



DEVELOPMENT POTENTIAL MEMORANDUM

July 2013





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1 INTRODUCTION

1.1 Project Background

Winston-Salem is conducting this Alternatives Analysis (AA) to further investigate opportunities for the implementation of an Urban Circulator in downtown, building upon the *Winston-Salem Streetcar Feasibility Study* (completed in 2006) and recommendations developed as part of the *Regional Transit Development Plan, Forsyth and Guilford Counties Transit Vision for 2025* (completed in 2010), the *2030 Legacy Comprehensive Plan Update* (2012) and *The Downtown Plan* (completed in 2007). This AA will develop and evaluate transit alternatives to best meet project goals and will establish a Locally Preferred Alternative (LPA) describing the preferred transit **route** and **technology**.

The Urban Circulator Study is conducting more detailed planning analyses for a potential circulator project to connect the city's most active educational, medical and employment destinations to the central bus hub. The study area is focused on an approximately 4-mile corridor that extends west to east through downtown Winston-Salem and surrounding neighborhoods, from Wake Forest Baptist Medical Center through downtown, Piedmont Triad Research Park and Winston-Salem State University, to East Winston. As such, an integrated transit system in downtown and the surrounding neighborhoods will improve mobility, economic development and community livability from both the local and regional perspectives, serving the people who live, work, and visit here.

1.2 Purpose of Document

This memorandum updates the 2006 analysis as to the amount of potential as yet unused development capacity that may exist within walking distance of the circulator line. Presence of improved public transportation service can be expected to help underpin development trends, and depending on the mode, quite possibly accelerate development activity close to the alignment.

For the purposes of this analysis, a conservative (low) 600-700 foot walking distance was used from the center of the transportation line to the front door of potential new developments. Even so, very substantial development capacity exists within this "influence" area of the circulator alignment.

2 ROUTE ALIGNMENT AND POTENTIALLY DEVELOPABLE SITES

2.1 Route Alignments

Figure 1 shows the locally Preferred Alignment for the circulator route. It also shows the 600-700 foot "influence area" extending along the line.

2.2 Potentially Developable Sites

Virtually all the land within the "influence area" (except for certain single family and Historic Areas near some portions of the alignment west of Marshall Street, and near Martin Luther King Jr. Drive) is eligible for varying degrees of mixed use densification under the City's present zoning code and development approval processes. Potentially developable sites include vacant parcels; large parking lots (including ones in the Downtown where surface parking could be decked or shifted to the public parking garages); and auto, industrial and other uses where the building is very small relative to the land area. Pedestrian Business areas near the Medical Center (1st Street) and along Burke Street with small infill lots or buildings were also included as "potentially developable" although in these cases it is assumed that only 50% of the potential area is assumed available in the long term. Similarly, some areas along Martin Luther King Jr. Drive and 5th Street (at the east end of the route) are also shown as partially re-

developable. These sites are all shown on Figure 1, with areas assumed to be 100% developable shown in bold outline, and areas partially developable shown in crosshatching. These areas were all identified by a visual inspection of recent aerials and on the ground review of the alignment and parcels near it.

In addition to these potentially developable sites, there are a significant number of buildings either totally or partially vacant along the route. This amount of additional space that could be repurposed amounts to at least several hundred thousand square feet based on the vacancies in Class B/C office space and retail store fronts along the route.

The degree to which any or all of these categories of sites redevelop in a given time horizon (measured in decades) will be a function of the density permitted by the City of Winston-Salem¹, the market economics prevailing at any given point in time, and the extent to which the new transportation mode increases rents and decreases the need for on-site parking.

