	-1.669	-0.022
2563	10,181	10,181	-1.679	-1.700	-0.021
2564	10,775	10,775	-1.676	-1.697	-0.021
2565	10,759	10,759	-1.676	-1.697	-0.021
2566	11,054	11,054	-1.674	-1.695	-0.021
2567	14,114	14,114	-1.657	-1.678	-0.021
2568	28,138	28,138	-1.578	-1.601	-0.023
2569	11,895	11,895	-1.669	-1.690	-0.021
2570	11,760	11,760	-1.670	-1.691	-0.021
2571	28,317	28,317	-1.577	-1.600	-0.023
2572	12,288	12,288	-1.667	-1.688	-0.021
2573	24,814	24,814	-1.596	-1.619	-0.023
2574	19,176	19,173	-1.628	-1.650	-0.022
2575	14,520	14,520	-1.654	-1.676	-0.021
2576	33,898	33,898	-1.545	-1.569	-0.024
2577	13,717	13,717	-1.659	-1.680	-0.021
2578	13,800	13,800	-1.659	-1.680	-0.021
2579	16,843	16,843	-1.641	-1.663	-0.022
2580	14,910	14,910	-1.652	-1.674	-0.022
2581	25,012	25,012	-1.595	-1.618	-0.023
2582	10,859	10,859	-1.675	-1.696	-0.021
2583	11,319	11,319	-1.673	-1.694	-0.021
2584	11,068	11,068	-1.674	-1.695	-0.021
2585	10,639	10,639	-1.676	-1.697	-0.021
2586	10,539	10,539	-1.677	-1.698	-0.021
2587	10,439	10,439	-1.678	-1.698	-0.021
2588	10,366	10,366	-1.678	-1.699	-0.021
2589	10,775	10,775	-1.676	-1.697	-0.021
2590	10,781	10,781	-1.676	-1.697	-0.021
2591	11,299	11,299	-1.673	-1.694	-0.021
2592	12,212	12,212	-1.668	-1.689	-0.021

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2593	16,862	16,862	-1.641	-1.663	-0.022
2594	20,827	20,827	-1.619	-1.641	-0.022
2595	17,741	17,741	-1.636	-1.658	-0.022
2596	18,045	18,045	-1.635	-1.657	-0.022
2597	20,632	20,891	-1.620	-1.641	-0.021
2598	101,062	100,708	-1.165	-1.200	-0.035
2599	30,312	30,167	-1.565	-1.590	-0.024
2600	25,864	26,007	-1.590	-1.613	-0.022
2601	28,680	28,717	-1.574	-1.598	-0.023
2602	31,074	31,150	-1.561	-1.584	-0.023
2603	33,515	33,540	-1.547	-1.571	-0.024
2604	30,359	30,269	-1.565	-1.589	-0.024
2605	9,532	9,532	-1.683	-1.703	-0.021
2606	10,844	10,844	-1.675	-1.696	-0.021
2607	9,428	9,428	-1.683	-1.704	-0.021
2608	9,471	9,471	-1.683	-1.704	-0.021
2609	10,873	10,873	-1.675	-1.696	-0.021
2610	9,562	9,562	-1.683	-1.703	-0.021
2611	9,149	9,149	-1.685	-1.706	-0.021
2612	11,662	11,662	-1.671	-1.692	-0.021
2613	14,224	14,233	-1.656	-1.678	-0.021
2614	17,017	17,017	-1.640	-1.662	-0.022
2615	15,099	15,099	-1.651	-1.673	-0.022
2616	11,805	11,805	-1.670	-1.691	-0.021
2617	31,489	31,541	-1.559	-1.582	-0.023
2618	39,006	39,109	-1.516	-1.540	-0.024
2619	66,166	68,712	-1.363	-1.377	-0.014
2620	40,717	42,326	-1.506	-1.523	-0.016
2621	26,042	27,315	-1.589	-1.605	-0.016
2622	47,624	48,580	-1.467	-1.488	-0.021
2623	42,434	44,661	-1.497	-1.510	-0.013
2624	23,294	24,271	-1.605	-1.622	-0.017
2625	25,495	26,249	-1.592	-1.611	-0.019
2626	41,565	41,954	-1.502	-1.525	-0.023
2627	30,168	30,168	-1.566	-1.590	-0.024
2628	37,056	37,077	-1.527	-1.552	-0.024
2629	33,144	32,831	-1.549	-1.575	-0.026
2630	41,094	41,094	-1.504	-1.529	-0.025
2631	43,630	43,535	-1.490	-1.516	-0.026
2632	42,190	41,957	-1.498	-1.525	-0.027
2633	44,651	44,655	-1.484	-1.510	-0.026
2634	44,594	46,351	-1.485	-1.500	-0.016
2635	45,884	47,411	-1.477	-1.495	-0.017
2636	52,452	55,896	-1.440	-1.448	-0.008
2637	53,070	56,155	-1.437	-1.446	-0.010
2638	45,767	49,519	-1.478	-1.483	-0.005
2639	46,051	49,523	-1.476	-1.483	-0.007
2640	46,310	47,869	-1.475	-1.492	-0.017
2641	46,271	45,979	-1.475	-1.502	-0.027
2642	45,914	46,498	-1.477	-1.500	-0.023
2643	45,597	46,153	-1.479	-1.501	-0.023
2644	44,378	49,551	-1.486	-1.483	0.003
2645	62,425	69,200	-1.384	-1.374	0.009
2646	55,089	61,499	-1.425	-1.417	0.008

Origin TAZ	No-Build Jobs Accessible	Build Jobs Accessible	No-Build z-score	Build z-score	Z_Score_Change
2647	49,462	54,811	-1.457	-1.454	0.003
2648	43,153	47,464	-1.493	-1.494	-0.002
2649	30,909	31,783	-1.562	-1.581	-0.019
2650	29,024	29,033	-1.573	-1.596	-0.023
2651	16,678	16,993	-1.642	-1.662	-0.020
2652	14,880	14,880	-1.652	-1.674	-0.022
2653	12,528	12,583	-1.666	-1.687	-0.021
2654	25,736	25,940	-1.591	-1.613	-0.022
2655	52,243	54,403	-1.441	-1.456	-0.015
2656	127,601	131,920	-1.015	-1.028	-0.013
2657	155,764	161,681	-0.856	-0.864	-0.008
2658	6,445	6,445	-1.700	-1.721	-0.020
2659	7,700	7,700	-1.693	-1.714	-0.021
2660	7,885	7,885	-1.692	-1.713	-0.021
2661	6,076	6,076	-1.702	-1.723	-0.020
2662	7,336	7,336	-1.695	-1.716	-0.021
2663	5,744	5,744	-1.704	-1.724	-0.020
2664	5,128	5,128	-1.708	-1.728	-0.020
2665	8,175	8,175	-1.690	-1.711	-0.021
2666	19,169	19,169	-1.628	-1.650	-0.022
2667	75,984	75,984	-1.307	-1.337	-0.030
2668	78,027	78,040	-1.296	-1.326	-0.030
2669	75,145	75,145	-1.312	-1.342	-0.030
2670	73,997	73,997	-1.318	-1.348	-0.030
2671	90,947	90,947	-1.223	-1.254	-0.032
2672	162,788	162,679	-0.816	-0.859	-0.042
2673	193,787	193,444	-0.641	-0.689	-0.048
2674	135,125	135,813	-0.973	-1.007	-0.034
2675	22,239	22,650	-1.611	-1.631	-0.020
2676	16,938	16,944	-1.641	-1.663	-0.022
2677	17,100	17,100	-1.640	-1.662	-0.022
2678	12,497	12,497	-1.666	-1.687	-0.021

Summary Results

	No-Build Jobs Accessible	Build Jobs Accessible
Average	307,235	318,307
Median	327,126	341,062
Standard Deviation	176,922	181,261

Appendix " : Place Type Definitions from Imagine 2040

Place Type Summary Document

Section B - Place Type Palette



A place type palette was created for Imagine 2040 to identify and describe different development patterns, types, and intensities prevalent in the region. Other place types were added to the palette to represent emerging development themes or concepts popular in the region (e.g., transit-oriented development, traditional neighborhood development, or new village centers).

The intent of the palette was to include enough diversity between place types so that participants would have sufficient means to describe their vision and plans for the region. The palette is not intended as an exhaustive list of every potential place type, and efforts were made to minimize the number of categories to allow for a meaningful comparison between development scenarios.

Place types created for Imagine 2040 include:

- parks and open space
- working farm
- rural living
- mobile home park
- large-lot residential neighborhood
- shade tree residential neighborhood
- small-lot residential neighborhood
- multi-family residential neighborhood
- mixed-density residential neighborhood
- urban neighborhood
- high-rise residential
- rural cross roads
- neighborhood commercial center
- suburban commercial center
- suburban hotel
- suburban office center
- regional employment center
- light industrial center
- heavy industrial center
- mixed-use neighborhood
- mixed-use center
- town center
- transit-oriented development
- metropolitan center
- airport
- civic and institutional
- health care campus
- university campus

Detailed descriptions for all twenty-eight place types are provided on the following pages.

Parks and Open Space (POS)



Parks and open space include active and passive land dedicated for conservation. These areas are typically undisturbed or undeveloped and have been protected from development by local, state, and federal agencies or by public, private, and nonprofit organizations. In the region,

these areas include state parks, permanent conservation areas, park land, athletic fields, cemeteries, and dedicated open space within residential neighborhoods.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- state park / wildlife refuge area
- natural area
- wildlife corridor
- greenway
- stormwater retention / detention area
- community park
- athletic fields

Secondary Land Uses

- cemetery
- water dependent, recreation activities
- community park

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separated Uses
Site Efficiency Factor		N/A
Typical Lot Coverage		N/A
Residential Density		N/A
Non-Residential Intensity		N/A
Prevailing Building Height		N/A
Average Dwelling Unit Size		N/A
Average Non-Residential Building Size		N/A
Transportation Choices	Auto, Bicycle, Walking	
Typical Block Length		N/A
Setback or Build-To Line		N/A
Open Space Elements	Natural Areas, Greenways	
Street Pattern		Curvilinear
Street Connectivity		Low
Parking Provisions		N/A
Typical Street Cross Section		Rural/Suburban
General Water Usage		N/A
General Sewer Usage		N/A

¹ See section F of this document for more information on the variables included in the form and pattern table.



There are locations throughout the Triangle Region identified as parks and open space. These areas protect the region's natural terrain and water features, serve as buffers between incompatible land uses, and provide areas for active recreation. Notable sites include: Homestead State Park, Eno River State Park, Lake Crabtree County Park, Blue Jay Point County Park, Hemlock Bluffs, and Falls Lake Trail.



There are also properties throughout the region held in conservation easements or owned outright with the expressed purpose of preservation.



Working Farm (WF)



Working farms are actively being used for agriculture or forestry activities, including cultivated farmland, timber harvest, livestock, or woodlands. These areas also support the

primary residence of the property owner and any out-buildings associated with activities on the working farm.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- cultivated farmland
- timber harvest
- livestock
- woodlands

Secondary Land Uses

- single-family detached home
- warehouse/storage
- light industrial (ancillary to farm activities)

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	99%
Typical Lot Coverage	1-5%
Residential Density	0.05-0.10 D.U.'s ² /Acre
Non-Residential Intensity	0.05-0.10 FAR ³
Prevailing Building Height	1 Story
Average Dwelling Unit Size	1,500-2,000 SF ⁴
Average Non-Residential Building Size	N/A
Transportation Choices	Auto
Typical Block Length	N/A
Setback or Build-To Line	Setback Requirements
Open Space Elements	Cultivated Farmland, Woodlands
Street Pattern	N/A
Street Connectivity	Low
Parking Provisions	N/A
Typical Street Cross Section	Rural
General Water Usage (per SF)	Varies
General Sewer Usage (per SF)	Varies

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet



Working farms are typically located in areas with fertile soils and good drainage. Large and small farms are scattered throughout the region; however, their frequency decreases as proximity to urban centers increases. This is a direct result of land prices and demand for other uses in urban areas.

Working farms prevalent in the region produce hogs, poultry, tobacco, soybean, strawberries, cotton, peanuts, and small grains.



Rural Living (RL)



Rural living areas are characterized by large lots, abundant open space, pastoral views, and a high degree of separation between buildings. Residential homes and hobby farms are scattered throughout the countryside and often integrated into the natural landscape. The lot size and separation between buildings decreases approaching areas with greater development densities.

Buildings at the edges of most rural areas are generally oriented toward highways and have direct access to the adjacent highway through a private driveway.

More dense development in the place type may take the form of conservation-based subdivisions (a.k.a. cluster development), which leave larger areas for permanent open space and uninterrupted views of the surrounding countryside.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home
- mobile home
- hobby farm

Secondary Land Uses

- church
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separated Uses
Site Efficiency Factor		99%
Typical Lot Coverage		5-10%
Residential Density		0.05-0.33 D.U.'s ² /Acre
Non-Residential Intensity		N/A
Prevailing Building Height		1 Story
Average Dwelling Unit Size		1,500-2,000 SF ³
Average Non-Residential Building Size		1,000-1,500 SF ³
Transportation Choices		Auto
Typical Block Length		2,500-5,000 LF ⁴
Setback or Build-To Line		Setback Requirements
Open Space Elements		Cultivated Farmland, Woodlands
Street Pattern		Curvilinear
Street Connectivity		Low
Parking Provisions		Private Driveways
Typical Street Cross Section		Rural
General Water Usage (per unit)		250 GPD
General Sewer Usage (per unit)		250 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Rural living areas are present throughout the region. Many people choose to live in these places as a result of their connection to agriculture, proximity to natural areas or scenic views, or the enjoyment of living in a natural setting.



Mobile Home Community (MHP)



Mobile home parks are characterized by single-wide and double-wide mobile homes on individual lots, which may be clustered in an area owned and managed by a single entity. These

neighborhoods are found throughout the region and often provide an affordable housing option for residents.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-wide mobile home
- double-wide mobile home
- modular home

Secondary Land Uses

- community center
- pool and amenities

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	90-95%
Typical Lot Coverage	50-65%
Residential Density	6-12 D.U.'s ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	1 Story
Average Dwelling Unit Size	500-1,000 SF ³
Average Non-Residential Building Size	N/A
Transportation Choices	Auto
Typical Block Length	400-800 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Greenways, Natural Areas
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Private Driveway
Typical Street Cross Section	Rural/Suburban
General Water Usage (per unit)	200 GPD
General Sewer Usage (per unit)	200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Mobile home parks are scattered throughout the region. Some local governments restrict them to designated areas or districts. It is common for mobile home communities to be located in both rural or suburban areas of the region.



Large-Lot, Residential Neighborhood (LLRN)



Large-Lot residential neighborhoods are generally formed as subdivisions and consist almost entirely of single-family detached homes. Buildings are oriented interior to the site and are typically buffered from surrounding development by transitional uses, topography, or vegetative areas.

Many neighborhoods ‘borrow’ open space from adjacent rural or natural settings.

Blocks are typically large and streets rural or suburban in character. In some cases, the neighborhood is served by only one long cul-de-sac.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home

Secondary Land Uses

- church
- school
- community center
- pool and amenities
- natural areas
- horse stable

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	85-95%
Typical Lot Coverage	30-65%
Residential Density	0.33-1.00 D.U.'s ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	1-3 Stories
Average Dwelling Unit Size	2,500-7,000 SF ³
Average Non-Residential Building Size	N/A
Transportation Choices	Auto
Typical Block Length	800-1,500 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Greenways, Natural Areas
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Private Driveway
Typical Street Cross Section	Rural or Suburban
General Water Usage (per unit)	250 GPD
General Sewer Usage (per unit)	200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Large-lot, residential neighborhoods are generally found on the fringes of rural or suburban living areas. They are traditionally auto-dependent, with low street connectivity and an abundance of cul-de-sacs.



ShadeTree, Residential Neighborhood (STRN)



Shade tree, residential neighborhoods include homes built in the post-WWII era on streets now with mature trees. They are found in close proximity to traditional urban centers, and provide the rooftops necessary to support nearby commercial and employment areas. Home architecture, building setbacks, and lot size and

width may vary within the same neighborhood. Lakes, parkland, and community buildings (e.g., schools, churches, or community centers) are prevalent features in the neighborhood. Large blocks and curvilinear streets make shade-tree, residential neighborhoods typically auto-dependent.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home

Secondary Land Uses

- duplex
- mobile home
- church
- school
- community center
- park or playground
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	25-65%
Residential Density	1-4 D.U.'s ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	1,500-2,500 SF ³
Average Non-Residential Building Size	N/A
Transportation Choices	Auto
Typical Block Length	800-1,500 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Greenways, Natural Areas
Street Pattern	Modified Grid
Street Connectivity	Medium
Parking Provisions	Private Driveway
Typical Street Cross Section	Suburban
General Water Usage (per unit)	250 GPD
General Sewer Usage (per unit)	200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Shade tree, residential neighborhoods in the Triangle-Region were generally developed between the 1950s and 1970s in places like Apex, Cary, and Morrisville.



Small-Lot, Residential Neighborhood (SLRN)



Small-lot, residential neighborhoods are generally formed as subdivisions or communities, with a relatively uniform housing type and density throughout. They are often found in close proximity to commercial and suburban office centers, and provide the rooftops necessary to

support the centers. Homes are oriented interior to the neighborhood and are typically buffered from surrounding development by transitional uses or landscaped areas.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home
- townhome
- duplex

Secondary Land Uses

- church
- school
- community center
- pool and amenities
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	25-65%
Residential Density	1-5 D.U.s ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	1,500-3,500 SF ³
Average Non-Residential Building Size	N/A
Transportation Choices	Auto
Typical Block Length	600-1,200 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Greenways, Natural Areas
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Private Driveway
Typical Street Cross Section	Rural or Suburban
General Water Usage (per unit)	250 GPD
General Sewer Usage (per unit)	200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Small-lot, residential neighborhoods are found near suburban commercial and office centers. They often locate near schools or parks and tend to have reasonable access to major commuter corridors. Ideally, these neighborhoods are marketed as having better than average commute times.



Multi-Family Residential Neighborhood (MFRN)



Multi-family residential neighborhoods are generally formed as complexes or communities, with a relatively uniform housing type and density throughout. They support the highest residential density in the suburban landscape, and may contain one of the following housing types: condominiums, townhomes, senior housing, or apartments.

Multi-family suburban neighborhoods are found in close proximity to suburban commercial and office centers, and provide the rooftops necessary to support various suburban commercial and office uses within the centers. Buildings are oriented interior to the site and are typically buffered from surrounding development by transitional uses or landscaped areas. Large parking lots and low street connectivity are common in multi-family suburban neighborhoods.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- apartment
- townhome
- condominium
- senior housing

Secondary Land Uses

- church
- community center
- pool and amenities
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separated Uses
Site Efficiency Factor		90-95%
Typical Lot Coverage		30-60%
Residential Density		6.0-16.0 D.U. ² /Acre
Non-Residential Intensity		N/A
Prevailing Building Height		1-4 Stories
Average Dwelling Unit Size		800-1,500 SF ³
Average Non-Residential Building Size		N/A
Transportation Choices		Auto
Typical Block Length		600-1,200 LF ⁴
Setback or Build-To Line		Setback Requirements
Open Space Elements	Greenways, Neighborhood Park	
Street Pattern		Modified Grid
Street Connectivity		Medium
Parking Provisions	Surface Lot / On-Street	Parking
Typical Street Cross Section		Suburban
General Water Usage (per unit)		220 GPD
General Sewer Usage (per unit)		180 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Multi-family residential neighborhoods are often found near various suburban commercial and office centers. They are found throughout the region; often on or near major commuter corridors or near highway interchanges that offer better than average commute times.



Mixed-Density Residential Neighborhood (MRN)



Mixed-density residential neighborhoods are characterized by a variety of housing types and residential densities organized in a cohesive, well-connected community. Neighborhoods are generally designed to promote a wide range of housing choices in the region. Homes are oriented interior to the site and are typically buffered from surrounding development by

transition uses or landscaped areas. Small blocks and a modified grid of streets support multiple modes of transportation.

Mixed-density residential neighborhoods are found in close proximity to suburban commercial and suburban office centers, and provide the rooftops necessary to support commercial and office uses within the centers.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home
- townhome
- condominium
- apartment
- duplex

Secondary Land Uses

- natural areas
- community center
- pool and amenities
- school
- church

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mix of Housing Types
Site Efficiency Factor	85-90%
Typical Lot Coverage	0-40%
Residential Density	4-12 D.U's ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	1-3 Stories
Average Dwelling Unit Size	1,500-2,000 SF ³
Average Non-Residential Building Size	NA
Transportation Choices	Auto, Walking
Typical Block Length	400-1,200 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Neighborhood Parks/ Greenways/ Storm Corridors
Street Pattern	Modified Grid
Street Connectivity	High
Parking Provisions	Private Driveway, Surface Lot
Typical Street Cross Section	N/A
General Water Usage (per unit)	225 GPD
General Sewer Usage (per unit)	200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Mixed-density residential neighborhoods are found near suburban commercial and office centers. They often locate near schools or parks and tend to have reasonable access to major commuter corridors. Ideally, these neighborhoods are better than average commute times.



Urban Neighborhood (UN)



Urban neighborhoods support a mix of moderate- to high-density housing options. These neighborhoods are relatively compact, and may contain one or more of the following housing types: small lot, single family detached, townhomes, condominiums, or apartments. Buildings are generally oriented toward the street.

The design and scale of development in an urban neighborhood encourages active living with a complete and comprehensive network of walkable streets. Cul-de-sacs are restricted to areas where topography, environment, or existing development makes other street connections prohibitive.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home
- townhome
- duplex
- apartment
- condominium

Secondary Land Uses

- church
- school
- pocket parks

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Mix of Uses
Site Efficiency Factor*		80-90%
Typical Lot Coverage*		30-65%
Residential Density		6-10 D.U. ² /Acre
Non-Residential Intensity		N/A
Prevailing Building Height		1-3 Stories
Average Dwelling Unit Size		1,000-2,000 SF ³
Average Non-Residential Building Size		N/A
Transportation Choices		Auto
Typical Block Length		300-600 LF ⁴
Setback or Build-To Line		Setback Requirements
Open Space Elements	Greenways, Neighborhood Park	
Street Pattern		Grid
Street Connectivity		High
Parking Provisions		Surface Lot, Private Driveway
Typical Street Cross Section		Urban
General Water Usage (per unit)		225-250 GPD
General Sewer Usage (per unit)		180-200 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet ⁴(LF) - Linear Feet



Urban neighborhoods are traditionally located near the edge of urban centers or downtowns. They often represent the first tier of residential development around a central city, town, or courthouse area and are well served by a series of streets connecting the central city and post WWII era suburbs.



