Arlington Analytics

Langston Boulevard Area Five: Fiscal Analysis

Summary

Plan Langston Boulevard is a county-led process that "takes a closer look at the long-term goals for this important corridor and its surrounding areas." The plan focuses on land use in five potential areas of development, beginning with area one in the west near East Falls Church metro and finishing in the east with area five in North Highlands. In this section, we analyze area five. In other sections, we analyze areas one, two, three and four, and the entire plan.

Plan Langston Boulevard provides details on two scenarios for most of the areas: a less-dense Scenario A, and a higher-density Scenario B. Although any projected development would take place over decades, for analytical purposes, we evaluate the plan as if all development were completed in 2022. This approach will help us understand the long-run implications for student growth, resident growth, and the county operating budget. Compared to current development, we find that in area five:

- The number of residents in area two will increase by about 2,500 in both Scenarios A and B.
- Available commercial space will increase by about 550,000 square feet in Scenario A and by about 700,000 in Scenario B.
- Using our student generation factors (SGFs) and Arlington Public Schools (APS) SGFs, we estimate that APS enrollment will decrease between 62 and 80 students.
- In the unified operating budget—including the county operating budget, APS' operating budget, and anticipated school construction costs but excluding other capital expenditures—revenues increase more than spending by $14.5 to $15.8 million per year.
- In addition, we analyze long-term risks to school enrollment and the county operating budget by evaluating the scenarios using the highest SGFs observed for any Langston Boulevard area schools. Under this assumption, we find that up to 263 to 329 new students lower the surplus to as little as $3.6 million per year.

It is important to note that this is a fiscal analysis of the county's operating budget, not of the county's capital budget or capital improvement plan. *We have not estimated the cost of such infrastructure improvements as flood control, transportation, or land acquisition that are proposed in Plan Langston Boulevard*. These costs

could be quite substantial. Moreover, most of these investments would occur before or during the development, which will necessitate substantial borrowing before any additional revenues could be used to pay for them.

In this analysis, we focus on the county and school budgets. There may be other elements—such as additional traffic, construction issues, or environmental considerations—that are important components of a thorough cost-benefit analysis.

Background: Langston Boulevard Development

Langston Boulevard runs from East Falls Church into North Rosslyn. Development along the highway varies from high-rise apartments in Waverly Hills and North Highlands to detached single-family homes in Leeway Overlee and East Falls Church. There are few office buildings, but there is a substantial amount of retail. According to Plan Langston Boulevard documents, "The plan will describe what we want Langston Boulevard to be like 30 years in the future and outline how we'll get there."

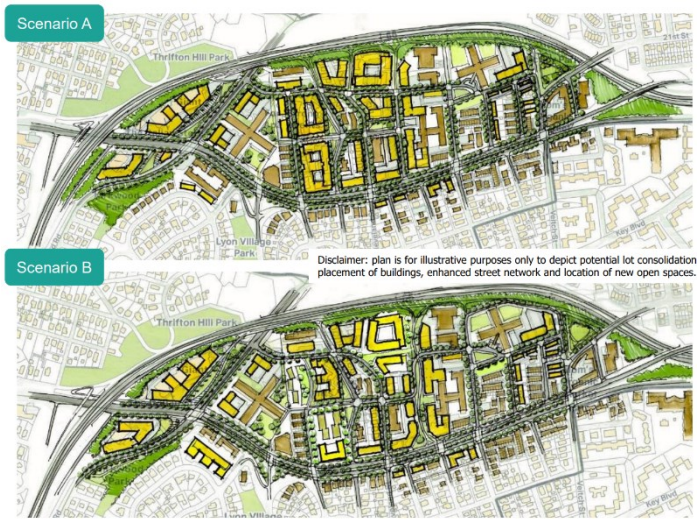

Figure 1: West part of area give of Plan Langston Boulevard, Scenario A and Scenario B. Source: Plan Langston Blvd.