2.3 Long Term Build-out

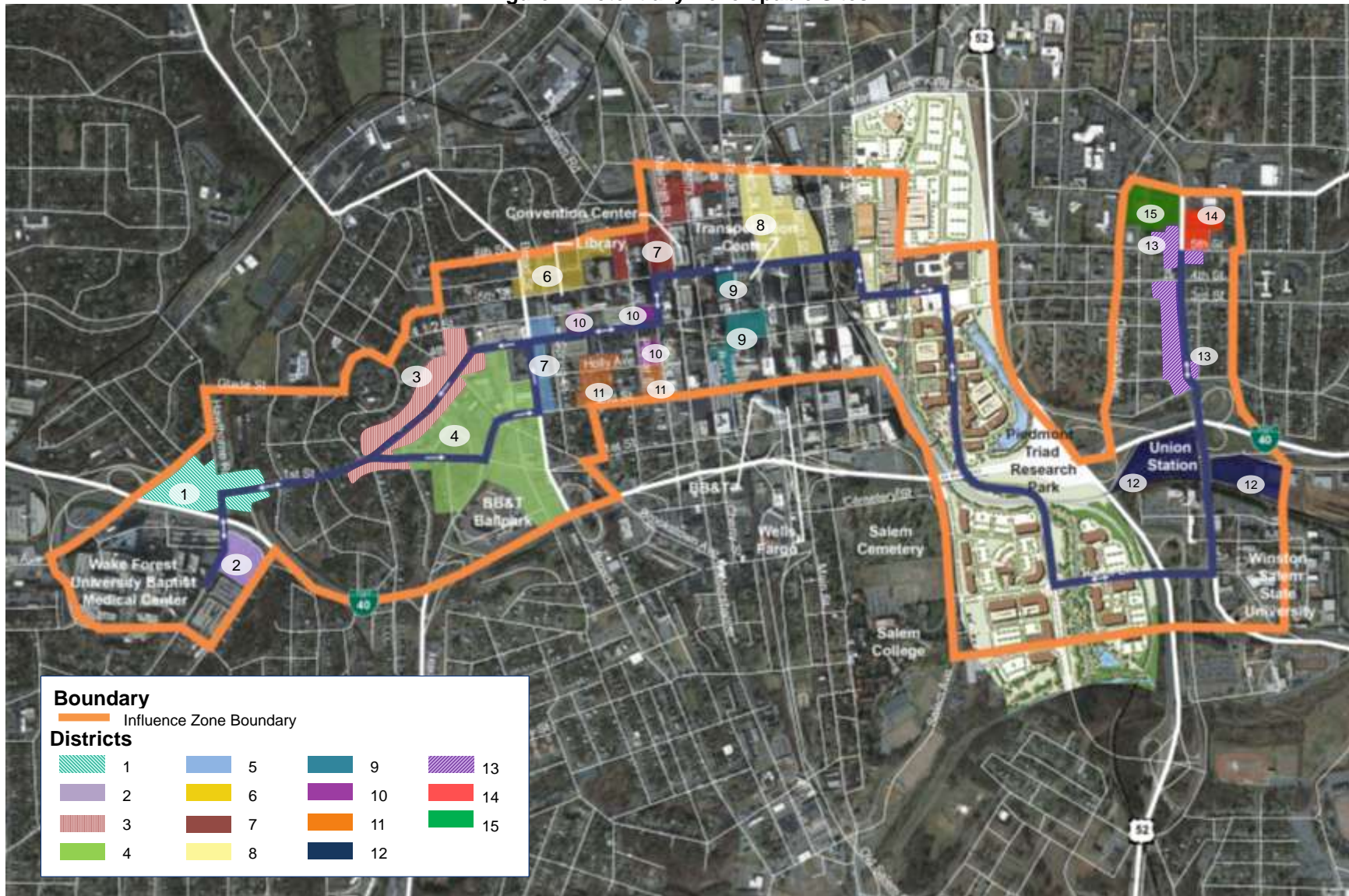
The “potentially developable sites” were grouped into 16 “districts” to reflect their location in different market subareas, localized variations in overall density controls per the zoning rules, and the likelihood that different economic forces would be at work in the different areas.

As in the case of the 2006 study a series of building typologies was reviewed and applied to the different “districts”. Simply put, the typology parallels that used in 2006. However, a single Floor Area Ratio (FAR ratio²) has been established for each “district” without distinguishing between residential and office. This not only simplifies the analysis but makes it more realistic by accounting for the greater flexibility that developers have in determining how much residential vs. commercial office they may choose to build on any given site in a mixed use district.