High-Rise Residential (HRR)



High-rise residential areas support the highest residential densities in the region outside of metropolitan centers. They generally include one building surrounded by surface parking, which can

easily be seen for some distance from the site. Some high-rise residential buildings may include parking decks. Apartments and condominiums occupy high-rise residential towers in the region.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- apartment
- condominium

Secondary Land Uses

- senior housing
- ground floor retail
- pocket park

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Patter	Mix of Uses
Site Efficiency Factor	90-95%
Typical Lot Coverage	85-95%
Residential Density	28-100 D.U. ² /Acre
Non-Residential Intensity	N/A
Prevailing Building Height	10-25 Stories
Average Dwelling Unit Size	800-2,000 SF ³
Average Non-Residential Building Size	N/A
Transportation Choices	Auto, Walking, Transit
Typical Block Length	N/A
Setback or Build-To Line	Build to Line Requirements
Open Space Elements	Pocket Parks, Public Plazas
Street Pattern	N/A
Street Connectivity	N/A
Parking Provisions	Surface Lot/Parking Deck
Typical Street Cross Section	Urban
General Water Usage (per unit)	180 GPD
General Sewer Usage (per unit)	150 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(S.F.) - Square Feet



High-rise residential areas outside metropolitan centers are limited in the Triangle Region. Existing developments include _____, _____, and _____.



Rural Cross Roads (RCR)



Rural cross roads represent the small nodes of commercial activity along rural highways. Small-scale businesses, such as gas stations, convenience stores, or restaurants, serve some

daily needs of the surrounding rural population. Employment and other commercial needs for rural residents are provided for in other suburban commercial and suburban office centers.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- gas station
- sit down restaurant
- convenience store
- hardware store

Secondary Land Uses

- fire station
- post office
- general government center

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separated Uses
Site Efficiency Factor		90-95%
Typical Lot Coverage		10-25%
Residential Density		N/A
Non-Residential Intensity		0.10-0.20 FAR ²
Prevailing Building Height		1 Story
Average Dwelling Unit Size		N/A
Average Non-Residential Building Size		1,000-2,000 SF ³
Transportation Choices		Auto
Typical Block Length		N/A
Setback or Build-To Line		Setback Requirements
Open Space Elements		Natural Areas, Stream Corridors
Street Pattern		Curvilinear
Street Connectivity		Low
Parking Provisions		Surface Parking Lot
Typical Street Cross Section		Rural
General Water Usage (per SF)		0.039 GPD
General Sewer Usage (per SF)		0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet



Rural cross roads are generally located near the intersection of two farm-to-market roads (i.e., rural highways) where small-scale commercial uses are often clustered.



Neighborhood Commercial Center (NCC)



Small scale, neighborhood commercial centers provide goods and services to surrounding neighborhoods. Their proximity to neighborhoods requires that operations be low-intensity, unobtrusive, and at a scale and design compatible with nearby residential development. The design of neighborhood commercial centers transitions effectively between residential and non-residential

uses, and includes safe and convenient pedestrian and bicycle access for nearby residents. While this is primarily a commercial category, some neighborhood commercial centers may include upper story residential. Sites also effectively minimize the impact of cut through traffic on nearby neighborhood streets by orienting vehicle access, circulation, etc. toward away from the neighborhood.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- sit down restaurant
- community-serving retail
- small supermarket
- convenience store
- dry cleaner
- bank
- barber shop

Secondary Land Uses

- farmers market
- pocket park

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Patter	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	25-35%
Residential Density	10-15 D.U.s ² /Acre
Non-Residential Intensity	0.50-1.00 FAR ³
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	5,000-20,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Bus
Typical Block Length	400-1,000 LF ⁵
Setback or Build-To Line	Build to Line Requirements
Open Space Elements	Pocket Parks, Public Plazas
Street Pattern	Modified Grid
Street Connectivity	High
Parking Provisions	Surface Lot/On-Street Parking
Typical Street Cross Section	Urban
General Water Usage (per SF)	0.039 GPD
General Sewer Usage (per SF)	0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Neighborhood commercial centers are generally located adjacent to residential neighborhoods near major street intersections. Existing village centers in the region include _____, _____, and _____.



Suburban Commercial Center (SCC)

Suburban commercial centers serve the daily needs of surrounding residential neighborhoods. They typically locate near high-volume roads and key intersections, and are designed to be accessible primarily by automobile. Buildings are set back from the road behind large surface parking lots, with little or no connectivity between adjacent businesses. Common types of suburban centers in the region include multi-tenant strip centers, big box stores, and large shopping malls.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- general commercial services
- sit down or fast food restaurant
- multi-tenant commercial
- big box commercial
- bank
- hotel
- professional office

Secondary Land Uses

- church
- fire station
- police station

Form & Pattern

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	20-40%
Residential Density	N/A
Non-Residential Intensity	0.15-0.25 FAR ²
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	10,000-300,000 SF ³
Transportation Choices	Auto
Typical Block Length	N/A
Setback or Build-To Line	Setback Requirements
Open Space Elements	Natural Areas
Street Pattern	N/A
Street Connectivity	N/A
Parking Provisions	Surface Lot
Typical Street Cross Section	Suburban
General Water Usage (per SF)	0.039 GPD
General Sewer Usage (per SF)	0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet



Suburban commercial centers typically locate near high-volume roads, key intersections, and highway interchanges. They are often surrounded by residential development and other suburban commercial uses, and most sites are chosen to maximize vehicular access.



Suburban Hotel (SH)



Suburban hotels provide short term lodging to the general public, and may include one or more buildings surrounded by surface parking lots. The buildings are generally oriented interior to the site and can be seen for some distance. They tend to locate near high-volume roads and key

intersections, and are designed to be accessible primarily by automobile. Common types of hotels in the region include: business hotel, motel, and extended-stay hotel. Several hotels also include one or more ancillary uses such as conference centers, sit-down restaurants, or night clubs.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- hotel
- motel

Secondary Land Uses

- sit-down restaurant
- fast-food restaurant
- fitness club
- small scale retail
- gas station

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separate Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	30-50%
Residential Density	N/A
Non-Residential Intensity	0.2-1.00 FAR ²
Prevailing Building Height	2-8 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	15,000-125,000 SF ³
Transportation Choices	Auto
Typical Block Length	N/A
Setback or Build-To Line	Setback Requirements
Open Space Elements	Natural Areas
Street Pattern	N/A
Street Connectivity	N/A
Parking Provisions	Surface Lot, Parking Deck
Typical Street Cross Section	Suburban
General Water Usage (per SF)	0.039 GPD
General Sewer Usage (per SF)	0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet



Hotel and lodging areas are present throughout the region, mostly along major thoroughfares and at interstate interchanges. Hotels and motels along Airport Boulevard immediately south of Raleigh-Durham International Airport and Interstate 40 provide some examples for the region.



Suburban Office Center (SOC)



Suburban office centers provide opportunities to concentrate employment in the region on normal workdays. They include both large-scale isolated buildings with numerous employees as well as areas containing multiple businesses

that support and serve one another. They are typically buffered from surrounding development by transitional uses or landscaped areas and are often located in close proximity to major highways or thoroughfares.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- multi-tenant professional office
- medical office
- corporate office
- call center
- research and development

Secondary Land Uses

- bank
- copy and printing services
- sit down or fast food restaurant
- flex space
- general government services

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separated Uses
Site Efficiency Factor		80-90%
Typical Lot Coverage		25-65%
Residential Density		N/A
Non-Residential Intensity		0.20-1.00 FAR ²
Prevailing Building Height		1-3 Stories
Average Dwelling Unit Size		N/A
Average Non-Residential Building Size		10,000-100,000 SF ³
Transportation Choices		Auto
Typical Block Length		800-1,200 LF ⁴
Setback or Build-To Line		Setback Requirements
Open Space Elements	Pocket Parks/Landscape Buffers	
Street Pattern		Curvilinear
Street Connectivity		Low
Parking Provisions		Surface Lot
Typical Street Cross Section		Suburban
General Water Usage (per SF)		0.074 GPD
General Sewer Usage (per SF)		0.064 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet ⁴(L.F.) - Linear Feet



Suburban office centers are typically located near major thoroughfares or suburban commercial uses. Accessibility to urban centers, employment service populations, and access to regional transportation (i.e., interstates and intrastate highways, and airports) are often site selection criteria for suburban office uses.



Regional Employment Center (REC)



A regional employment center draws people from throughout the region (and beyond) for employment activities. The large-scale development, which includes a hierarchy of streets, large sites for a building or group of buildings, and supporting amenities and dedicated open space. Centers tend to locate near major transportation corridors and often

at the intersection of two major highways or an interstate exit. Uses in a regional employment center vary greatly; however, most complement each other in some manner for increased learning, production, or other economies of scale.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- professional office
- corporate campus
- research and development
- government buildings

Secondary Land Uses

- small retail uses
- restaurants

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separate Uses
Site Efficiency Factor	70-85%
Typical Lot Coverage	25-65%
Residential Density	N/A
Non-Residential Intensity	0.10-0.50 FAR ³
Prevailing Building Height	1-10 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	50,000-500,000 SF ⁴
Transportation Choices	Auto, Walking, Transit
Typical Block Length	800-3,000 LF ⁵
Setback or Build-To Line	Setback Requirements
Open Space Elements	Pocket Parks, Greenways
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Surface Lot, Parking Deck
Typical Street Cross Section	Suburban/Rural
General Water Usage (per SF)	0.074 GPD
General Sewer Usage (per SF)	0.064 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Regional employment centers represent large tracts of land with good access to major thoroughfares, interstates, or railroad facilities. The Research Triangle Park is an example of a very large regional employment center in the Triangle Region.



Light Industrial Center (LI)

Light Industrial centers provide opportunities to concentrate employment in the region on normal workdays. Each center generally supports manufacturing and production uses, including warehousing, light manufacturing, medical research, and assembly operations. These areas are found in close proximity to major transportation corridors (i.e., highway or rail)

and are generally buffered from surrounding development by transitional uses or landscaped areas that shield the view of structures, loading docks, or outdoor storage from adjacent properties. Clusters of uses that support or serve one another are often encouraged to locate in the same light industrial center.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- light manufacturing and assembly
- processing facilities
- laboratory
- warehouse
- distribution

Secondary Land Uses

- small scale commercial uses
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	15-65%
Residential Density	N/A
Non-Residential Intensity	0.10-0.20 FAR ²
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	10,000-50,000 SF ³
Transportation Choices	Auto, Trucks
Typical Block Length	800-1,200 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Landscape Buffers
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Surface Lot
Typical Street Cross Section	Suburban
General Water Usage (per SF)	0.079 GPD
General Sewer Usage	0.069 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet ⁴(L.F.) - Linear Feet



Light industrial centers are found near major transportation corridors (i.e., highways or rail) and in locations where water and sewer service is available. They tend to locate away from residential areas but within a reasonable commuting distance of employees.

Light industrial uses also are prevalent near airports and commercial centers and along designated trucking routes.



Heavy Industrial Center (HI)



Heavy industrial centers support large-scale manufacturing and production uses, including assembly and processing, regional warehousing and distribution, bulk storage, and utilities. These areas are found in close proximity to major transportation corridors (e.g., highways or railroads) and are generally buffered from surrounding development by transitional uses or landscaped areas that increase in size

as development intensity increases. Heavy industrial centers may require larger sites because activities are not confined entirely to buildings. Conveyor belts, holding tanks, smoke stacks, or outdoor storage all may be present in a heavy industrial center. Clusters of uses that support or serve heavy industrial centers generally locate in close proximity.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- factory
- heavy assembly plant
- construction contractor
- regional warehouse
- regional distribution and trucking
- landfill

Secondary Land Uses

- small scale commercial uses
- natural areas

Form & Pattern

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separated Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	10-40%
Residential Density	N/A
Non-Residential Intensity	0.10-0.20 FAR ²
Prevailing Building Height	1-2 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	20,000-300,000 SF ³
Transportation Choices	Auto, Trucks
Typical Block Length	800-1,200 LF ⁴
Setback or Build-To Line	Setback Requirements
Open Space Elements	Landscape Buffers
Street Pattern	Curvilinear
Street Connectivity	Low
Parking Provisions	Surface Lot
Typical Street Cross Section	Suburban
General Water Usage (per SF)	0.079 GPD
General Sewer Usage (Per SF)	0.069 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet ⁴(L.F.) - Linear Feet



Heavy industrial centers tend to require efficient access to trucking routes and regional transportation facilities. They locate near major transportation corridors (e.g., highways, interstates and/or railroads). They are generally located away from residential neighborhoods and often are found near other industrial uses.



Mixed - Use Neighborhood (MUN)



A mixed-use neighborhood offers residents the ability to live, shop, work, and play in one community. These neighborhoods include a mixture of housing types and residential densities integrated with goods and services in a walkable community that residents visit on a daily basis.

The design and scale of the development encourages active living through a comprehensive and interconnected network of walkable streets. Mixed-use neighborhoods support multiple modes of transportation.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- single-family detached home
- condominium
- apartment
- townhome
- sit down restaurant
- neighborhood-serving commercial
- professional office
- government building

Secondary Land Uses

- church
- school
- pocket park
- community park
- natural areas

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	35-60%
Residential Density	4-12 D.U.'s ² /Acre
Non-Residential Intensity	0.50-1.50 FAR ³
Prevailing Building Height	1-4 Stories
Average Dwelling Unit Size	1,000-3,000 SF ⁴
Average Non-Residential Building Size	8,000-50,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Transit (Bus)
Typical Block Length	300-1,200 LF ⁵
Setback or Build-To Line	Build to Line Requirement
Open Space Elements	Pocket Parks, Public Plazas, Amphitheater
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Formal On-Street Parking/ Shared Parking Agreements
Typical Street Cross Section	Suburban/Urban
General Water Usage (per unit/SF)	225/0.039 GPD
General Sewer Usage (per unit/SF)	200/0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Mixed-use neighborhoods can be found near suburban and urban neighborhoods, commercial centers, and suburban office centers. They often locate near schools or parks and tend to have reasonable access to major commuter corridors. Ideally these neighborhoods are marketed as having better than average commute times with multiple transportation choices, including access to transit. The uses within the development's center are accessible to local populations by car, walking, and bicycling. Existing mixed-use neighborhoods in the region include Meadowmont (Chapel Hill), Carpenter Village (Morrisville), and Southern Village (Chapel Hill).



Mixed-Use Center (MUC)



Mixed-use centers serve broader economic, entertainment, and community activities as compared to mixed-use neighborhoods. Uses and buildings are located on small blocks with streets designed to encourage pedestrian activities. Buildings in the core of the mixed-use center may stand three or more stories. Residential units or office space may be found

above storefronts. Parking is satisfied using on-street parking, structured parking, and shared rear-lot parking strategies.

A large-scale mixed use center is may be surrounded by one or more neighborhoods that encourage active living, with a comprehensive and interconnected network of walkable streets.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- sit down restaurant
- community-serving retail
- professional office
- live/work/shop units
- townhome
- condominium
- apartment
- public plaza
- movie theater

Secondary Land Uses

- farmers market
- pocket park
- day care
- dry cleaners

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Patter	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	50-75%
Residential Density	10-30 D.U.'s ² /Acre
Non-Residential Intensity	0.50-2.00 FAR ³
Prevailing Building Height	1-5 Stories
Average Dwelling Unit Size	800-1,500 SF ⁴
Average Non-Residential Building Size	10,000-50,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Bus
Typical Block Length	400-1,000 LF ⁵
Setback or Build-To Line	Build to Line Requirements
Open Space Elements	Neighborhood Parks/ Pocket Parks/ Public Plazas
Street Pattern	Modified Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Structured Parking
Typical Street Cross Section	Urban
General Water Usage (per unit/SF)	180/0.039 GPD
General Sewer Usage (per unit/SF)	150/0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Village centers are concentrated, mixed-use developments that serve one or more surrounding neighborhoods. Existing village centers in the region include North Hills (Raleigh), and proposed plans for the Arboretum (Cary).



Town Center (TC)



Town centers are locally-serving areas of economic, entertainment, and community activity. Uses and buildings are located on small blocks with streets designed to encourage pedestrian activity. Buildings typically stand two or more stories in height with residential units above storefronts. The compact, walkable environment and mix of residential and non-

residential uses in a town center often support multiple modes of transportation.

Town centers often represent the traditional downtown or courthouse area of historic towns and communities found throughout the Triangle Region.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- townhome
- apartment
- senior housing
- sit down restaurant
- community-serving commercial
- professional office
- live/work/shop units
- post office
- community facilities

Secondary Land Uses

- day care
- farmers market
- pocket park

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	90-100%
Residential Density	6-10 D.U.'s ² /Acre
Non-Residential Intensity	0.50-1.50 FAR ³
Prevailing Building Height	1-4 Stories
Average Dwelling Unit Size	800-1,500 SF ⁴
Average Non-Residential Building Size	5,000-25,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Transit (Bus)
Typical Block Length	300-1,200 LF ⁵
Setback or Build-To Line	Build to Line Requirement
Open Space Elements	Pocket Parks, Public Plazas
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Formal On-Street Parking/ Shared Parking Agreements
Typical Street Cross Section	Urban
General Water Usage (per unit/SF)	225/0.039 GPD
General Sewer Usage (per unit/SF)	200/0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Town centers represent the historic center of large and small towns in the region. They are often located at the cross-roads of two historical arterial roadways or along a railroad. They are surrounded by residential neighborhoods and/or agricultural uses. Historically, town centers were established near mills, high points, along transportation corridors, or at the confluence of rivers and streams.

Post offices, town halls, and churches are notable features in town centers as well as neighborhood-oriented service and commercial uses.



Transit - Oriented Development (TOD)



Transit-oriented development (TOD) represents the concentration of mixed-use, dense development around a transit center. Uses and buildings are located on small blocks with streets designed to encourage bicycle and pedestrian activity. High density development is located primarily within ¼-mile of the transit station, with progressively lower densities

spreading out into neighborhoods surrounding the center.

TOD is credited with relieving traffic congestion on the surrounding street network by shifting automobile trips to transit trips and by capturing some trips on-site between complementary residential and non-residential uses.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- condominium
- apartment
- townhome
- sit down restaurant
- general commercial
- professional office
- live/work/shop units
- government building

Secondary Land Uses

- church
- school
- public plaza
- pocket park
- parking structure

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	90-100%
Residential Density	8-15 D.U.'s ² /Acre
Non-Residential Intensity	0.50-1.50 FAR ³
Prevailing Building Height	2-6 Stories
Average Dwelling Unit Size	800-1,500 SF ⁴
Average Non-Residential Building Size	5,000-25,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Transit (Bus, Light Rail, Heavy Rail)
Typical Block Length	300-1,200 LF ⁵
Setback or Build-To Line	Build to Line Requirement
Open Space Elements	Pocket Parks/Public Plazas
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Formal On-Street Parking/ Shared Parking Agreements/ Parking Deck
Typical Street Cross Section	Urban
General Water Usage (per unit / SF)	180/0.039 GPD
General Sewer Usage (per unit / SF)	150/0.034 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

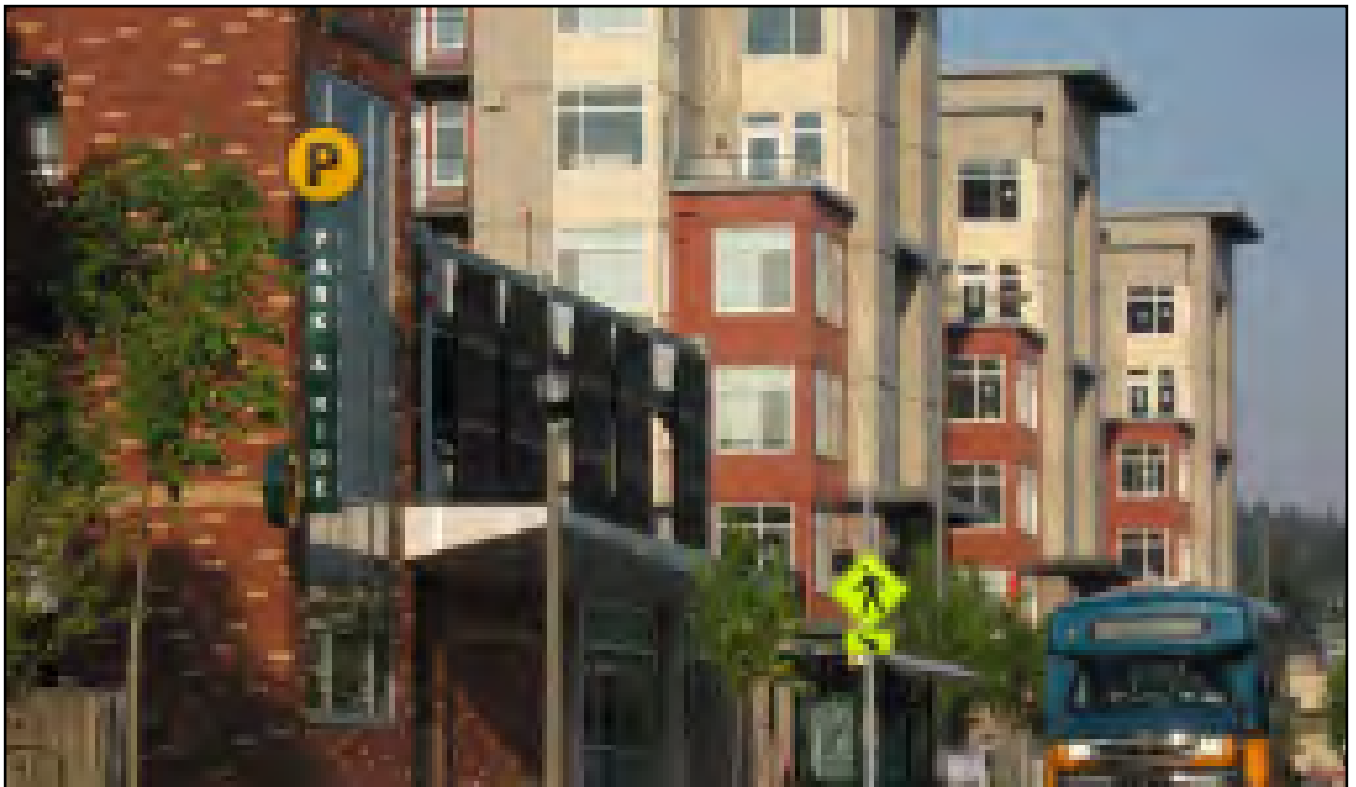
²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Transit-oriented development (TOD) is located exclusively along high frequency transit routes (i.e., bus rapid transit, express bus service, commuter rail, or light rail). Successful TOD developments seek to capture transit ridership through high density development located within ¼-mile of the transit station.