¹ Most of the alignment is covered by special zoning categories that now allow Mixed Use Zoning, reduced parking ratios and the application of a Form Based Code, where building volume (and hence area) is limited more by height and set-back regulations than by any stipulated density limit. Under this type of zoning, allocation of build-out capacity can fluctuate based on market conditions and locational preferences of certain land use types in certain areas (e.g. major office may still tend to concentrate in the core, whereas the Ballpark Area, for example, is likely to have more appeal as a primarily residential area). Development type is also driven by economics, so there is no certainty that just because a site could, for example, accommodate 4 or 5 story construction, that it will develop at that intensity, because market generated parking requirements may require decked parking which may not be supportable by the economics, thereby limiting development to what can be “parked” on a surface lot or in tuck under garages (e.g. in townhouse units). All of these factors suggest that a range in ultimate build out density should be factored into the analysis).

² FAR = Floor Area Ratio. The ratio between the gross square footage of buildings allowed and the land area they cover. A FAR of 3, for example, is equivalent to a 3 story building covering 100% of a site, or a 6 story building covering half of it, or a 12 story building covering ¼ of it.

Figure 1: Potentially Developable Sites



The categories used are as follows:

- A. Surface parked buildings (parking behind building or in tuck under area at rear of building (e.g. townhouse alley) 1.0 FAR
- B. "Texas donut wrap": Typically 3 - 4 story wood frame construction wrapping around a multilevel parking deck. 1.6 FAR
- C. Mid-rise with built-in parking: Typically 6 - 10 stories with onsite parking garage under building or adjacent to it. 3.0 FAR
- D. Downtown hi-rise: Typically 10-15 stories with onsite or adjacent parking 5.0 FAR
- E. Signature hi-rise: Typically 20 stories +/- with onsite or adjacent parking 10.0 FAR

A "low" and "high" development capacity was calculated for each district. Each of the 15 "districts" (outside of PTRP) was assigned a range in additional build-out: "Low" being the lowest densities likely to prompt development of vacant sites in the district in a stable but slow market comparable to the average over the past 12 years. "High" being the highest likely densities given a much stronger market.

Neighborhood scale and characteristics were also taken into account. For example, in the area along Burke Street redevelopment on the vacant parking lots and of the more marginal buildings is assumed to occur at 1.0 FAR on the low side and 1.6 FAR on the high side. Conversely, the surface parking lots in the hi-rise heart of downtown are assumed to develop at densities of 5.0 to 10.0 FAR. In some districts a mix between several of the densities was applied.

To determine residential build-out capacity, an average unit size of 1100 square feet was used³. A ranging exercise applied a "low" versus "high" percentage of residential build-out to the total FAR potentially available in each of the "districts" to determine a range of total possible residential construction. Commercial construction ranges were then established by subtracting these amounts from the total range of build-out capacity in each area.

The results are shown in Table 1 below. The total additional build-out capacity along the circulator alignment and within 600 to 700 feet of it is estimated at 4,900 to 10,800 residential units; and 11 to 12 million square feet of commercial development. Of this later amount an estimated 6.2 million square feet are designated as biotechnology and related special space in the PTRP plan area, leaving approximately 4.6 to 5.5 million square feet in the area to the west of the PTRP, and 0.1 to 0.4 million square feet in the area to the east of the PTRP.

The 2006 study estimated a total of 13.6 million square feet of additional development capacity (combined residential and commercial) in the areas west of PTRP. This updated study "brackets" that earlier number with a "low" end estimate of 9.6 million square feet and a "high" end estimate of 15.9 million.

³ This average number is lower than the series used in the 2006 study but seems more consistent with the high cost of more dense construction and the pattern of smaller units seen in other cities experiencing successful "in town" living. Typical unit size may average 1 bedroom or slightly larger.



**Table 1: Range in Potential Additional Build-out Capacity along Circulator Route
Part A: Low Build-out**

District	Acres	% Developable	Developable Land (SF)	Low Buildout					
				FAR	Gross Sf of Development	% Housing	Housing	Units (1100 sf/unit)	Commercial
1	8.5	50%	185,130	1	185,130	50%	92,565	84	92,565
2	3	100%	130,680	3	392,040	0%	-	-	392,040
3	18.5	50%	402,930	1	402,930	30%	120,879	110	282,051
4	36	100%	1,568,160	1.6	2,509,056	70%	1,756,339	1,597	752,717
5	3	100%	130,680	1.6	209,088	50%	104,544	95	104,544
6	8	100%	348,480	2.5	871,200	60%	522,720	475	348,480
7	7.5	100%	326,700	3	980,100	60%	588,060	535	392,040
8	15.5	100%	675,180	3	2,025,540	60%	1,215,324	1,105	810,216
9	5	100%	217,800	5	1,089,000	20%	217,800	198	871,200
10	2.8	100%	121,968	3	365,904	30%	109,771	100	256,133
11	5	100%	217,800	2.5	544,500	40%	217,800	198	326,700
West of PTRP*	99		4,325,508	2.2	9,574,488		4,945,802	4,496	4,628,686
PTRP**	145		6,316,200	1.0	6,200,000				6,200,000
12	14	11%	67,082	3.0	201,247	70%	140,873	128	60,374
13	5	30%	65,340	1.0	65,340	50%	32,670	30	32,670
14	2.5	100%	108,900	1.0	108,900	80%	87,120	79	21,780
15	7	50%	152,460	1.0	152,460	90%	137,214	125	15,246
East of PTRP***	9		393,782	1.3	527,947		397,877	362	130,070
TOTAL:	253		11,035,490		16,302,435		5,343,679	4,858	10,958,756

* Acreage is adjusted downwards to reflect the 50% developability assumptions in Districts 1 and 3

** Based on square footage and developable areas contained in the PTRP Master Plan documents

*** Acreage in total is adjusted to reflect reduced developability % in the assumptions

Part B: High Build-out

District	Acres	% Developable	Developable Land (SF)	High Buildout					
				FAR	Gross Sf of Development	% Housing	Housing	Units (1100 sf/unit)	Commercial
1	8.5	50%	185,130	1.6	296,208	70%	207,346	188	88,862
2	3	100%	130,680	5	653,400	50%	326,700	297	326,700
3	18.5	50%	402,930	1.6	644,688	70%	451,282	410	193,406
4	36	100%	1,568,160	2.5	3,920,400	85%	3,332,340	3,029	588,060
5	3	100%	130,680	2.5	326,700	70%	228,690	208	98,010
6	8	100%	348,480	4	1,393,920	80%	1,115,136	1,014	278,784
7	7.5	100%	326,700	5	1,633,500	80%	1,306,800	1,188	326,700
8	15.5	100%	675,180	5	3,375,900	70%	2,363,130	2,148	1,012,770
9	5	100%	217,800	10	2,178,000	20%	435,600	396	1,742,400
10	2.8	100%	121,968	5	609,840	40%	243,936	222	365,904
11	5	100%	217,800	4	871,200	50%	435,600	396	435,600
West of PTRP*	99		4,325,508	3.5	15,903,756		10,446,559	9,497	5,457,197
PTRP**	145		6,316,200	1.0	6,200,000				6,200,000
12	14	100%	609,840	1.6	975,744	80%	780,595	710	195,149
13	5	70%	152,460	1.0	152,460	70%	106,722	97	45,738
14	2.5	100%	108,900	1.6	174,240	90%	156,816	143	17,424
15	7	100%	304,920	1.6	487,872	80%	390,298	355	97,574
East of PTRP***	27		1,176,120	1	1,790,316		1,434,431	1,304	355,885
TOTAL:	271		11,817,828	5.44566	23,894,072	0%	11,880,990	10,801	12,013,082

* Acreage is adjusted downwards to reflect the 50% developability assumptions in Districts 1 and 3

** Based on square footage and developable areas contained in the PTRP Master Plan documents

*** Acreage in total is adjusted to reflect reduced developability % in the assumptions

2.4 Build-out by 2037

Housing unit absorption from 2000-2012 is estimated at averaging between 50 - 70 units per year in the entire Downtown area depending on the source reviewed (permits, project lists, Census data, real estate information). This covers the entire downtown area west to Wake Forest Baptist Medical Center (WFBMC) eastwards into the northern third of the Piedmont Triad Research Park (PTRP) and south over Business 40 to Old Salem area. No housing unit absorption has been identified in the area occupied by the rest of the PTRP or by Union Station, although there does appear to have been some student housing developed at WSSU in recent years. Office absorption over the same period averaged between 80,000 and 100,000 square feet per year (excluding any medical uses at WFBMC, and space at PTRP [see below]).