TOD is not prevalent in the region today; however, Triangle Transit and local governments are moving forward with several station area plans that advocate for transit-oriented development around future commuter rail or light rail stations in the region.



Metropolitan Center (MC)



A metropolitan center is the focal point of the region. It is the hub of employment, entertainment, civic, and cultural activities, with a mix of housing types and common open space for active living. As a magnet to surrounding towns and neighborhoods, the metropolitan

center becomes the iconic symbol of the region, starting with very tall buildings and a traditional grid street network. The compact, walkable environment and mix of residential and non-residential uses in a metropolitan center support multiple modes of transportation.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- condominium
- apartment
- townhome
- corporate headquarters
- sit down restaurant
- community-serving commercial
- professional office
- live/work/shop units
- museum
- library
- arena/conference center
- regional transportation hub
- government buildings

Secondary Land Uses

- church
- school
- public plaza
- pocket park
- parking deck

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mix of Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	90-100%
Residential Density	10-100 D.U.'s ² /Acre
Non-Residential Intensity	1.0-30.0 FAR ³
Prevailing Building Height	1-30 Stories
Average Dwelling Unit Size	800-2,000 SF ⁴
Average Non-Residential Building Size	10,000-200,000 SF ⁴
Transportation Choices	Auto, Walking, Bicycle, Transit (Bus)
Typical Block Length	300-600 LF ⁵
Setback or Build-To Line	Build to Line Requirement
Open Space Elements	Pocket Parks/Public Plazas/
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Formal On-Street Parking/ Shared Parking Agreements
Typical Street Cross Section	Urban
General Water Usage (per unit / SF)	180/0.039 GPD
General Sewer Usage (per unit / SF)	150/0.034 GPD

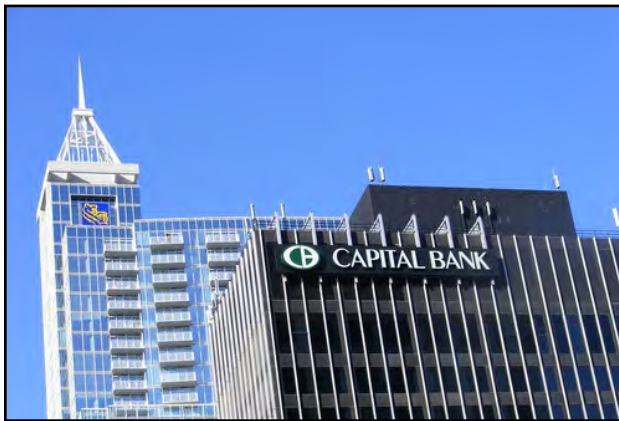
¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Metropolitan centers are located at strategic and historic locations with superior access to regional transportation facilities (i.e., highways, rail or airports). They are typically the employment center of a region. Downtown Durham and Downtown Raleigh are the only metropolitan centers identified for the Triangle Region.



Airport (AIR)



An airport supports commercial or general aviation air traffic into and out of the Triangle Region. Each may include one or more runways, a terminal, taxiways, jet fuel and storage facilities, or paved aircraft parking areas. Complimentary uses (e.g., rental car facilities, hotels, restaurants, long-term parking lots) may surround an airport. Restrictions on use, placement, and height for

some forms of development are followed in designated runway airspace protection areas.

Commercial or private aircraft in the Triangle Region are served by Raleigh-Durham International Airport, Triangle North Executive Airport, Horace Williams Airport, Raleigh East Airport, and Triple W Airport.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- airport activities (eg., commercial terminal, control tower, freight facilities, etc.)
- flight school
- warehouse
- aviation-related maintenance and repair
- shipping

Secondary Land Uses

- light industrial
- heavy industrial
- professional office
- hotel
- general commercial
- parking decks
- surface parking lots

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separate Uses
Site Efficiency Factor	70-80%
Typical Lot Coverage	10-15%
Residential Density	10-30 D.U's ² /Acre
Non-Residential Intensity	0.05-0.10 FAR ³
Prevailing Building Height	1-30 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	10,000-1,000,000 SF ⁴
Transportation Choices	Auto, Airplanes
Typical Block Length	300-600 LF ⁵
Setback or Build-To Line	Setback Requirements
Open Space Elements	Natural Areas
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot
Typical Street Cross Section	N/A
General Water Usage (per SF)	0.058 GPD
General Sewer Usage (per SF)	0.050 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet

⁵(L.F.) - Linear Feet



Commercial and general aviation airports are located with flight paths in mind as well as proximity to adjacent airspace. They are often located away from residential areas in locations with access to local highways and interstates.

There are five major airports within the Triangle Region: Raleigh-Durham International Airport, Triangle North Executive Airport, Horace Williams Airport, Raleigh East Airport, and Triple W Airport.



Civic & Institutional Facilities (CIV)



Civic and institutional facilities are focal points in the region. They typically include a building or complex of buildings that serve public purpose, including a library, school, public works complex,

or town government. Visual qualities of the building and its surrounding grounds often make civic and institutional facilities a landmark within the region.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- government buildings
- library
- school
- prison

Secondary Land Uses

- public works building
- church
- community center
- water or wastewater treatment plant

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern		Separate Uses
Site Efficiency Factor*		85-90%
Typical Lot Coverage*		30-50%
Residential Density		10-30 D.U.'s ² /Acre
Non-Residential Intensity		0.05-0.10 FAR ³
Prevailing Building Height		1-3 Stories
Average Dwelling Unit Size		N/A
Average Non-Residential Building Size		10,000-50,000 SF ⁴
Transportation Choices		Auto, Walking
Typical Block Length		N/A
Setback or Build-To Line		Setback Requirements
Open Space Elements		Natural Areas/Pocket Parks/ Landscaped Buffers
Street Pattern		Grid
Street Connectivity		Varies
Parking Provisions		Surface Lot
Typical Street Cross Section		N/A
General Water Usage (per SF)		0.058 GPD
General Sewer Usage (per SF)		0.050 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet



Civic and institutional buildings are located throughout the region; including government buildings, schools, and libraries.



Health Care Campus (HCC)



A health care campus includes various medical and medical-related uses, such as primary care, outpatient surgery, birthing centers, and other specialty services. They are relatively large in scale, and may include a hospital, teaching facilities, research and rehabilitation centers, and

private medical office buildings. Buildings are typically oriented in a campus-setting, with large buildings connected via walkways, structured parking, or an internal network of streets for circulation.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- primary care buildings
- emergency services
- research centers
- birthing center
- rehabilitation center

Secondary Land Uses

- teaching facilities
- private medical office buildings
- parking deck
- surface parking lot

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Mixed Uses
Site Efficiency Factor	80-90%
Typical Lot Coverage	40-60%
Residential Density	N/A
Non-Residential Intensity	0.25-2.00 FAR ²
Prevailing Building Height	1-8 Stories
Average Dwelling Unit Size	N/A
Average Non-Residential Building Size	10,000-1,000,000 SF ³
Transportation Choices	Auto
Typical Block Length	N/A
Setback or Build-To Line	Setback Requirements
Open Space Elements	Neighborhood Parks/ Pocket Parks/ Plazas/ Greenways/ Stream Corridors
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot/Parking Deck
Typical Street Cross Section	Suburban/Urban
General Water Usage (per SF)	0.058 GPD
General Sewer Usage (per SF)	0.050 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(FAR) - Floor Area Ratio ³(S.F.) - Square Feet



Major health care facilities are located throughout the Triangle Region; including those operated by the Franklin Regional Medical Center / Novant Health Care, Raleigh Community Hospital / Duke University Health System, Rex Hospital / UNC Health Care, and WakeMed Health and Hospitals.



University Campus (UC)



A university campus includes all of the academic buildings, residence halls, athletic facilities, equipment, or other ancillary needed to support an institution for higher education. Buildings are often oriented around a highly-walkable network of internal streets and pedestrian pathways, which support several modes of transportation for reaching the campus (i.e., bicycle, transit, or automobile). Structured parking or large

surface lots, dedicated areas for public gathering, and distinctive architecture also represent a typical university campus. Building uses and intensities on campus vary widely based on the school's mission and available space, topography, etc. Complementary uses near a university may include student housing, residential neighborhoods, downtown, or private research and development buildings.

Land Use Considerations

Primary and secondary land uses listed for the place type represent typical development in the category. They are not meant to be an exhaustive list of all permitted or conditional uses that would be allowed in the place type.

Primary Land Uses

- academic buildings
- athletic buildings
- resident halls
- recreation center
- open space / public plazas

Secondary Land Uses

- private research and development buildings
- supporting retail & restaurants supporting retail & restaurants
- residential neighborhood
- parking deck
- surface parking lot

Form & Pattern¹

The form and pattern table inventories generalized development characteristics associated with the place type. Working together, these elements reinforce a sense of place and community brand important to distinguishing development in this category from others in the region.

General Development Pattern	Separate Uses
Site Efficiency Factor*	75-85%
Typical Lot Coverage*	40-70%
Residential Density	25-100 D.U.'s ² /Acre
Non-Residential Intensity	0.50-3.00 FAR ³
Prevailing Building Height	1-15 Stories
Average Dwelling Unit Size	800-1,500 SF ⁴
Average Non-Residential Building Size	10,000-50,000 SF ⁴
Transportation Choices	Auto, Walking, Transit
Typical Block Length	N/A
Setback or Build-To Line	Setback Requirements
Open Space Elements	Natural Areas/ Plazas/Recreation Fields/ Greenways/ Stream Corridors
Street Pattern	Grid
Street Connectivity	High
Parking Provisions	Surface Lot
Typical Street Cross Section	N/A
General Water Usage (per unit/SF)	180/0.058 GPD
General Sewer Usage (per unit/SF)	150/0.050 GPD

¹ See section F of this document for more information on the variables included in the form and pattern table.

²(D.U.) - Dwelling Unit ³(FAR) - Floor Area Ratio ⁴(S.F.) - Square Feet



Nine major colleges or universities have a large campus in the Triangle Region; including Campbell University, Durham Technical Community College, Duke University, Meredith College, North Carolina Central University, North Carolina State University, Peace College, University of North Carolina at Chapel Hill, and Wake Technical Community College.



Appendix C: Meeting Summaries and Place-Type Maps from Local Jurisdiction Meetings

The following pages include the meeting notes from each meeting with local jurisdictions. Also included are maps of place-type inputs to be used in the 2040 No-Build scenario. These maps were developed from the discussion at the meetings and follow up with NCDOT and FHWA. For each jurisdiction where changes were made to the place types for the 2040 No-Build scenario, there are two maps.

- 2040 No-Build (All Parcels): The revised place type inputs for use in a 2040 No-Build scenario for all parcels in the area. Parcels with changes to the place types are shown with an outline.
- 2040 No-Build (Changes Only): This map shows the 2040 No-Build place-type inputs but only for the parcels where a change was made based the review and discussion at the meeting.

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: September 6, 2016
10:00 AM to 11:30 AM
Town of Angier Town Hall, Angier, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Sean Johnson, Planning and Permitting Technician, Town of Angier
Coley Price, Town Manager, Town of Angier
Lew Weatherspoon, Mayor, Town of Angier
Ken Gilland, HNTB
Scudder Wagg, Michael Baker Engineering
Jon Wergin, Michael Baker Engineering
Will Kerr, Michael Baker Engineering

Presentation Materials:

- Imagine 2040 Place Type Inputs for Town of Cary

Notes:

Scudder provided background on the Qualitative and Quantitative ICE process and scope of work for Complete 540. He discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). He discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

Angier's Land Use map reflects land use projections established in 2008. Town planners are currently working on a Land Use Plan Update and a Transportation Plan. They stated that congestion was a concern in Angier and areas within Northwest Harnett are working hard with CAMPO to look at a Regional Approach Transportation Mode. They pointed out that Angier is about 18 miles from Apex, 14 miles from Holly Springs and about 22 miles from downtown Raleigh. They hope to improve commutes to Raleigh and RTP. They anticipate future needs for potential grocery stores and other commercial facilities. While the provision of water and sewer will dictate Angier and Harnett development patterns, sewer lines are in place in Northwest Angier.

Angier is interested in creating an identity as an education-centered work force. A more urban town corridor is envisioned and will be master planned. Angier is partnering with Campbell University, and Central Carolina University to look at potentially enhancing educational opportunities in the area and trying to engage schools to attract hi-tech campuses. Angier is averaging about 60 residential building permits per year. Town Board is trying to encourage quality growth and manage the wave of growth coming from the north.

Western Harnett experienced substantial growth recently. Some conversion of agricultural land is possible. Currently, large farmers lease smaller parcels using short-term leases. However, much of the region is anticipated to remain in agricultural use. A sweet potato plant is planned near Pea Ridge Road.

Old Stage Road corridor could have more mixed use/commercial under the Complete 540 Build Scenario. East Wimberly will likely develop under Build perhaps with some mixed use and commercial.

Planned residential development straddles the Wake/Angier boundary. Approximately 468 homes are planned

at NC 55 near the border of Harnett County, 103 homes are planned at Atkins Road, and the Town has secured 120 acres of ETJ within Wake County's jurisdiction. Continued voluntary annexations are likely in Angier's ETJ as growth pushes down from the north.

In terms of transportation improvements, NC 55 upgrade to 4 lanes has been allocated and is anticipated to begin right of way acquisition in early 2020. The NC 55 corridor north of downtown could experience commercial development. NC 55 will be more commercial at nodes under Build. The US 401 Bypass project is currently being revived as CAMPO and Angier's transportation consultants look for potential transportation solutions.

The Town of Angier's economic development strategy will determine potential development north of E. Wimberly Street. This area will probably end up being 80 percent residential but town planners would prefer a mixture that includes a higher percentage of commercial/industrial.

Local planners and the Town Mayor feel that completing NC 540 will make a significant difference in development. Under the Complete 540 No Build, NC 55 may need widening to handle traffic to 540. There would be pressure to increase the number of lanes on US 401. Piney Grove Wilbon may be expanded and NC 210 and Old Stage Road may be multi-lane.

In terms of regional plans for development, Angier is looking at partnering with Harnett for schools and parks. Currently, there is one primary school, K3-2nd grade; one middle and one high school, three miles west of Angier with one elementary school, 3rd – 5th grade, located within the Town limits. All serve Angier.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed for the Town of Angier review, comment, and approval.
- The meeting summary and revised mapping will be forwarded to The Town of Angier meeting participants for review, comment, and approval.

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Town of Apex
MEETING MINUTES**

Date: August 30, 2016
9:30 AM to 11:00 AM
Apex Town Hall, 73 Hunter Street, Apex, NC 27502

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Dianne Khin, Planning Director, Town of Apex
Scudder Wagg, Michael Baker Engineering
Jon Wergin, Michael Baker Engineering
Emaly Simone, Michael Baker Engineering
Ken Gilland, HNTB

Notes:

After introductions, the Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is to use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained that the purpose of this meeting is to gather data on how land uses in the Town's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 Place Types provided by Apex and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of the Apex and its extraterritorial jurisdiction (ETJ) inside the Future Land Use Study Area (FLUSA). This map served as a starting point for discussion. Edits to the map were made based on input from Diane. Updated maps based on those edits maps are attached to these notes for review.

Diane noted that the NC Map Act of 1997 was repealed. Parcels within the planned right-of-way for Complete 540 are under development or have been recently approved for development. In Apex, these parcels will be developed into light industrial and low-density residential uses.

- Eastern ETJ – Sewer availability has been the limiting factor for development in this area; but a new pumping station is planned. Also, a new high school and a landfill are planned for this area. The infrastructure associated with the high school is likely to spur development in the area. Currently, a company is developing land between Sunset Lake Road and Jessie Drive into residential housing at 2-3 units per acre. Diane also noted that a new residential neighborhood

is under development on the eastern boundary of the ETJ. The sewer service for this development comes from the Town of Cary. Some parcels may be developed more densely as townhomes or apartments.

- Existing NC 540 Interchange with South Salem Street - The project team asked how the NC 540 interchange with South Salem Street (Old US Hwy 1) has impacted development in that area. Diane stated that there has been development interest in the area and that the area is covered by a Small Area Plan (<https://www.apexnc.org/218/I-540-S-Salem-St-Small-Area-Plan>). Mixed use development is planned for this area.
- Veridea, west of NC 55 – This area is largely slated for Transit-Oriented Development and mixed use. A single company is working to develop this area and has experienced some internal delays. It is likely that the eastern portion of this development will be Mixed Use Center instead of Transit-Oriented Development due to probable road improvements. Also, some of this area should be Light Industrial Center.

The mixed use development planned around the existing NC 540 was spurred by the existing portion of the roadway. Although Diane thought that development would have occurred sooner, it has yet to be realized. Sewer availability, complications associated with mixed use developments, and internal delays have been limiting factors.

Diane noted that the changes described above would occur regardless of whether Complete 540 is built. She noted that Apex residents already have access to the portion of NC 540 that has already been built. The Complete 540 project is not likely to have additional development impacts in this area.

Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment and approval.

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: August 26, 2016

1:00 PM to 2:30 PM

Cary Planning Department, Cary, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Will Hartye, Planner, Town of Cary

Kristin Maseman, HNTB

Scudder Wagg, Michael Baker Engineering

Jon Wergin, Michael Baker Engineering

Will Kerr, Michael Baker Engineering

Presentation Materials:

- Imagine 2040 Place Type Inputs for Town of Cary

Notes:

Scudder provided background on the Qualitative and Quantitative ICE process and scope of work for Complete 540. They discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

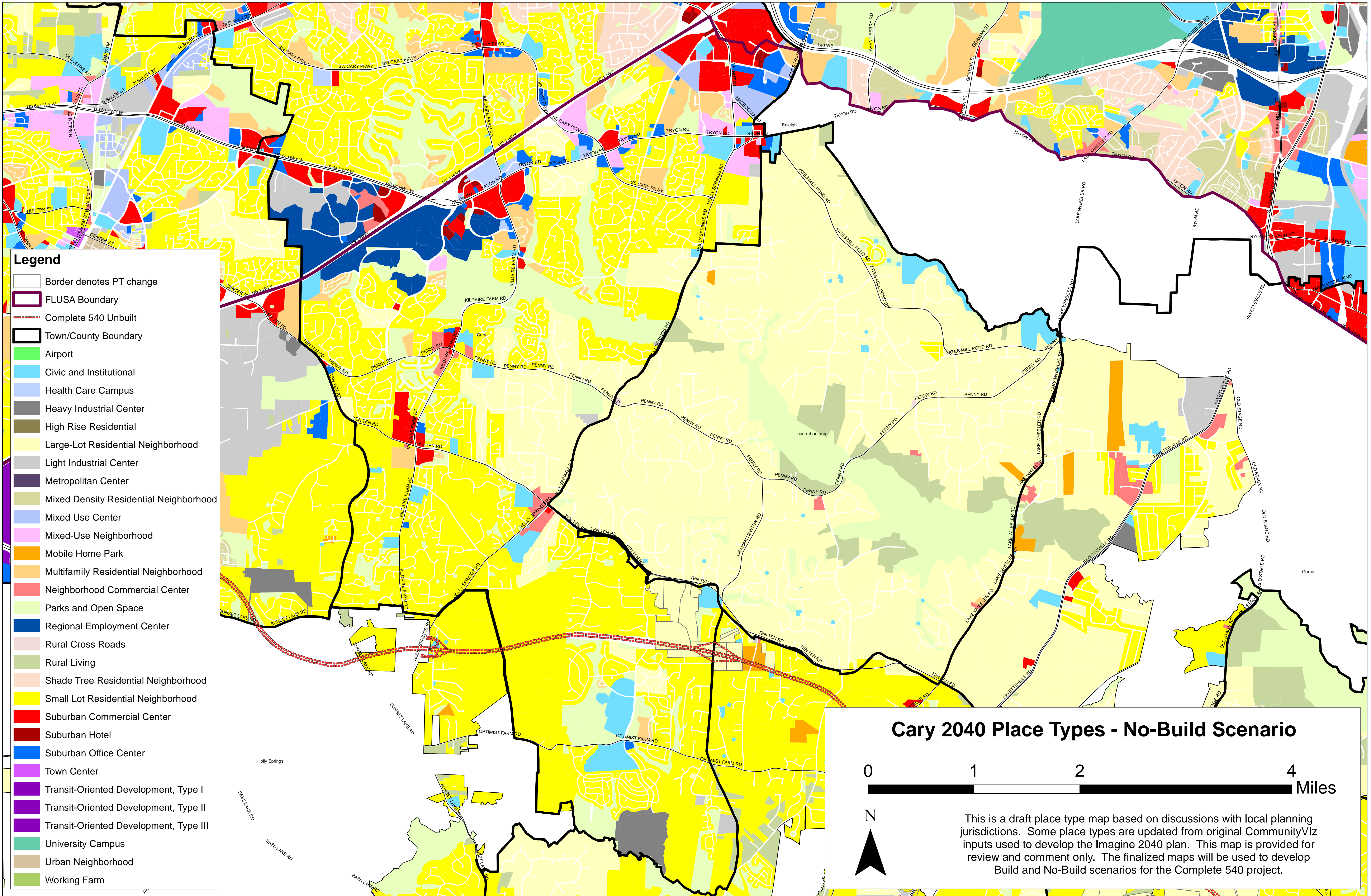
According to Will Hartye the Cary 1996 Land Use Plan shows low density development near I-540. There are no real changes from the 1996 Plan. The Team's map is generally accurate. The new Cary land use plan shows a large commercial area between Ten-Ten Road and I-540 as an employment center and this would only be likely if Complete 540 were built. Two mixed use centers have been built or started recently: Ten-Ten Road/ Kildaire Farm Road; and Ten-Ten Road/ Holly Springs Road.

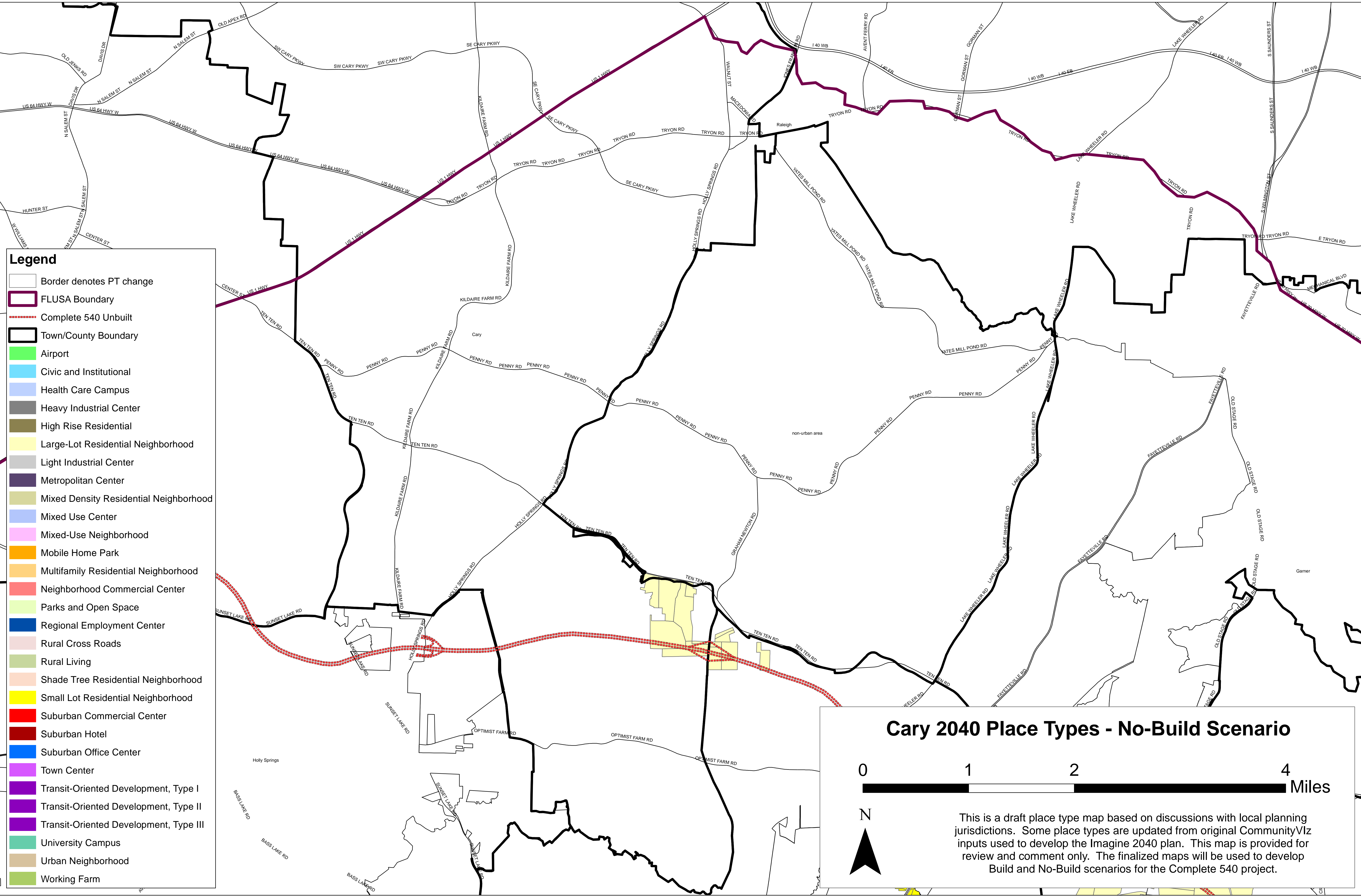
The I-540 Build alternative would accelerate development but not change density. Development restrictions cause constraints and there are no plans to extend water and sewer. A lot of area near the I-540 alignments is built out and State Environmental Development rules constrain development. Therefore, Cary probably will not be completely built out by 2040 under Build or No Build. No additional urban service areas are available through annexation. Watershed rules are another development constraint.

Character of development near I-540 west is different than I-540 south. Larger parcels of farmland are present and there is a closer proximity to RTP and commuter routes. Therefore development trends similar to those from Western Wake are not expected in the area of the new portion of the roadway.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed for the Town of Cary review, comment, and approval.
- The meeting summary and revised mapping will be forwarded to the Town of Cary meeting participants for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Town of Clayton
MEETING MINUTES**

Date: August 29, 2016
3:30 PM to 5:00 PM
Clayton Town Hall, 111 East Second Street, Clayton, NC 27528

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Jay McLeod, Planner, Town of Clayton
Scudder Wagg, Michael Baker Engineering
Jon Wergin, Michael Baker Engineering
Emaly Simone, Michael Baker Engineering
Ken Gilland, HNTB

Notes:

After introductions, the Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to the Jay McLeod that the purpose of this meeting is to gather data on how land uses in the Town's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team will use the information gathered during this meeting to make maps reflecting the Place Types for the existing conditions, 2040 No Build, and 2040 Build scenarios. These maps are attached to these notes for review.

The project team asked if Jay had worked on the Imagine 2040 Place Types. Jay said that he was not working at the Town of Clayton during the Imagine 2040 process; however, he had assigned Place Types for the Capital Area Metropolitan Planning Organization's (CAMPO's) Southeast Area Study (SEAS). Jay provided a geodatabase (.gdb) of these classifications to the project team. Jay felt that the Imagine 2040 Place Types are outdated and recommended that the project team should use the Place Types he provided instead. The provided mapping is consistent with the provided place types.

Jay described Clayton as a bedroom community primarily serving Wake County employers. The Town controls the areas within town limits and the ETJ. The County controls land outside of the ETJ. Development in Clayton is driven by low land prices and proximity to employers in the industrial area of the town. Past annual growth levels have been about 3 percent. East-west connectivity is limited in this area. The population of Flowers Plantation must take US 70 Business to get anywhere.

Some areas are important for biodiversity and/or are in a Johnston County Significant Natural Area (http://ncforestservice.gov/Urban/pdf/JCNRI_report_full.pdf and <http://digital.ncdcr.gov/cdm/ref/collection/p249901coll22/id/190405>). The 100-year floodplain a protected resource area. The Neuse Agricultural Rule applies in Clayton and may require 50-foot forested riparian buffers on streams.

Jay also noted that there is some inconsistency between current and future land use goals. For example, increased density is desired in the downtown area; but, it has yet to be realized.

The State Transportation Improvement Program (STIP) includes several projects in Clayton. The scoring for the Southern Connector around Clayton should improve in the next round. The US 70 Bypass is the future I-42. NC 42 is being widened from US 70 Business to NC 50.

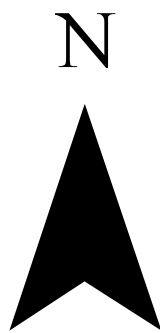
The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- Area of the Junction of US 70 Bypass and NC 42 – Development in this area would occur with or without NC 540. NC 540 would not impact the level of growth in this area. Clayton's Future Land Use map shows a health care campus in this area. This would be a good place for a White Oak type of development.
- Area of the Complete 540 Interchange with Rock Quarry Road – This interchange may increase traffic on Old US Hwy 70 (Garner Road). If Complete 540 is built, more residential development at a higher density may occur in this area.
- Area along the ETJ's western border – Several large, undeveloped parcels in this area are owned by an HVAC company. Their plans for the land are unclear. A large-scale development along Winston Road is in the works. The development of Complete 540 could put more pressure on this area around NC State University property. Commercial facilities and apartments may develop. The result may be higher density residential development in the north and commercial development along US 70 Business.
- Area along Ranch Road – Development pressure and interest are present at the Ranch Road interchanges with US 70 Bypass and US 70 Business.

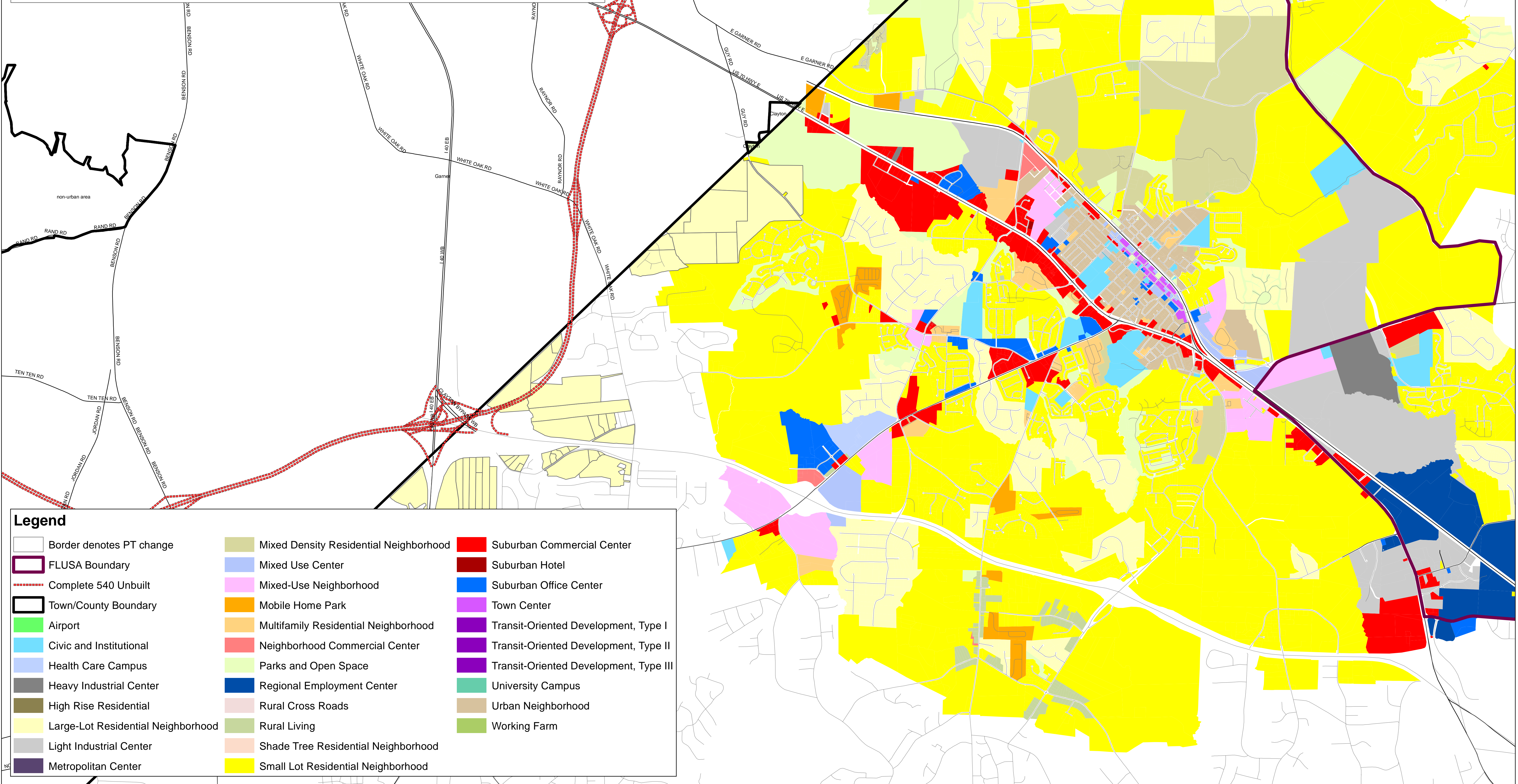
Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment and approval.

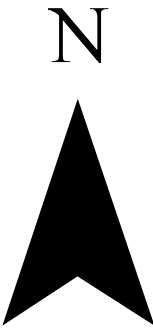
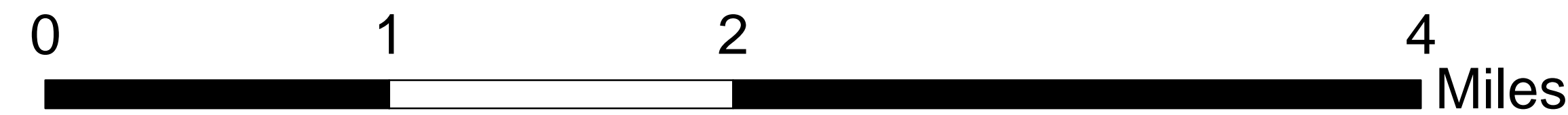
Clayton 2040 Place Types - No-Build Scenario



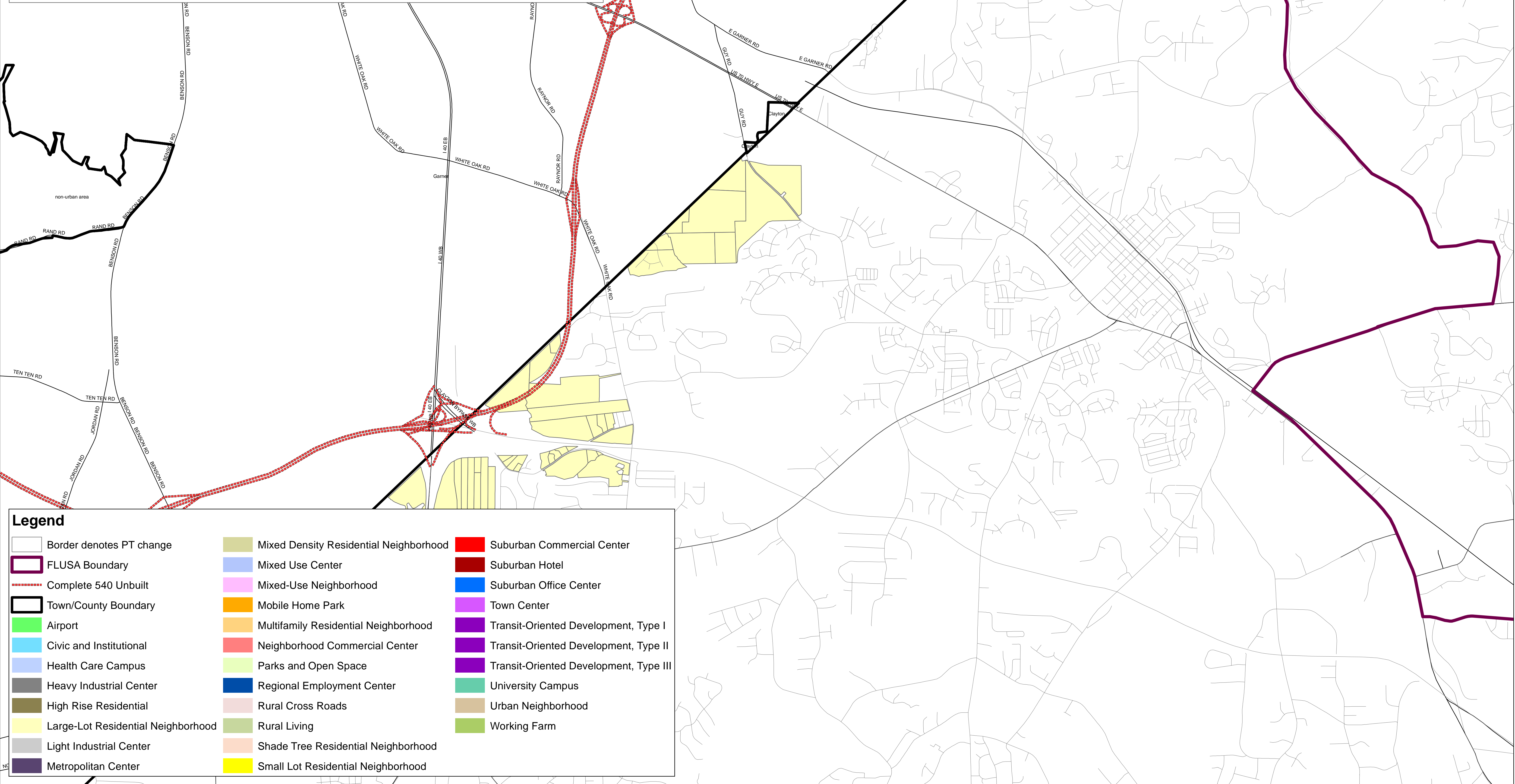
This is a draft place type map based on discussions with local planning jurisdictions. Some place types are updated from original CommunityViz inputs used to develop the Imagine 2040 plan. This map is provided for review and comment only. The finalized maps will be used to develop Build and No-Build scenarios for the Complete 540 project.



Clayton 2040 Place Types - No-Build Scenario



This is a draft place type map based on discussions with local planning jurisdictions. Some place types are updated from original CommunityViz inputs used to develop the Imagine 2040 plan. This map is provided for review and comment only. The finalized maps will be used to develop Build and No-Build scenarios for the Complete 540 project.



Legend

- | | | |
|------------------------------------|--|--|
| Border denotes PT change | Mixed Density Residential Neighborhood | Suburban Commercial Center |
| FLUSA Boundary | Mixed Use Center | Suburban Hotel |
| Complete 540 Unbuilt | Mixed-Use Neighborhood | Suburban Office Center |
| Town/County Boundary | Mobile Home Park | Town Center |
| Airport | Multifamily Residential Neighborhood | Transit-Oriented Development, Type I |
| Civic and Institutional | Neighborhood Commercial Center | Transit-Oriented Development, Type II |
| Health Care Campus | Parks and Open Space | Transit-Oriented Development, Type III |
| Heavy Industrial Center | Regional Employment Center | University Campus |
| High Rise Residential | Rural Cross Roads | Urban Neighborhood |
| Large-Lot Residential Neighborhood | Rural Living | Working Farm |
| Light Industrial Center | Shade Tree Residential Neighborhood | |
| Metropolitan Center | Small Lot Residential Neighborhood | |

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: August 26, 2016

10:00 AM to 11:30 AM

Fuquay-Varina Planning Department, Fuquay-Varina, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Danny Johnson, Assistant Planning Director, Town of Fuquay-Varina

Samantha Smith, Long Range Planner, Town of Fuquay-Varina

Mike Sorensen, Planning Director, Town of Fuquay-Varina

Scudder Wagg, Michael Baker Engineering

Jon Wergin, Michael Baker Engineering

Will Kerr, Michael Baker Engineering

Ken Gilland, HNTB

Kristin Maseman, HW Lochner

Presentation Materials:

- Imagine 2040 Place Type Inputs for Fuquay-Varina County

Notes:

Scudder and Ken provided background on the Qualitative and Quantitative ICE process and scope of work for the Complete 540 Project. Scudder and Ken discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area of the town within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

The group reviewed the 2040 Place Types and the Town representatives said the Land Use Plan from Imagine 2040 reflected thoughts on land use from 5 years ago based on utility plans, growth, infrastructure and 20year extensions of water and sewer. The current land use plan from 2006 most accurately reflects land use without I-540. There was a discussion among Fuquay-Varina planners on development patterns and density in the Imagine 2040 process. Overall, staff felt that the place type inputs for Imagine 2040 were closer to a No Build scenario.

Fuquay-Varina is currently going through development scenario planning through March 2017 for a future Comprehensive Plan. North of NC 42, area planners currently project growth in the area will differ from the current 2040 place types shown. They base this assumption on the recent growth patterns of Cary and Apex. They anticipate increased growth, especially in the Holly Springs Road and Banks Road areas.

In Fuquay-Varina without the I-540 project and with the extension of water and sewer along US 401 and NC 55 growth patterns would not be different, but the density of development may change. Fuquay-Varina is growing quickly and there is a lot of annexation along US 401 which currently has water and

sewer lines. Annexation is also anticipated south of Ten-Ten Road on US 401. Town representatives said the Swift Creek watershed, a high quality watershed, has development constraints.

Town planners said higher density would occur under the Build scenario but it is hard to predict. Future development will probably be suburban commercial and mixed-use. In particular suburban commercial would likely occur between Hilltop Road and NC 42, and at the corner of SR 1301 (Sunset Lake Road)/ Hilltop Needmore Road. Town planners believe there are 4 anticipated nodes of development:

- Vicinity of I-540/ US 401
- Vicinity of Banks Road to Hilltop Road/Hilltop-Needmore Road
- Hilltop Road/ US 401 (SE corner)
- Dwight-Rawlins Road to NC 42

In addition Town planners described the following locations of anticipated development:

- At I-540/ US 401 the pace of commercial development would be accelerated with the Complete 540 Build Alternative. I-540 will not change development patterns on US 401 based on projections.
- Bells Lake Road/ Hilltop Road would see additional commercial development with I-540. Probably in the form of neighborhood centers.
- Sunset Lake Road traffic volumes would be higher under a No build. Volumes could go higher at the intersection of Sunset Lake Road/ Holly Springs Road causing increased development.
- Under a No Build traffic patterns west and south won't change.
- Sunset Lake Road is an attractive location for commercial developers.
- Old Stage Road may become more attractive under the Build alternative.
- Development density in Wake County north of Hilltop-Needmore Road and south of Ten-Ten Road will increase under both Build and No Build scenarios.
- Mixed use development could occur northwest of US 401/Banks Road intersection.

Following the discussion of the character of development in various locations the group discussed planned or ongoing roadway projects. Extension of Judd Parkway is planned and the design is to be completed in 4-6 weeks. Right of way is scheduled for October 1st. There is bond money available for this project if needed but the use of Federal Funds is mandated. Hilltop-Needmore Road is being realigned to Holly Springs Road. This will reinforce commercial development at southeast corner of intersection. This would be a Locally Administered project or Division-managed project. NC 55 Bypass traffic will increase under either the Complete 540 Build or No Build alternatives.