These numbers are not inconsistent with the recent Traffic Analysis Zones updated forecasts to 2035 covering the same general areas which project increases of 50 households a year and employment in office using categories that equates to about 80,000 square feet per year.

Sustained baseline growth without significant transit improvement upgrades can therefore be posited at about 50 units per year and 80,000 square feet of commercial office space in the overall central city area west of the PTRP. Based on 25 years of growth from now until 2037, that would imply **1250 additional households and 2 million square feet of office in the portion of the circulator route by the close of the study period (2037)**, assuming all of the new development locates within the 600 - 700 feet "influence zone". These numbers are a fraction of the low end build-out capacity of the developable lands along the route: 27% of residential capacity and 43% of office capacity).

Other cities have seen an increase in the absorption rate of development due to presence of streetcar, particularly with respect to residential development. Transit rich, pedestrian oriented, mixed use neighborhoods are attracting more households who would otherwise, by default, live in the suburbs. As much as a doubling or even tripling (to say 150 units/year) of the sustained annual residential absorption rates might be possible in the downtown areas west of PTRP based on experience of other cities, provided there is frequent, predictable, permanent and high quality transit service in the form of fixed rail vehicles. (The record for increased development in connection with improved bus service is unproven).

There is adequate capacity for many decades of streetcar induced residential development. If, in fact, development and absorption accelerate as in other cities, then build-out densities will tend to rise, thereby increasing the holding capacity of the "influence zone" towards the higher end of the indicated range. Office development may also increase but to a much lesser extent, perhaps at the outside by 25%. All types of development will tend to gravitate towards locations along the line.

In addition to the above levels of development, continued build-out of PTRP can be expected. Their plans total an additional 5.5 million square feet of building space over and above the roughly 700,000 square feet already completed in the area. Build-out is projected to add an additional 20,000 to 25,000 employees over the next 25 to 30 years. With the move of Inmar to the PTRP another 1000 employees are expected by end of 2013 bringing total employment close to 2000. These sustained employment boosts could help underpin strong future residential demand in the Goler Heights, 6th to 7th Street neighborhoods, around the Ball Park, at Union Station, and areas east of US 52 and in the East Winston neighborhoods along the circulator route alignment (Districts 13 - 15 on Figure 1). The presence of streetcar on Martin Luther King Jr. Drive might help stimulate and underpin new housing and commercial demand to move east of US 52, particularly as PTRP fills up. Nonetheless, the average annualized absorption along Martin Luther King Jr. Drive (over the period to 2037) is unlikely to exceed 10 - 15 units per year and 1,000 - 3,000 square feet per year of commercial, unless projects are subsidized in order to lower rents and/or financing costs to levels below what new construction would normally require.

Within the influence area, a streetcar could result in up to an additional 2750 housing units over and above the 1250 housing units that might be expected to be added in any event by 2035, thereby increasing support for local businesses. Streetcar could accelerate commercial development by up to 600,000 square feet over and above baseline projections, thereby supporting possibly an additional 3000 – 3500 jobs by 2035 over the baseline projections. *Table 1* summarizes the projections which are inclusive of the Baseline projections and represent the upper limit of what might be anticipated and are illustrative of upside potential if favorable conditions prevail.

Table 1: Streetcar Development Potential

Circulator Mode	Increase over 25 years ⁴		
	Additional Housing Units	Additional Commercial Square Footage	Additional Jobs
Baseline	1,250	2 million square feet	8,000 - 10,000 jobs
Streetcar⁵	Up to 4,000	Up to 2.6 million square feet	Up to 13,000 jobs

No national evidence for an increased development pace with Enhanced Bus exists. Therefore, no projections over "baseline" are assumed.

⁴ These numbers are in addition to possible development and baseline employment gains over the projection period in the PTRP area alone. Continued build-out of PTRP can be expected. Their plans total an additional 5.5 million sf. of building space over and above the roughly 700,000 sf. already completed in the area. PTRP build-out targets additional 20,000 - 25,000 employees over the next 25-30 years.

⁵ These numbers for streetcar are inclusive of the Baseline projections and represent the upper limit of what might be anticipated. They are illustrative of upside potential if favorable conditions prevail. Poor execution of mixed use zoning and development, lower frequency/higher cost streetcar service, and/or poor national or regional economic conditions are some of the factors could all substantially lower outcomes.