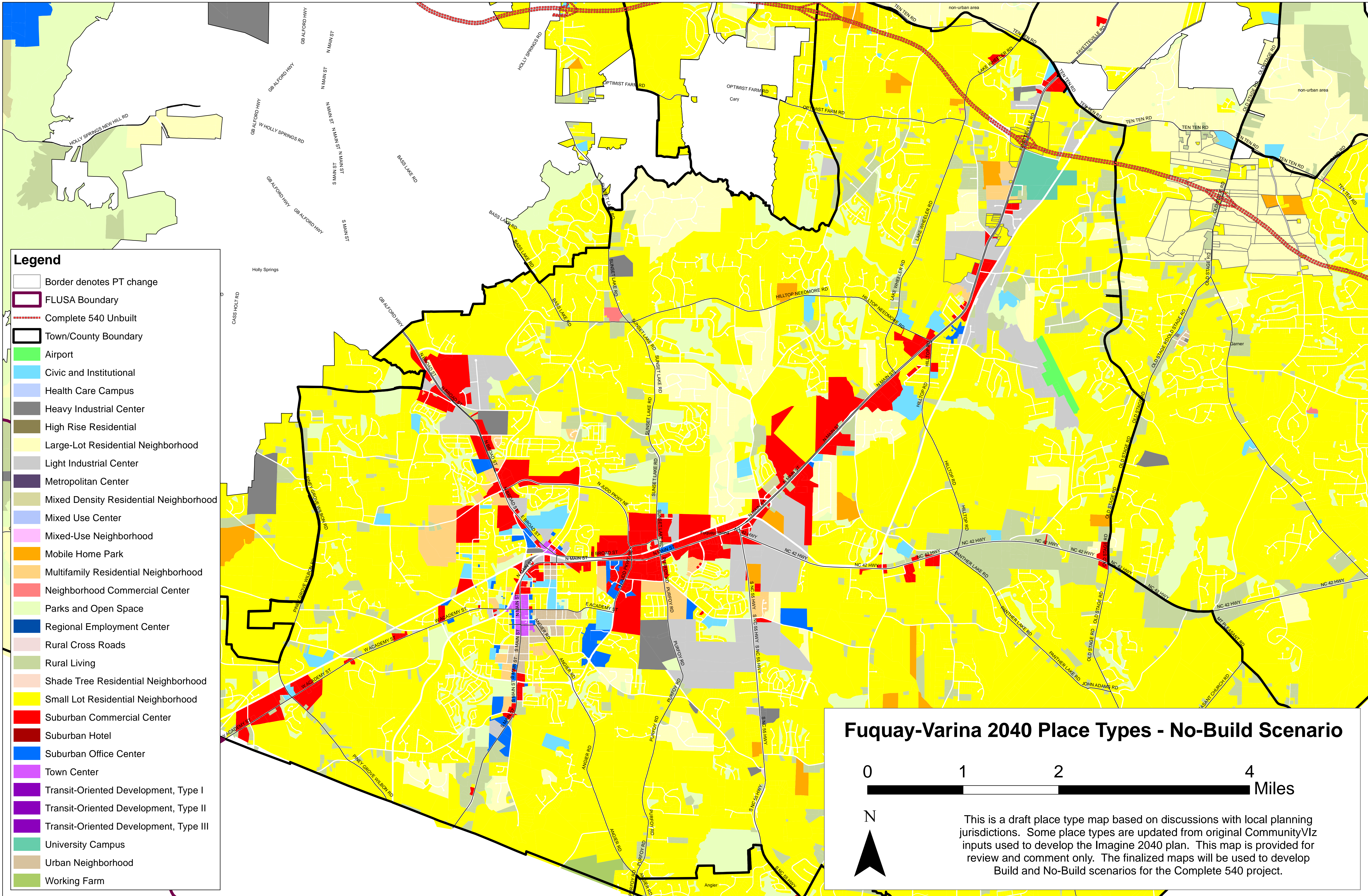
The group discussed the effect of utilities on County development. Utilities will be extended on US 401 crossing roads based demand and market forces. Utilities probably won't extend further north unless residential development occurs. A water line is present on Sunset Lake Road to Sunset Glenn Road and sewer is available on Sunset Lake Road to first subdivision.

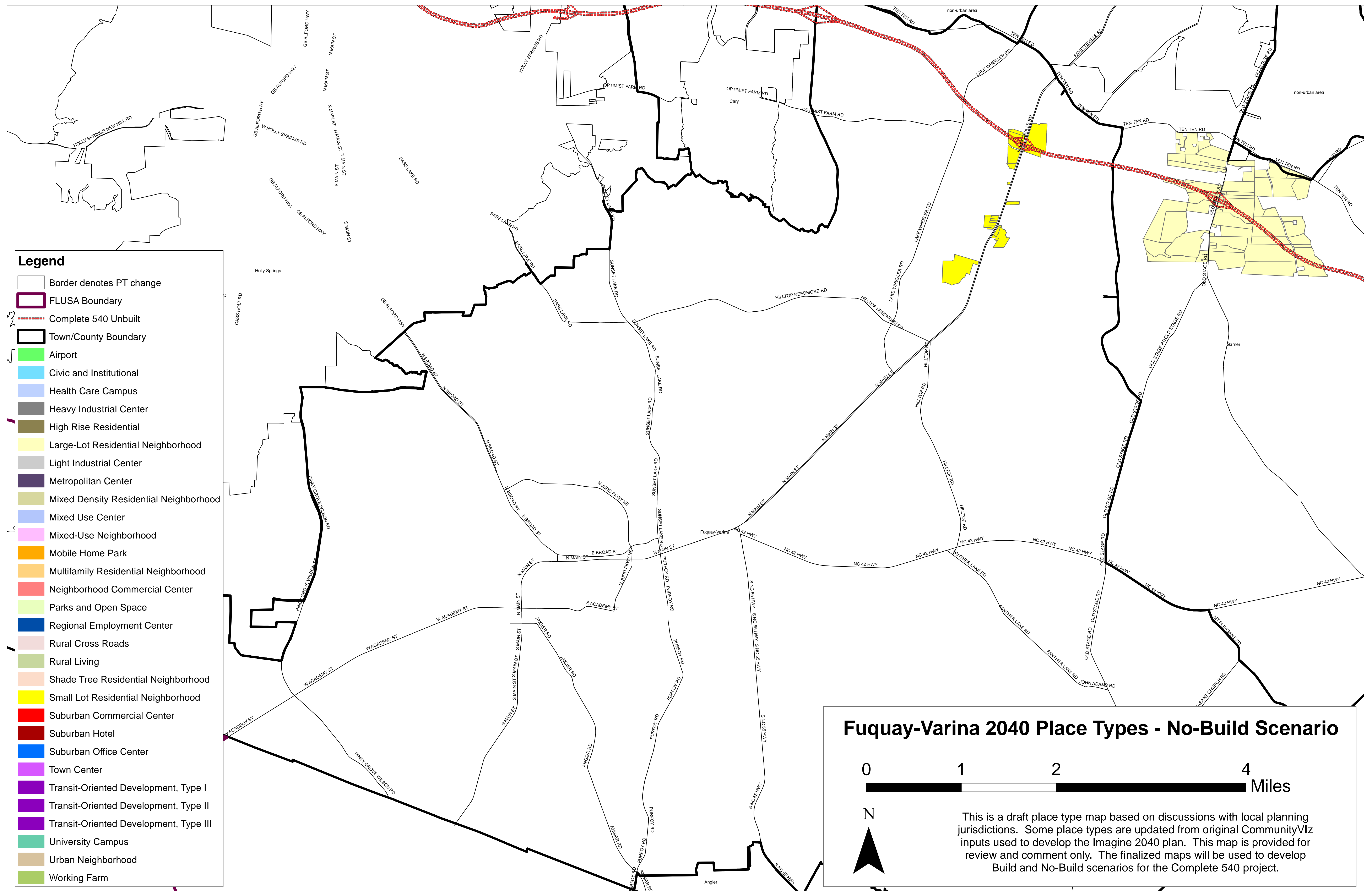
During a discussion of development patterns County representatives pointed out that there could be multi-family development at the US 401/ Ten-Ten Road intersection under the No Build but at a slower pace. There would not be a big difference in land use on the west side of town under a Build vs. No Build alternative. The Build alternative would however accelerate growth but not change development patterns or intensity.

Staff felt that the control total inputs for Imagine 2040 are underestimated. They believe that 100% buildout is anticipated in 2040 under Build or No Build scenarios. New development ordinances being developed by the County will emphasize higher densities. Development will follow infrastructure. There is a lot of development interest in the southern part of the County.

Next Steps:

- A meeting summary will be drafted.
- Mapping developed by the Project team will be revised.
- The meeting summary and revised mapping will be forwarded to Town staff for review and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Town of Garner
MEETING MINUTES**

Date: August 30, 2016
9:30 AM to 11:00 AM
Temporary Garner Town Hall, 914 Seventh Avenue, Garner, NC 27529

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Brad Bass, Planning Director, Town of Garner
Jeff Triezenberg, Assistant Planning Director, Town of Garner
Dave Bamford, Senior Planner, Town of Garner
Tim Gardiner, Wake County
Scudder Wagg, Michael Baker Engineering
Jon Wergin, Michael Baker Engineering
Emaly Simone, Michael Baker Engineering
Ken Gilland, HNTB
Kristin Maseman, Lochner

Notes:

After introductions, Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is to use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to representatives from the Town of Garner that the purpose of this meeting is to gather data on how land uses in the Town's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 land use Place Types provided by Garner and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of the Garner and its extraterritorial jurisdiction (ETJ) inside the Future Land Use Study Area (FLUSA). This map served as a starting point for discussion. Place Type changes were recommended by Garner planners. The updated maps are attached to these notes for review.

Representatives from the Town of Garner noted that the Imagine 2040 Place Types were assigned assuming that Complete 540 would be built; however, an update is needed to reflect current conditions. Town of Garner planners are working to update Place Types for Connect 2045. An update to the Garner Transportation Plan is also underway.

The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- Area near the Complete 540 Interchange with US 401 – This area falls under multiple jurisdictions. Garner is considering extending its ETJ in this area. Traffic and the level of service (LOS) at the intersection of US 401 and Ten-Ten Road is a limiting factor at this intersection. The Small-Lot Residential Neighborhood (SLRN) parcel near US 401 and Ten-Ten Road should be changed to Mixed-Density Residential Neighborhood (MDRN). Some residential growth may result in the US 401/Swift Creek area under the Build Scenario; however, the amount of development is limited by the *Swift Creek Land Management Plan* (<http://www.wakegov.com/planning/growth/pages/swiftcreeklmp.aspx>). The highest residential density in this area is anticipated near Ten-Ten Road.
- Area near the Complete 540 Interchange with Old Stage Road – Old Stage Road serves as a commuter route. Sewer availability is limited in this area and more difficult to provide logistically. A pump station would be required. Under a Build Scenario, a Suburban Commercial Center may develop. Without Complete 540 (No Build), the development would be smaller, and a Neighborhood Commercial Center is anticipated to develop. The development would most likely be south of Ten-Ten Road.
- Area near the Complete 540 Interchange with Benson Road – Benson Road is congested, and not much land is available for development. The large parcel near Benson Road and Ten-Ten Road is likely to develop. In a Build Scenario, this would be a Suburban Commercial Center. Under a No Build Scenario, a Neighborhood Commercial Center is anticipated. Utilities are available north of Ten-Ten Road. The land south of Ten-Ten Road is in a different drainage basin and sewer pump stations would be required to service development. Residential development is also likely south of the interchange along Cleveland School Road. Apartments or mixed-density development is possible due to emerging development pressure from the I-40/NC 42 (Cleveland) area. Planners anticipate that development along Cleveland School Road would be bigger and denser under a Build Scenario than under a No Build Scenario.
- Area near the Complete 540 Interchange with I-40 – Development pressures may increase the density of residential development in this area.
- Area near the Complete 540 Interchange with White Oak Road – An additional interchange at I-40 and White Oak Road is under consideration; however, this area falls under the rural designation for interchange spacing. This area will be mostly residential with some Parks and Open Space. Traffic congestion is an issue on White Oak Road as it is used as a commuter route.
- Area near the Complete 540 Interchange with US 70 Business – This area and the area to the east toward Johnston County will be subject to planning activity in the Fall of 2016. The area along US 70 Business from I-40 to Clayton should be office space, mixed use, and industrial.
- Area near the Complete 540 Interchange with Rock Quarry Road – This area has the potential to become a commercial center for southeast Raleigh. Under the Build Scenario, the area could become a Suburban Commercial Center. Under the No Build Scenario, development would likely be smaller and less dense. A Neighborhood Commercial Center is more likely. In addition, residential growth is anticipated near the high school.
- Area near the Complete 540 Interchange with Auburn-Knightdale Road – No changes anticipated. The City of Raleigh may have input on this area. This interchange will create additional access points for Garner.

- Area near the I-40 Interchange with Jones Sausage Road – Garner now owns the former Con-Agra property, now called the Garner Technical Center. They anticipate redevelopment of this facility.

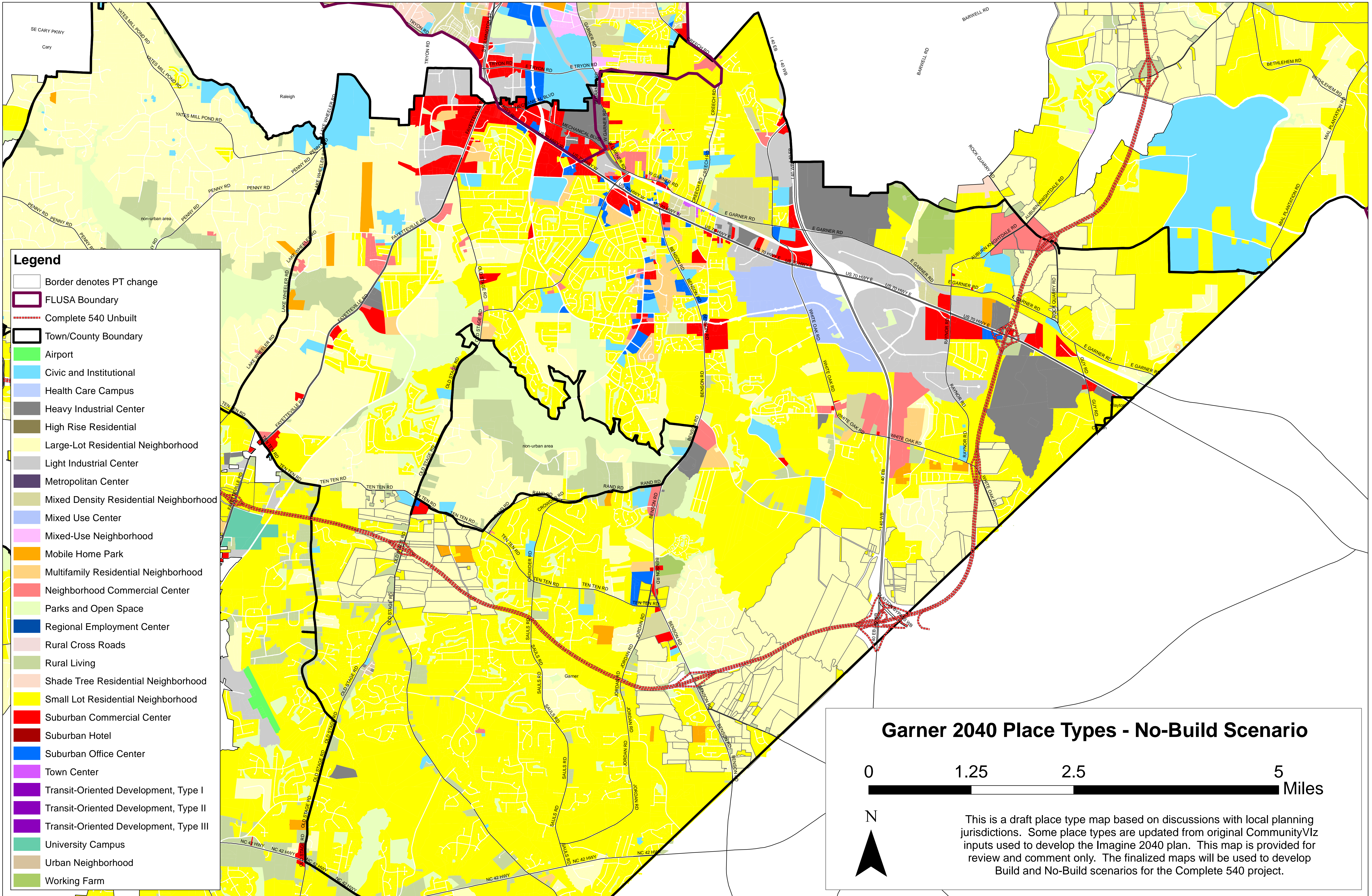
Garner has lower single residence statistics than other parts of the county.

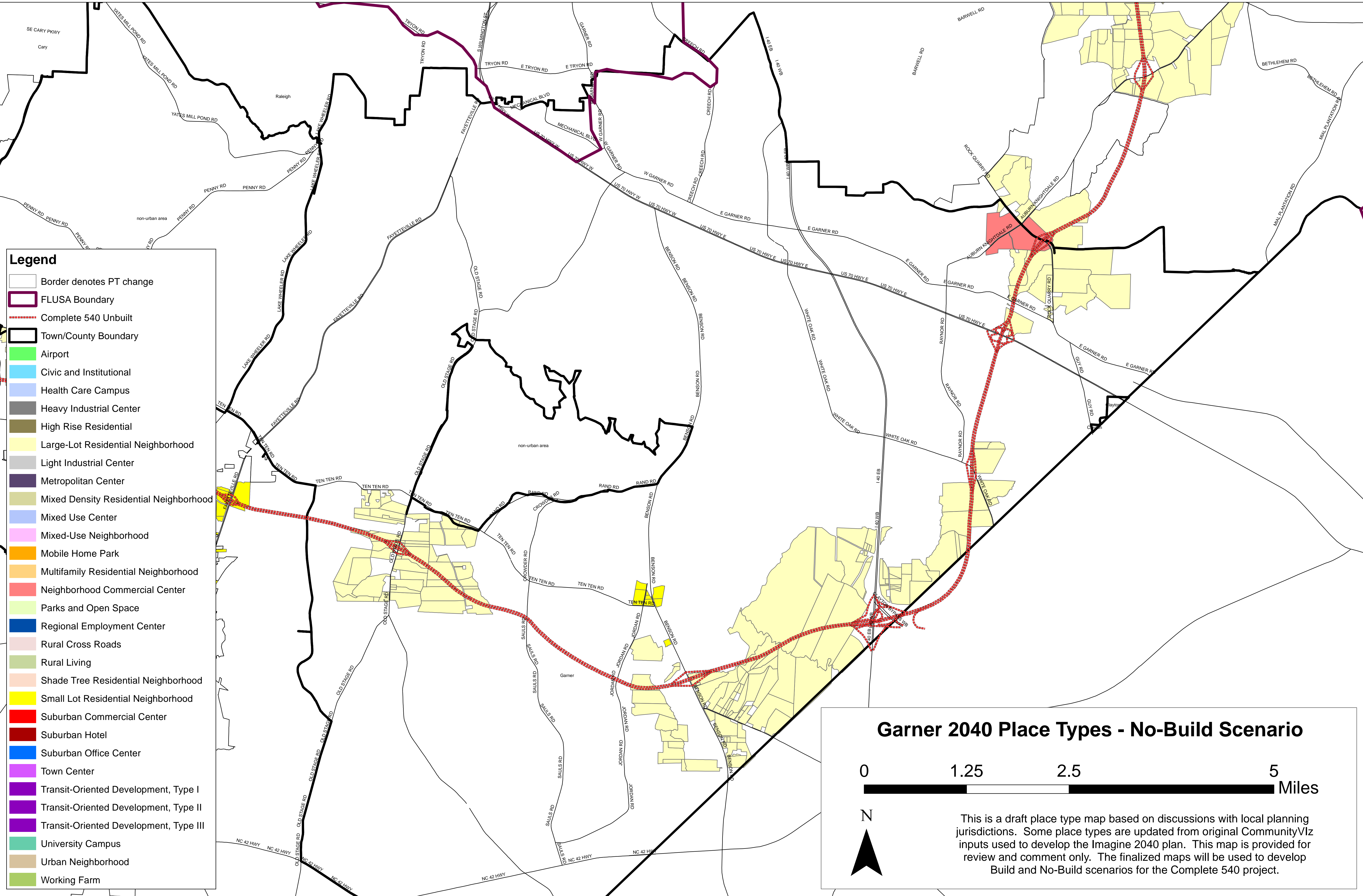
Some development proposals have been submitted for development within the Complete 540 right-of-way. Garner is still considering how this corridor would be classified if the road were not built.

Overall, the Complete 540 project is anticipated to have a positive impact on growth in Garner; however utilities (primarily sewer) are still a limiting factor for development rates and density. This increased development pressure raises logistics questions about how to extend sewer to meet the demand. Without the project, this issue would potentially be less pressing.

Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: August 25, 2016

10:30 AM to 12:00 PM

Michael Baker Engineering, Cary Office

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Jay Sikes, Harnett County, Manager of Planning Services

Mark Locklear, Harnett County, Director of Development Services

Scudder Wagg, Michael Baker Eng.

Jon Wergin, Michael Baker Eng.

Will Kerr, Michael Baker Eng.

Emaly Simone, Michael Baker Eng.

Ken Gilland, HNTB

Presentation Materials:

- Imagine 2040 Place Type Inputs for Harnett County

Notes:

Scudder and Ken provided background on the Qualitative and Quantitative ICE process and scope of work for Complete 540. They discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

The group reviewed the 2010 Place Types particularly for underdeveloped parcels where the current place type input may not match current land use. Based on comments from Harnett County Baker staff reviewed undeveloped parcel designations relative to aerial imagery and updated the place type mapping accordingly.

Harnett Comprehensive Plan was completed in September 2015. Harnett County staff indicated that the areas near Complete 540 are expected to see a lot of growth, both with and without the highway. Recent development in the Harnett County portion of the FLUSA has been heavy with substantial development over the last 4 years.

Harnett County officials noted some changes in land use since the Imagine 2040 place types were developed. They noted that some land use changes could be found in the Harnett County NW Small Area Plan; they also noted that a CTP update is in progress. Improvements to Pine Grove Road will be included in the CTP update.

The group discussed the character of development in various locations. Harnett County officials stated that the area near Pine-Grove Rawls Road had experienced development since the 2040 inputs were developed. They also suggested changes to existing place type designations on mapping near the intersection of Atkins Road/Angier Road. They state that the intersection of the Angier Road-Atkins Road/ Purfoy Road area is a hot development area. Development will be primarily 1/4-acre residential

lots from this location east toward Angier. This development is anticipated to occur with or without the Complete 540 project.

Harnett planners noted there is development pressure east of US 401. They agreed with the current mapping for this area. The presence of water and sewer lines is a key factor in Harnett County development patterns. Water and sewer lines are present along US 401. West of US 401, planned development will consist of large lots because no sewer is available. Large lots are considered half-acre; 30,000 square feet to 40,000 square feet lots comprise the largest county zoning designation. Existing water and sewer along US 401 can support commercial and industrial uses.

Harnett County is pursuing improvements to US 401. A US 401 improvement project was in the planning process at one time but acceptable alternatives could not be identified. West of US 401 the high quality watershed and lack of sewer service constrains development in the area. It is anticipated that NC 55 will eventually connect to US 401, although funding for that project is not currently available.

Within the Harnett County portion of the FLUSA, the Cape Fear Watershed is listed as a Water Supply Watershed (WS-IV) water, and development restrictions are in place. Because Fuquay-Varina is growing, Harnett County anticipates future development near the Wake County/Harnett County border, especially in the eastern portion of the county outside the Cape Fear watershed. Development is expected to consist of residential development followed by some commercial development.

The group discussed whether the pace of commercial and industrial development would be accelerated compared to the 2040 estimate under a Build alternative. Area planners noted that, as an example, following construction of NC 87, substantial development followed 6-8 years later. Planners felt that the pace of development associated with Complete 540 could be quicker than the pace of development following the NC 87 project. NC 87 was completed in 2003-2004. Growth activities spurred by the Base Realignment and Closure (BRAC) process caused substantial growth in the Ft. Bragg area after the widening of NC 87 to 4 lanes in 2008. Development quickly followed construction of NC 87 aided by BRAC action at Fort Bragg. Residential development occurred first followed by retail.

The group discussed the pattern, density, type and pace of future study area development. In terms of current 2040 place types, Harnett County believes there probably is a need for more commercial and industrial development to support anticipated growth. Both commercial and industrial development may occur under a No Build scenario, with growth happening sooner if Complete 540 is built. US 401 is anticipated to develop commercial nodes with or without Complete 540. However, Industrial development in the County is rare.

The group next discussed the character of growth in various areas of Harnett County portion of the FLUSA. Planners anticipate some development pressure for residential uses followed by commercial development would occur under the Build Alternative. The areas most likely to see increased development pressure are: NC 55, Eastern Parkway, and near Buckhorn-Duncan Road. Mixed density development could occur in all three areas. A Food Lion shopping center is possible just northwest of the FLUSA boundary. If the facility were constructed, it may increase development pressure within the FLUSA.

East of Piney Grove, development could be denser than small lots with higher likelihood closer to Angier. There is a commercial node at the US 401/Chalybeate Springs Road. This development would

likely happen without the construction of Complete 540. Congestion on roads to Fuquay-Varina may result in pressure for growth on US 401. Parcels near the Angier Bypass will probably be small lot residential, not mixed use. Mixed use development could occur closer to Angier.

According to the area planners, CAMPO anticipates a need for future widening of NC 55, but the project is not currently funded. Planners feel that NC 55 would score better under NCDOT's prioritization formula if Complete 540 were constructed. The project would widen NC 55 to four lanes using complete street designs. County officials would prefer construction of the proposed Angier Bypass but that does not appear possible at this time. Current plans include widening of Kennebec Church Road, which may become part of 55 widening. The Build scenario may increase scoring and the probability of Kennebec Church widening by 2040. Harnett County believes it is needed now but will be more likely with Complete 540. If widening occurs, residential development density will be higher and mixed density would be more likely. However, development along US 401 is more likely than NC 55.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed for Harnett County review.
- The meeting summary and revised mapping will be forwarded to Harnett County meeting participants for review, comment, and approval.

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Town of Holly Springs
MEETING MINUTES**

Date: August 30, 2016
3:30 PM to 5:00 PM
Holly Springs Town Hall, 128 S Main Street, Holly Springs, NC 27540

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Gina Clapp, Town of Holly Springs
Justin Steinmann, Town of Holly Springs
Kendra Parrish, Town of Holly Springs
Scudder Wagg, Michael Baker Engineering
Jon Wergin, Michael Baker Engineering
Emaly Simone, Michael Baker Engineering

Notes:

After introductions, Scudder provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is to use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to the Town of Holly Springs representatives that the purpose of this meeting is to gather data on how land uses in the Town's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 land use Place Types provided by Holly Springs and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of Holly Springs and its extraterritorial jurisdiction (ETJ) inside the Future Land Use Study Area (FLUSA). This map served as a starting point for discussion Place Type changes were recommended by Town planners. The marked-up maps are attached to these notes for review.

The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- Area near the Complete 540 Interchange with Holly Springs Road – Area planners indicated that the area currently outside the ETJ to the west of the interchange would likely be high density residential development under the Build Scenario and small-lot residential under the No Build Scenario. The two Mixed Use Centers on Sunset Lake Road would be more likely to develop to this level of density under the Build Scenario. Other parcels along this road to the west are

expected to be residential and small commercial regardless of the status of Complete 540. The Suburban Commercial Center at the junction of Holly Springs Road and Kildaire Farm Road would likely be a Neighborhood Commercial Center under the No Build Scenario. Its current designation is correct for the Build Scenario. The Suburban Commercial Center at the junction of Holly Springs Road and Sunset Lake Road would likely become a Neighborhood Commercial Center under the No Build Scenario. Its current designation is correct for the Build Scenario. All other parcels on Holly Springs Road between Complete 540 interchange and just south of Sunset Lake Road should be designated as mixed use under the Build Scenario. Under the No Build Scenario, the development in this area would be less intense. The large mobile home park northeast of the planned interchange will be hard to redevelop as the mobile homes are located on individually owned lots. Under a Build Scenario, connectivity to this park is likely to be impacted, and some of the parcels near its entrance may redevelop. The area southeast of the interchange will be predominantly residential. Holly Springs has a Northeast Gateway Plan (<http://www.hollyspringsnc.us/DocumentCenter/Home/View/491>) that covers this area.

- Old Holly Springs Apex Road/Tingen Road – The parcel near the intersection of Old Holly Springs Road/Tingen Road and Woods Creek Road should be mixed-density residential development.
- Bass Lake Road – Residential development will occur outside the ETJ on this road. This development will occur regardless of the status of Complete 540.
- Area Near the Complete 540 Interchange with NC 55 – This area is currently served by the existing NC 540. The Complete 540 project is not expected to impact land use in this area.
- Northwest Holly Springs – Some growth is expected in this area; however, this growth will not be significant compared to growth in the rest of Holly Springs.

The Town of Holly Springs Representatives stated that existing NC 540 has boosted the desirability of Holly Springs for growth. The Council is generally visualizing growth as R-10 with higher density residential growth in nodes, especially at Holly Springs Road. Growth limiting factors for Holly Springs are land cost, environmental buffers, small parcel size, and transportation congestion.

Holly Springs extended its ETJ in 2015.

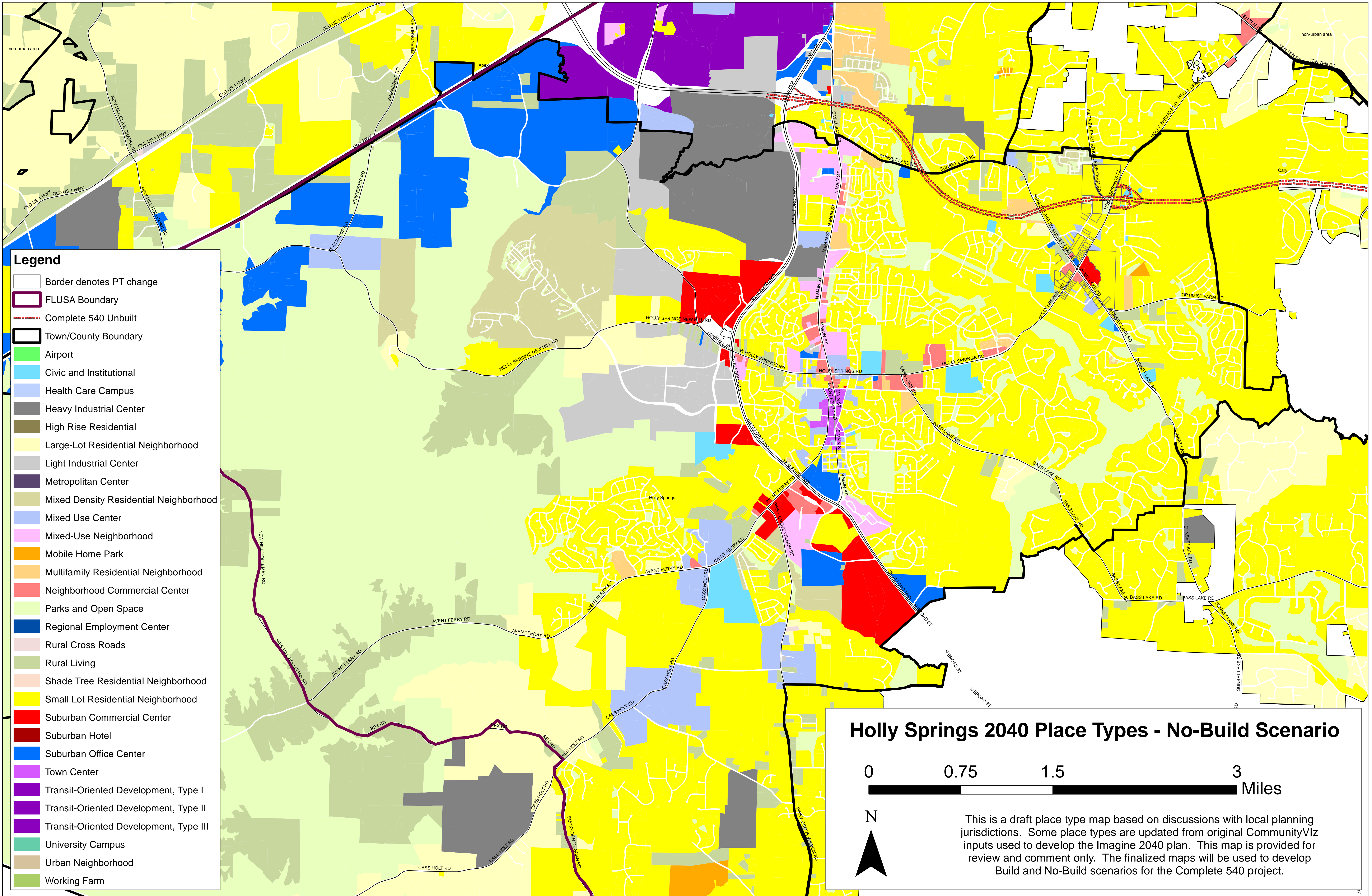
The Complete 540 project is expected to impact some of the existing subdivisions along Holly Springs Road. The road may impact community wells or connectivity.

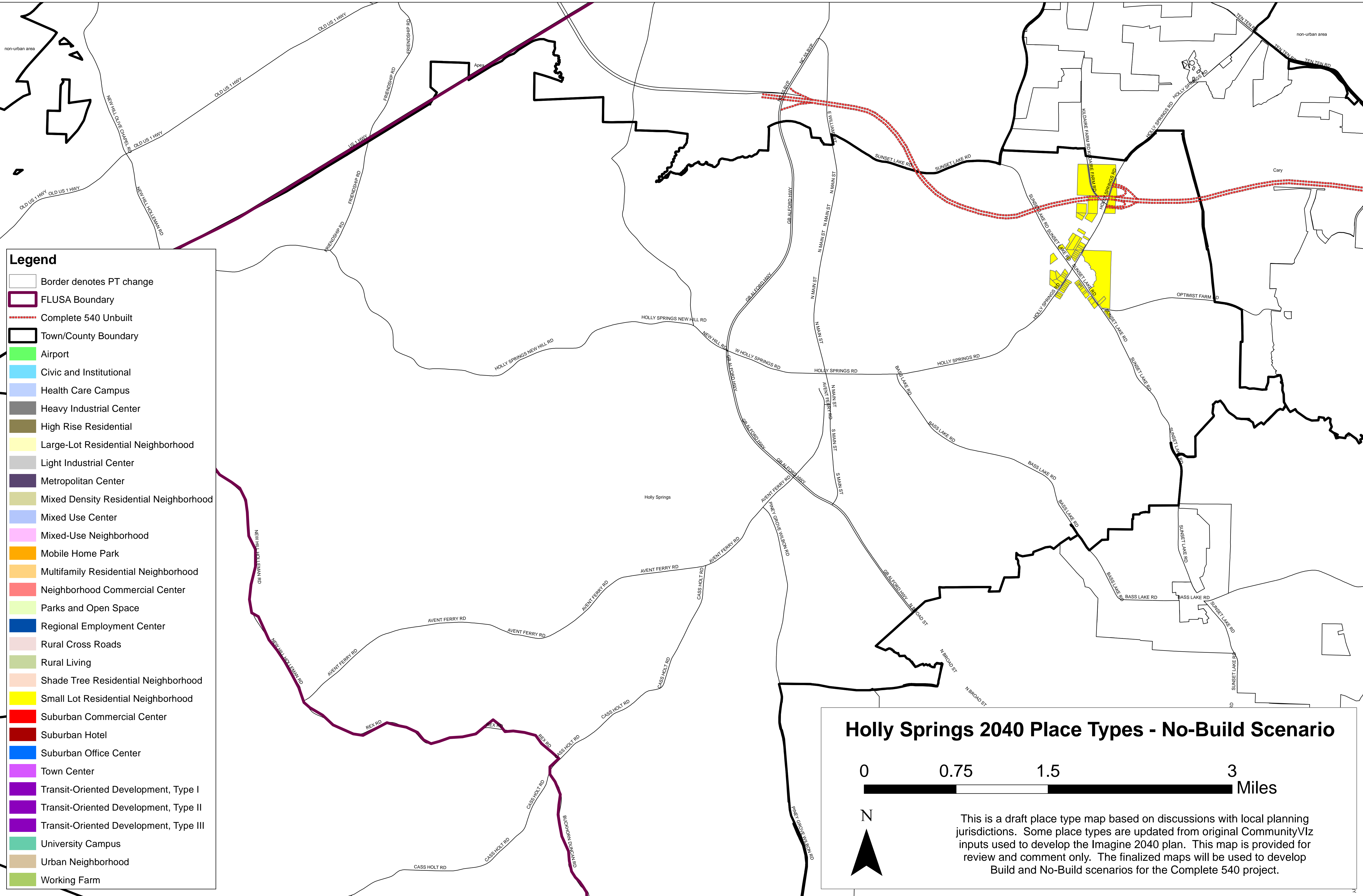
If Complete 540 is not built, the development intensity is not expected to shift to other areas. Instead it is likely to be less intense.

Holly Springs provides water and sewer service inside of town limits. The Town has the capacity to serve its ETJ and its utility service area (USA). They are working to expand service.

Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Johnston County
MEETING MINUTES**

Date: September 1, 2016
1:00 PM to 2:30 PM
Land Use Center, 309 E. Market Street, Smithfield, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Berry Gray, Planning Director, Johnston County
Matt Kirkland, Planner, Johnston County
Scudder Wagg, Michael Baker Engineering (via teleconference)
Jon Wergin, Michael Baker Engineering (via teleconference)
Emaly Simone, Michael Baker Engineering
Ken Gilland, HNTB

Notes:

After introductions, Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is to use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to the Johnston County representatives that the purpose of this meeting is to gather data on how land uses in the County's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 land use Place Types provided by Johnston County and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of Johnston County inside the Future Land Use Study Area (FLUSA). The map was edited with Place Type changes recommended by Johnston County to reflect Complete 540 Build and No Build scenarios. The marked-up are attached to these notes for review.

Neither Berry nor Matt were involved in the Imagine 2040 effort. The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- Area around the I-40 Interchange with NC 42 – These uses largely reflect what is there now. Floodplains and sewer availability restrict development in this area. Another interchange is planned to the south at the intersection of I-40 and Cleveland Road. All of the undeveloped

parcels along Cleveland Road between I-40 and NC 42 should be commercial. Most of the growth in this area is along Cleveland Road.

- Area around the I-40 Interchange with NC 210 – These uses largely reflect what is there now.
- Area near the Intersection of NC 42 and NC 50 – This area has sewer service. A Sheetz and a grocery store are already present. The current map expresses the most likely No Build Scenario. Commercial developers have expressed interest to the north. The area is much less likely to experience commercial development under the No Build Scenario.
- Area near the Complete 540 Interchange with NC 50 - Traffic from Smithfield generally travel along Cleveland Road then turn right onto I-40. From the Pleasant Grove area, commuters take NC 50 to Old Drug Store Road to NC 42 to I-40. Planners are hoping that the Complete 540 project will funnel the Pleasant Grove traffic and some of the Smithfield traffic to the Complete 540 interchange with NC 50. This would increase development potential in the area for the Build Scenario.
- Area near the Complete 540 Interchange with I-40 – Floodplains restrict development in this area. Access issues to the southeast of the interchange also reduce development. The Suburban Commercial Center to the northeast should be a Mixed-Use Center.
- Area near the Complete 540 Interchange with White Oak Road – The area around Cornwallis Road is an environmentally sensitive district.
- Southeast Johnston County – No changes anticipated.
- Wilson's Mill Area – This is a high growth area with a new high school.

Sewer availability limits commercial development in portions of Johnston County. Clayton has its own sewer system. Currently, County sewer lines do not extend north of the US 70 Bypass, but an extension is under consideration. The availability of sewer and water from the County also lessens the incentive for growing areas to incorporate or be annexed. For example, the Cleveland area near to the I-40 interchange with NC 42 is populous, but not likely to incorporate.

Transit options in Johnston County area limited. Wilson's Mills and Clayton would benefit from commuter rail; however, residents in the rest of the county are too spread out for rail to be effective. There is some limited bus service. Clayton and the Cleveland area may get Go Triangle bus service.

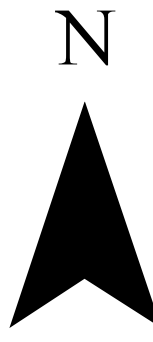
The North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) includes widening NC 42 to a 4-lane facility from Clayton to NC 50.

In western Johnston County, development north of Middle Creek (Cleveland area) is going stronger than pre-recession levels. South of Middle Creek (McGees Crossroads), development is still relatively slow. Complete 540 will ease traffic bottlenecks between McGees Crossroads and I-40, which may spur development south of Middle Creek. This development would most likely be small-lot residential. Most of the development south of Middle Creek occurred in the 2000s, and 25 percent or more of Johnston County's development potential is in this area.

Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review and comment.

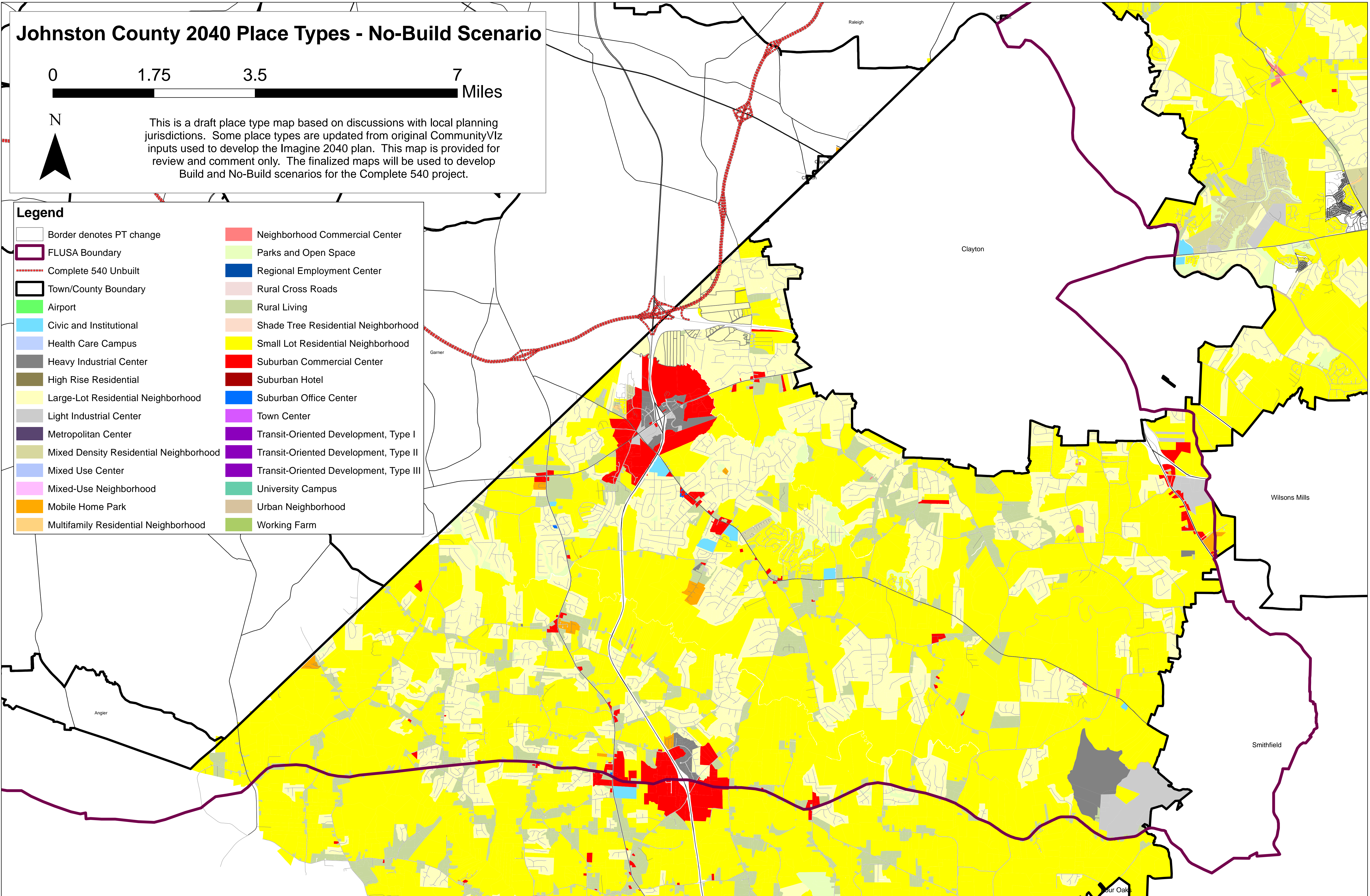
Johnston County 2040 Place Types - No-Build Scenario



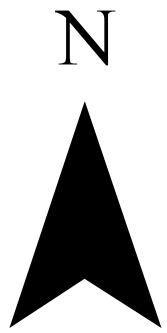
This is a draft place type map based on discussions with local planning jurisdictions. Some place types are updated from original CommunityViz inputs used to develop the Imagine 2040 plan. This map is provided for review and comment only. The finalized maps will be used to develop Build and No-Build scenarios for the Complete 540 project.

Legend

- | | |
|--|--|
| Border denotes PT change | Neighborhood Commercial Center |
| FLUSA Boundary | Parks and Open Space |
| Complete 540 Unbuilt | Regional Employment Center |
| Town/County Boundary | Rural Cross Roads |
| Airport | Rural Living |
| Civic and Institutional | Shade Tree Residential Neighborhood |
| Health Care Campus | Small Lot Residential Neighborhood |
| Heavy Industrial Center | Suburban Commercial Center |
| High Rise Residential | Suburban Hotel |
| Large-Lot Residential Neighborhood | Suburban Office Center |
| Light Industrial Center | Town Center |
| Metropolitan Center | Transit-Oriented Development, Type I |
| Mixed Density Residential Neighborhood | Transit-Oriented Development, Type II |
| Mixed Use Center | Transit-Oriented Development, Type III |
| Mixed-Use Neighborhood | University Campus |
| Mobile Home Park | Urban Neighborhood |
| Multifamily Residential Neighborhood | Working Farm |



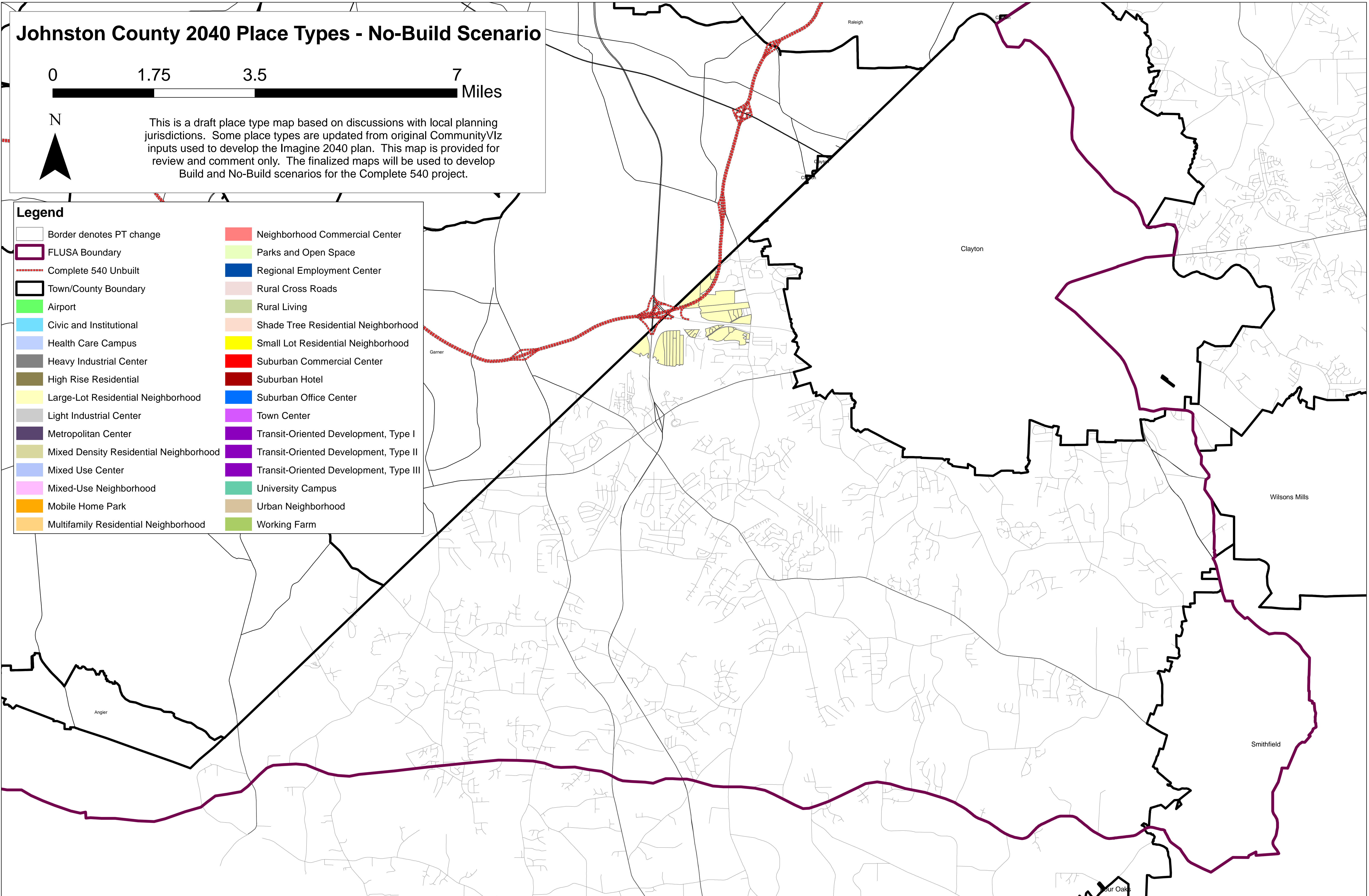
Johnston County 2040 Place Types - No-Build Scenario



This is a draft place type map based on discussions with local planning jurisdictions. Some place types are updated from original CommunityViz inputs used to develop the Imagine 2040 plan. This map is provided for review and comment only. The finalized maps will be used to develop Build and No-Build scenarios for the Complete 540 project.

Legend

- | | |
|--|--|
| Border denotes PT change | Neighborhood Commercial Center |
| FLUSA Boundary | Parks and Open Space |
| Complete 540 Unbuilt | Regional Employment Center |
| Town/County Boundary | Rural Cross Roads |
| Airport | Rural Living |
| Civic and Institutional | Shade Tree Residential Neighborhood |
| Health Care Campus | Small Lot Residential Neighborhood |
| Heavy Industrial Center | Suburban Commercial Center |
| High Rise Residential | Suburban Hotel |
| Large-Lot Residential Neighborhood | Suburban Office Center |
| Light Industrial Center | Town Center |
| Metropolitan Center | Transit-Oriented Development, Type I |
| Mixed Density Residential Neighborhood | Transit-Oriented Development, Type II |
| Mixed Use Center | Transit-Oriented Development, Type III |
| Mixed-Use Neighborhood | University Campus |
| Mobile Home Park | Urban Neighborhood |
| Multifamily Residential Neighborhood | Working Farm |



**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: September 6, 2016

1:00 PM to 2:30 PM

Knightdale Planning Department, Knightdale, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Jason Brown, Town of Knightdale, Senior Planner

Ken Gilland, HNTB

Scudder Wagg, Michael Baker Eng.

Jon Wergin, Michael Baker Eng.

Will Kerr, Michael Baker Eng.

Presentation Materials:

- Imagine 2040 Place Type Inputs for Town of Knightdale

Notes:

Scudder and Ken provided background on the Qualitative and Quantitative ICE process and scope of work for Complete 540. They discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

Jason said that within the town land use is proactively zoned land use is very similar to the zoning map. Interchanges with zoning designations are included on the Town zoning map. Rural residential is being preserved through zoning.

The group next discussed anticipated development in specific locations. Under the No Build alternative industrial development is expected on Hodge Road. Small lot residential development will also occur of west of Hodge Road, 1,000 residential units are planned. Mixed density is anticipated east of Hodge Road.

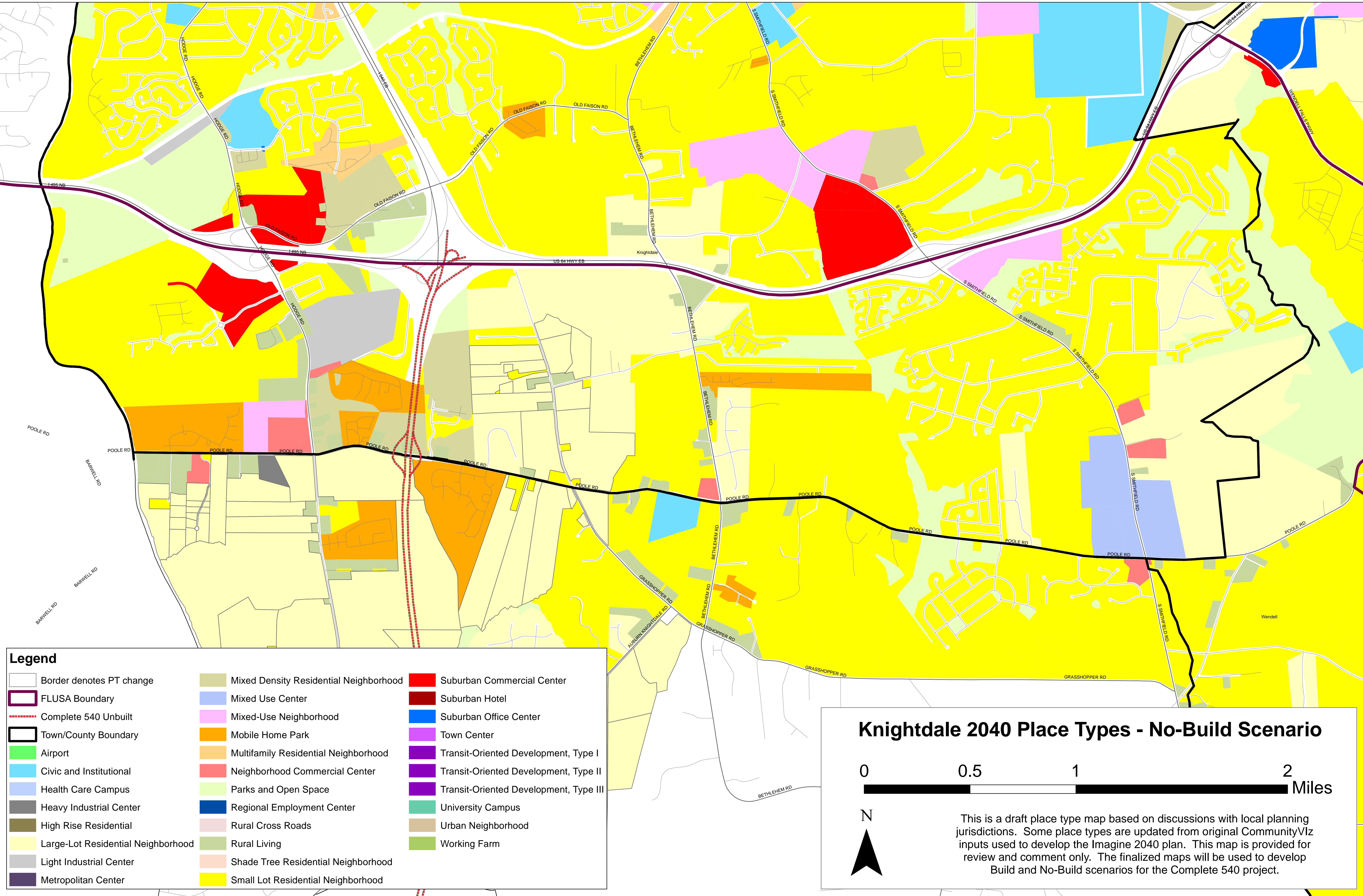
Jason talked about the importance of utility connections to potential development. There is a pump station planned on Hodge Road which will encourage development in the area. There is no sewer between I-540 and Smithfield Road. This reduces the likelihood of development under the Build and No Build scenarios in this area. Water service is available on Poole Road and may encourage annexation. This not likely without sewer service. Poole Road would be attractive for development if sewer service was installed. Sewer service along Poole Road is a CIP decision. Near Bethlehem Road, the installation of sewer could also encourage development.

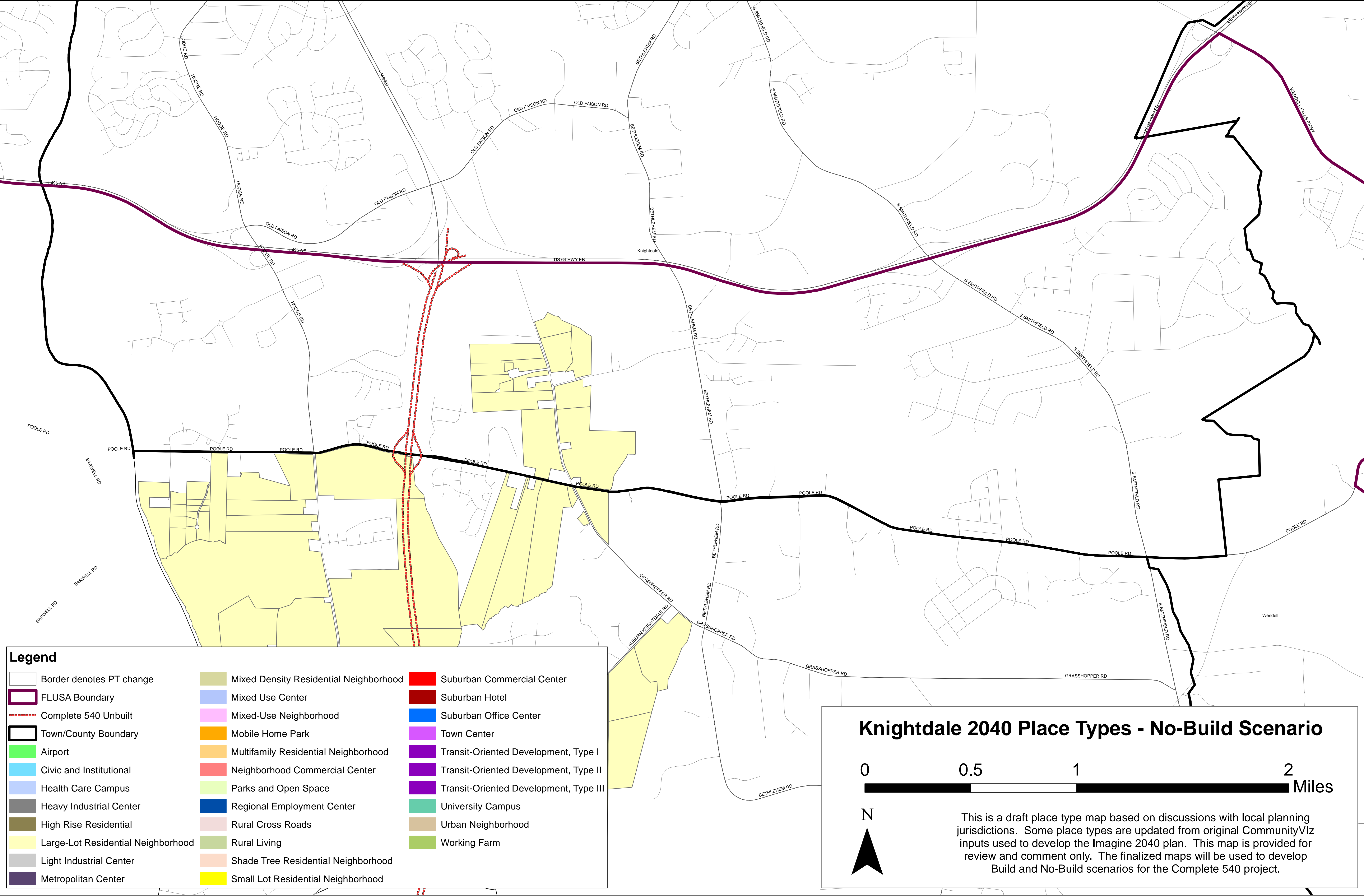
Jason identified a number of additional development areas in Knightdale. He said that in general the Build scenario would accelerate mixed use development east and west of the I-540 alignment. There is a primary activity center near Poole Road/ I-540 interchange. Mixed use development would occur under the No Build and commercial development is more likely under the Build. Eventually, Clifton Road

could become a rural living area under the No Build. The Town was likely to develop park land and open space along the Neuse River trail area under the Build and No Build.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed for the Town of Knightdale review.
- The meeting summary and revised mapping will be forwarded to the Town of Knightdale meeting participants for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: September 7, 2016

2:00 PM to 3:00 PM

City of Raleigh Planning Department, Raleigh, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Bynum Walter, City of Raleigh, Senior Planner

John Anagnost, City of Raleigh, Planner I

Kyle Little, City of Raleigh, Planner I

Ray Aull, City of Raleigh, Planner II, GIS

Ken Bowers, City of Raleigh, City Planning Director

Ken Gilland, HNTB

Scudder Wagg, Michael Baker Engineering

Jon Wergin, Michael Baker Engineering

Emaly Simone, Michael Baker Engineering

Presentation Materials:

- Imagine 2040 Place Type Inputs for City of Raleigh

Notes:

Scudder and Ken provided background on the Qualitative and Quantitative ICE process and scope of work for Complete 540. They discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

The group first discussed the western portion of the jurisdiction within the FLUSA, in the Tryon Road area. Most of this area is coded as Civic and Institutional, is owned by the state, and is unlikely to change due to the regulatory limitations associated with the Swift Creek watershed. If this area was somehow developed, infrastructure improvements would be required. Ken Bowers later joined the discussion and agreed with that assessment.

The group then turned its attention to the other half of the jurisdiction. Bynum mentioned that the area east of the proposed 540 would be more greatly affected by the road than the west. Not much planning has been done in the urban service area. Commercial development would make sense in the area of Poole Road, especially at Hodge Road. Raleigh planners anticipated that mixed use neighborhood and multifamily residential neighborhood parcels would be likely near this intersection with or without Complete 540. This reflects the City's interchange policy—to allow growth along interchanges at the nearest major intersection.

The City explained that the area around Auburn-Knightdale Road is more rural and much of the land is publically-owned. They would like to keep most growth inside the Complete 540 corridor. They noted an existing landfill off Old Baucom Road. A couple of Suburban Commercial Centers would be likely in a

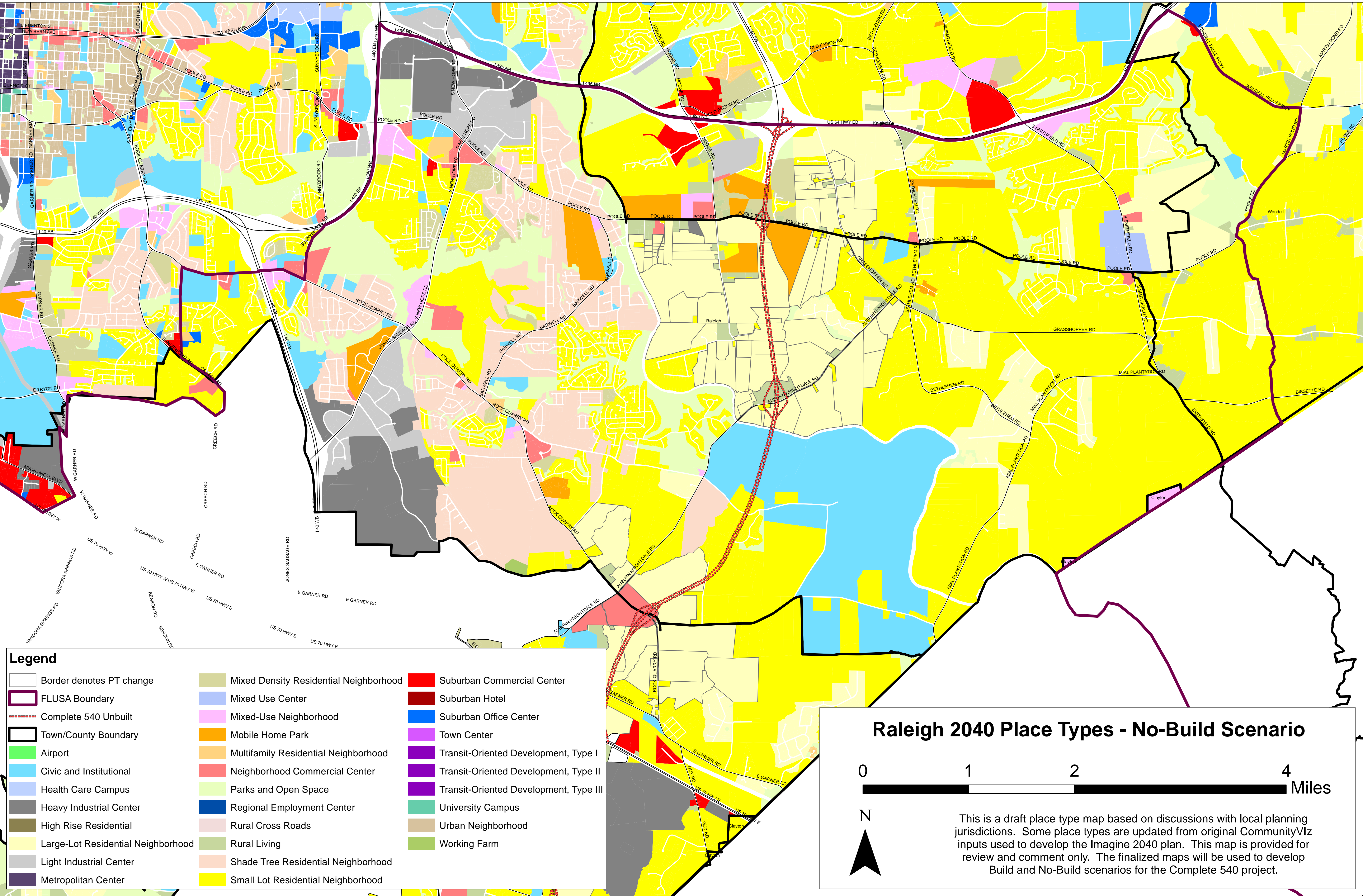
Build scenario on Auburn-Knightdale Road at Battle Bridge Road and Rock Quarry Road. City staff pointed out a few proposed roads in the area: one connecting Hodge to Auburn-Knightdale, one north of Rock Quarry connecting New Hope and Barwell, and another between Poole and Hodge. The timing of these roads is uncertain but they would improve connectivity in the area and possibly encourage a node of commercial activity. The proposed facilities are not currently fiscally constrained.

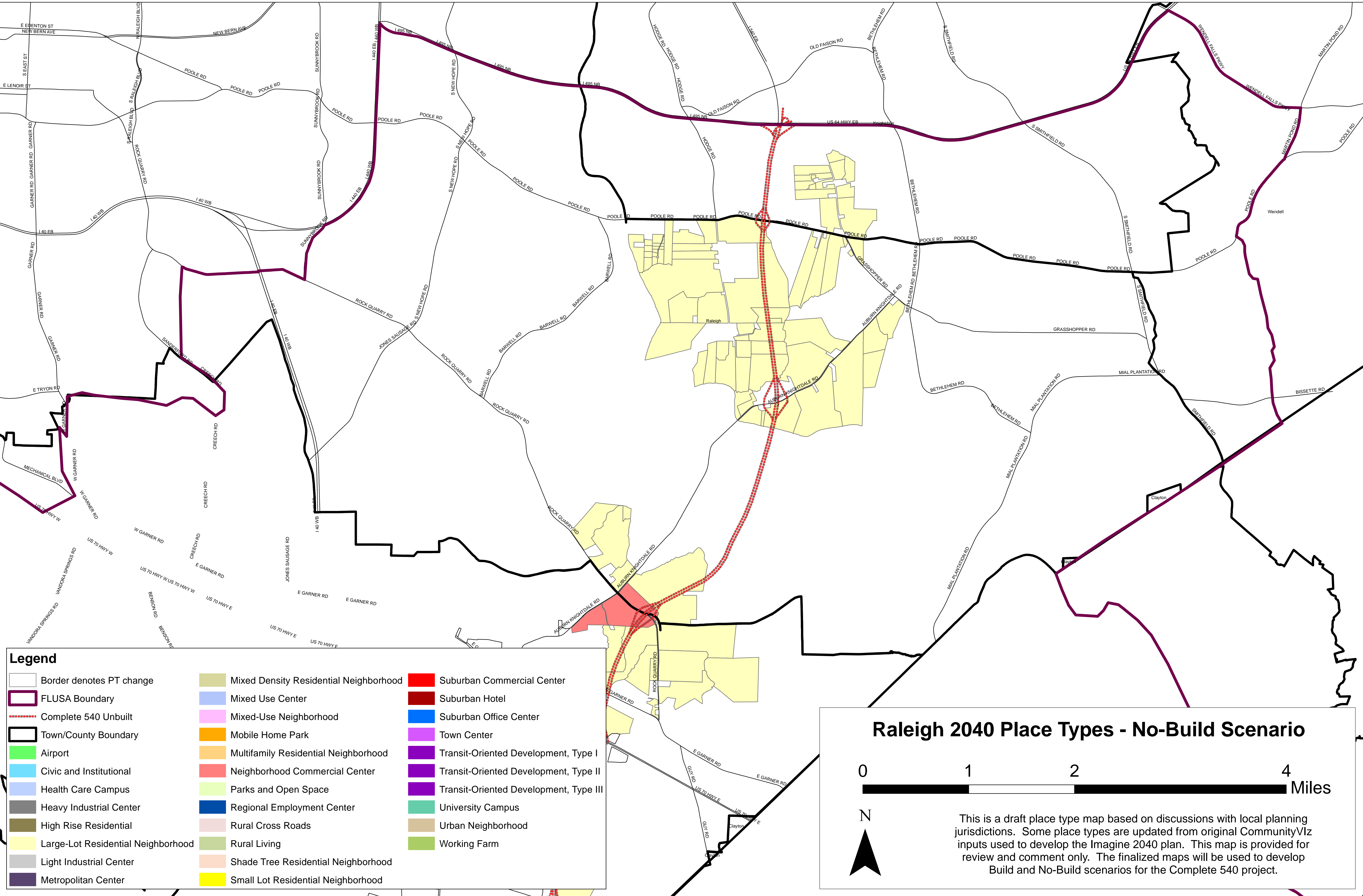
The area of the proposed interchange with Auburn-Knightdale road is wet and prone to flooding. Down the road at Grasshopper, City planners noted the potential for a Suburban Commercial in a Build scenario. City staff mentioned that in a No-Build scenario, such development was unlikely and not be redistributed elsewhere. Historically, southeast Raleigh has slower growth than the rest of the city. Building Complete 540 might encourage additional growth but would not likely change the area into a fast growing sector.

The City mentioned that parcels coded as Parks and Open Space will not change under either scenario. In the southeastern corner, there are a couple of parcels coded as Small-Lot Residential that will become Civic and Institutional in either scenario. The group discussed plans for Olde Towne Golf Course at Rock Quarry and New Hope Road that has stalled for several years and will likely not change anytime soon. Staff expected that any development there would likely still be Small Lot Residential. The City pointed out a couple of school parcels—at Poole and Old Poole and at Poole and Barwell with adjacent Suburban Commercial in both scenarios.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed for the City of Raleigh review.
- The meeting summary and revised mapping will be forwarded to the City of Raleigh meeting participants for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Town of Smithfield
MEETING MINUTES**

Date: September 23, 2016

11:00 AM to 12:30 PM

Smithfield Town Hall, 350 E. Market Street, Smithfield, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Paul Embler, Jr., Planning Director, Town of Smithfield

Mark Helmer, Planner/GIS Technician, Town of Smithfield

Scudder Wagg, Michael Baker Engineering (via teleconference)

Jon Wergin, Michael Baker Engineering (via teleconference)

Emaly Simone, Michael Baker Engineering

Ken Gilland, HNTB

Notes:

After introductions, Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is to use the CommunityViz model developed for Imagine 2040 to model development under the Build and No Build scenarios for 2040. The team is working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to the Town of Smithfield planners that the purpose of this meeting is to gather data on how land uses in the Town's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 land use Place Types provided by Smithfield and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of Smithfield inside the Future Land Use Study Area (FLUSA). This map served as a starting point for discussion. Place Type changes recommended by Smithfield planners were captured on the map. The marked-up map will be used to generate maps reflecting the outcomes of this meeting. These maps are attached to these notes for review.

The Smithfield planners were involved in neither the Imagine 2040 nor the Connect 2045 effort. Smithfield is in the Upper Coastal Plain Rural Planning Organization (RPO). They have worked with the Capital Area Metropolitan Planning Organization (CAMPO) on a limited basis to submit hot spot information for study. The hot spot they reported was near US 70 and I-95.

Smithfield planners also noted that the Smithfield Comprehensive Growth Management Plan (http://www.smithfield-nc.com/page/planning_documents) is from 2003. Updates to the 2008 Unified Development Ordinance and zoning maps are underway. In 2010, Smithfield expanded its ETJ to 2 miles from the town limits. Zoning in this area was adopted from Johnston County zoning and needs to be evaluated further by the Smithfield planners.

The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- US 70 Business Corridor in the Northeast – Industrial growth is likely to occur along US 70 Business in the vicinity of the airport. This growth is likely to happen by 2040 independent of the Complete 540 project and will include the existing commercial parcels.
- Cross-hatched Area on Smithfield Zoning Map – This map is available (http://www.smithfield-nc.com/page/planning_documents). The cross hatching indicates a sensitive watershed area and development is limited. The default land use type should be large-lot residential. Other uses may occur as indicated; however, the allowed percent impervious will be limited. For example, the maximum allowed percent impervious for heavy industrial use in the area is 24%. It should be noted that the edge of this area is not exact. It should be along a ridgeline. When zoning a parcel in this area, the planners visit the site to confirm drainage.
- Northeast Area – Small-lot residential is likely in this area.
- Area near Smith Creek Road and US 70 Business – This area is a growth node, and a small area plan is recommended.
- Area near Smith Creek Road and NC 210 – This area is likely to develop into a Neighborhood Commercial Center.
- Cleveland Road – Residential development is spreading towards Smithfield due to increasing land costs in western Johnston County. Several potential small-lot residential developments in this area have requested water and sewer service in this area. The Town has the capacity to serve this area. A commercial node is expected near the intersection of Cleveland Road and Smith Creek Road.

Paul provided a partial, marked up map of his recommended changes.

The construction of the US 70 Bypass has significantly reduced traffic on US 70 Business, leaving the land along this facility ripe for development as traffic is light on this 4-lane road.

Pharmaceutical industries in Clayton are growing by \$2 billion. This expansion is likely to influence development in Smithfield.

Johnston County supplies water and sewer to most of Smithfield's ETJ expansion. Smithfield utilities also serve this area.

Geography limits growth in Smithfield. The Neuse River floodplain and the lack of economic stimulation east of I-95 directs developmental growth in other areas.

Overall, Complete 540 would improve commutes for Smithfield residents. The airport is continuing to grow and attracting nearby industrial development. Although the Complete 540 project is unlikely to change the Place Types on parcels in Smithfield's jurisdiction, it may help development on these parcels come to fruition.

Next Steps:

- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment, and approval.
- Ken will send Paul the construction schedule for Complete 540.

**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
Wake County
MEETING MINUTES**

Date: August 29, 2016

1:00 PM to 2:30 PM

Wake County Planning Office, 336 Fayetteville Street, Suite 101, Raleigh, NC 27602

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

Bill Shroyer, GIS Analyst, Wake County

Tim Gardiner, Planner, Wake County

Samantha Smith, Town of Fuquay-Varina

Mike Sorensen, Town of Fuquay-Varina

Scudder Wagg, Michael Baker Engineering

Jon Wergin, Michael Baker Engineering

Emaly Simone, Michael Baker Engineering

Ken Gilland, HNTB

Presentation Materials:

- Imagine 2040 Place Type Inputs for Wake County map

Notes:

After introductions, the Scudder and Ken provided background on the status of the Complete 540 Project and explained the Quantitative ICE process. The Quantitative ICE analysis will estimate the land use impacts and water quality impacts of the proposed road by modeling the land use differences and estimating the acres of different land uses in the future (2040) under two different scenarios: with Complete 540 (Build) and without Complete 540 (No Build). Since the region has already worked at developing existing and future land use projections through the Imagine 2040 process, the project team is trying to pivot off the substantial work already completed. Therefore, the approach for this Quantitative ICE is use the CommunityViz model developed for Imagine 2040 to model development under the Build Scenario for 2040. The team working with Matt Noonkester, who ran the model for Imagine 2040, to rerun the model.

The project team explained to Wake County representatives that the purpose of this meeting is to gather data on how land uses in the County's jurisdiction would change in 2040 under the Build Scenario and understand how these land uses would be different from the No Build Scenario. The team brought a map showing the projected 2040 land use Place Types provided by Wake County and used in the Imagine 2040 modeling effort. The map displayed parcels and 2040 Place Types for the portions of Wake County inside the Future Land Use Study Area (FLUSA) and outside of municipal extraterritorial jurisdictions (ETJs). The map served as a starting point for discussion. County staff supplied edits, and the updated maps are enclosed for review.

The project team asked if the Imagine 2040 Place Types were developed with the assumption that Complete 540 would be built. Wake County representatives stated that the Imagine 2040 Place Type designations were assigned with the assumption that the road would be built by 2040; however, they also stated that these designations were developed in 2007-2008, reflect pre-Recession Place Types projections, and assumed that Complete 540 would be a free facility (i.e., not tolled). Given the age of the Place Type designation and the economic changes that have occurred over time, the project team may want to consider running the CommunityViz model for both the Build and No Build scenarios. The project team stated that input from Wake County on Place Type designations for both scenarios would be appreciated.

Wake County does not supply water or sewer service; therefore, the County planning department is only responsible for long-range planning in non-urban areas. As land within the County jurisdiction is developed at a denser level, the area is annexed by a Wake County municipality. Wake County has developed a map showing the municipal boundaries, ETJs, short-range urban service areas (USAs), and long-range USAs for each municipality in the county. Wake County representatives noted that the municipalities would best be able to discuss long-range planning within their USAs. Representatives from the Town of Fuquay-Varina noted that they joined the meeting to consult with Wake County representatives and provide input for the Fuquay-Varina USA.

Wake County representatives noted that they are familiar with the CommunityViz model. The model uses grids and that the sizes of these grids dictate the sensitivity of the model to Place Type designation changes on a parcel level. County representatives noted that seeing the Place Type designations and the grid input would be interesting.. County representatives also noted that stream order data and buffer information may be included in the model to add other types of information.

The meeting attendees then turned their attention to the map to discuss growth in specific areas.

- Area of the Complete 540 Interchange with US 401 – Fuquay-Varina is responsible for long-range planning in this area south of Ten-Ten Road. Garner is responsible for long-range planning in this area north of Ten-Ten Road. Fuquay-Varina representatives noted that utilities are available in this area to serve Wake Technical Community College. Under a Build Scenario, this development density would be higher than under a No Build Scenario. In the Build Scenario, the larger undeveloped parcels and some of the older subdivisions would convert to commercial. Land Uses will likely follow the *Wake County Fuquay-Varina/Garner Area Land Use Plan* (2004) map for the Ten-Ten/Rand Road Activity Center (<http://www.wakegov.com/planning/maps/Documents/Fuquay%20Land%20Use/ActivityCenters/TenTenRandRoad.pdf>). Under a No Build Scenario, this development node is still likely to occur, but the growth will be slower. For the No Build Scenario, only the big undeveloped parcels and some of the smaller parcels would be converted to commercial uses.
- Area of the Complete 540 Interchange with Bells Lake Road – This area is likely to be annexed by Fuquay-Varina by 2040. Commercial development potential is limited in the vicinity of the future interchange. Currently lack of utilities limit residential development south of the interchange. Future development in this area would be on a small scale and more contingent on the Build Scenario.
- Area of the Complete 540 Interchange with Old Stage Road – This area is within the Garner USA. This area has the potential for major growth with undeveloped large parcels and redevelopment

possibilities. Under a Build Scenario, this area could become a large commercial area with some higher density residential development. Most of the residential development is likely to contain a pairing of higher density development (apartments) with new subdivisions. Under the Build Scenario, this area might resemble the White Oak area. If the road were not built, this development would occur at a lower level and be located along Ten-Ten Road to the south. The amount of residential development associated with commercial development would also decrease.

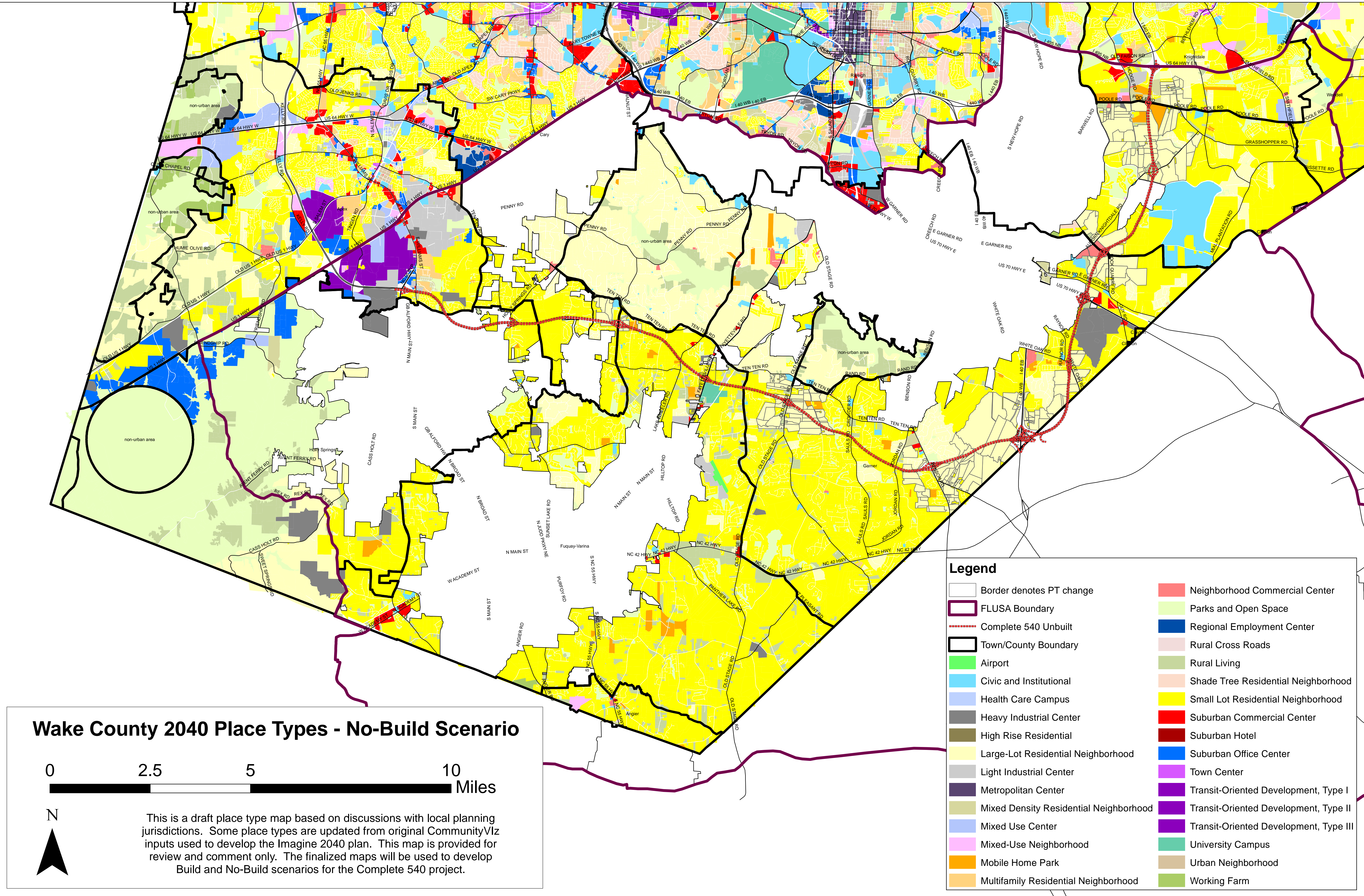
- Area of the Complete 540 Interchange with NC 50 – This area is in the Garner and Raleigh USAs. Swift Creek passes through this area. Development in this area may include a Neighborhood Commercial Center (gas station/dollar store type of development).
- Area of the Complete 540 Interchange with I-40 – No changes are expected in this area.
- Area of the Complete 540 Interchange with White Oak Road – More residential development is anticipated in this area.
- Swift Creek Watershed Area – Although Cary has offered to run utilities in this area if funding is secured from another source, it would take a great deal of effort change the development patterns in this area because of the land management plan. Therefore, no changes are expected in this area of the county.

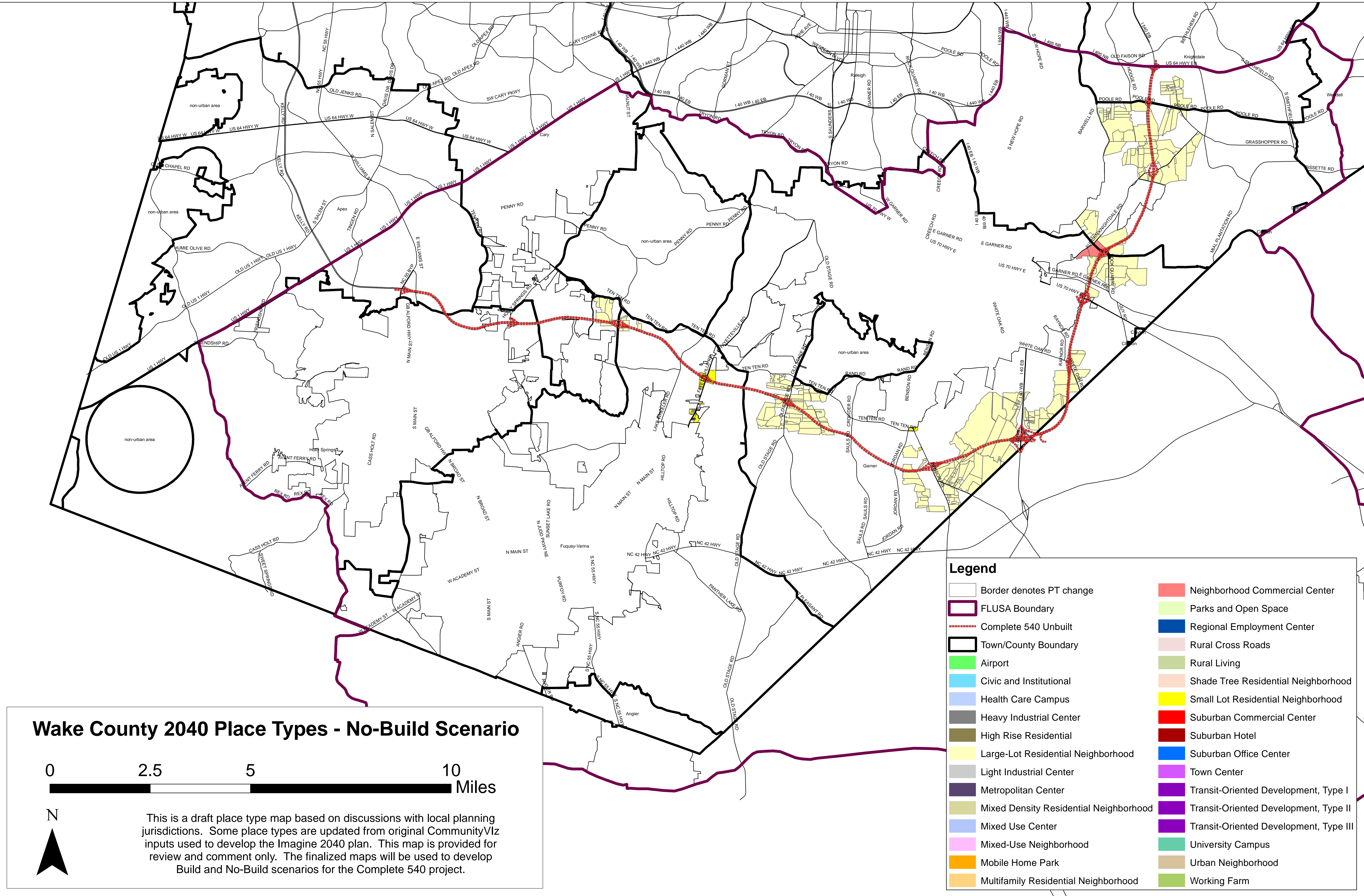
Wake County representatives noted that different municipalities had different foci regarding utilities (i.e., water/sewer). Cary is looking to expand. Garner and Raleigh are focusing on improving the existing system.

Wake County representatives also noted that the county's growth has been focused from Fuquay-Varina west around Raleigh to Wake Forest.

Next Steps:

- A representative from Wake County will attend the project team's meeting with Garner to assist with the Place Type designations in Garner's USA.
- A draft meeting summary and draft revised Place Type mapping will be developed to reflect this discussion and sent to the meeting attendees for review, comment, and approval.





**Complete 540 – Quantitative ICE
Local Jurisdiction Outreach
MEETING MINUTES**

Date: August 25, 2016

1:00 PM to 2:30 PM

Town of Wendell Community Development and Planning Department, Wendell, NC

Project: STIP R-2721, R-2828, R-2829 – Complete 540 – Triangle Expressway Southeast Extension

Attendees:

David Bergmark, Planning Director, Town of Wendell

Scudder Wagg, Michael Baker Engineering

Jon Wergin, Michael Baker Engineering

Will Kerr, Michael Baker Engineering

Ken Gilland, HNTB

Presentation Materials:

- Imagine 2040 Place Type Inputs for the Town of Wendell

Notes:

Scudder and Ken provided background on the Qualitative and Quantitative ICE process and scope of work for the Complete 540 project. Scudder and Ken discussed the plan to use the CommunityViz model developed for Imagine 2040 to forecast land use in Complete 540 Build and No Build Scenarios for 2040. They described the area within the Future Land Use Study Area (FLUSA). They discussed the need to review the Place Type inputs to accurately reflect the likely development patterns in a Build and No Build Scenario.

The group reviewed the 2040 Place Types. David said land use assumptions for the Town of Wendell need to be updated but not in relation to I-540. Wendell has an arterial and collector street plan in the development process.

The group next discussed ongoing development that is independent of Complete 540. A gas station and other neighborhood commercial development is planned near the intersection of Wendell Falls Parkway and NC 264. Residential development is anticipated southwest of the intersection. This would be small lot residential (0.3 to .25 acre lots). Residential development (planned urban development [PUD] with 12-year timeline) is present at Martin Pond Road and Wendell Falls Parkway.

Town of Wendell does not think Complete 540 will effect development location or density. The project would not change place types, it may increase the pace of development. Unless something unexpected happens, development patterns should not change. The Knightdale Bypass is a critical connection for the Town of Wendell. They indicated that I-540 will be a plus to transportation patterns the area. They considered the US 64/264 improvements as more critical to transportation access for Wendell.

Next Steps:

- A meeting summary will be drafted.
- Maps showing Build and No-Build 2040 place types will be developed
- The meeting summary and revised mapping will be forwarded to David Bergmark for review, comment, and approval.