Area five covers properties in North Highlands and Lyon Village as well as a few properties that are not located within a civic association. Current plans call for two potential scenarios: Scenario A—a significant increase in density concentrated among residential units—and Scenario B—with a larger increase the commercial and office space. The plan breaks down the area into a west component, shown in Figure 1, and an east component, shown in Figure 2.

In the western part of area five, the plan proposes significant increases in density along the north side of Langston Boulevard in both Scenarios A and B. The plan permits buildings of between five and seven stories immediately adjacent to Langston Boulevard. Unlike the other four areas, this strip of land offers the opportunity to build taller office buildings. Also, unlike the other areas, density increases further from Langston Boulevard. Residential buildings up to 15 stories are allowed in many places adjacent to I-66. Both plans propose an increase in green open space in addition to the increase in density. Based on recent discussions, on the south side of Langston Boulevard, we restrict development to the half-block adjacent to the boulevard. The areas zoned R-6 are left unchanged.

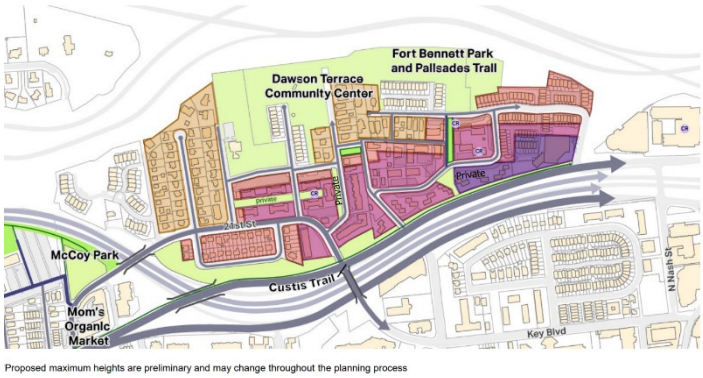

Figure 2: East part of area give of Plan Langston Boulevard. Source: Plan Langston Blvd.

In the east part of area five, shown in Figure 2, there is a substantial increase in both commercial and residential density. The plan calls for buildings up to 10 stories around the current Air Force Association Headquarters building. Building sizes decrease to seven and five stories further back into the neighborhood.

Both west and east parts of area five area home to a number of larger condominiums. As explained in subsequent analysis, these properties have a lower likelihood of redevelopment.

New Development

To estimate the number of apartment units in a prospective apartment building, we use a recent build in the Maywood neighborhood as a guide. The Cherry Hill apartment building on parcels 05052015, 05052016, and 05052017—roughly behind the Safeway at the corner of N. Monroe and Langston Boulevard—has 93 units on four floors, situated on 110,000 square feet of land. Therefore, we assume that for each floor, there is one apartment unit on each floor for each approximately 5,000 square feet of land. Although the apartments are much smaller than 5,000 square feet, a considerable amount of space is dedicated to common areas, maintenance facilities, exterior spaces, surface parking, and other uninhabited elements.

For commercial properties, both retail and office, we assume that half of the land space is taxable commercial space, per floor. For example, a new building with ground-floor retail located on parcels totaling 25,000 square feet, we would assume that there is about 12,500 square feet of taxable commercial space. A four-story office building on the same parcels would yield 50,000 square feet of taxable commercial space. These estimates are broadly in line with or slightly smaller than select commercial properties in the Clarendon area.

For residential development under four stories, which are more prevalent in Scenario A, we assume that duplexes will replace existing development.[1] In most cases, we assume two residential units will occupy each parcel already sized like a typical R-6 parcel.

Although there is nothing explicitly barring redevelopment for condominiums, the ownership structure presents additional obstacles to redevelopment. The governing documents typically require a very high level of agreement within the community; therefore, we assume that only townhome communities could be

[1] Alternate development could include townhomes or small, garden-style apartments. Townhomes have a slightly higher density, they generate slightly higher student enrollment, and generate somewhat higher real estate tax revenues. Garden style apartments may have slightly higher enrollment than duplexes, and bring generally similar or slightly higher tax revenue. Using alternate assumption for these properties did not yield large changes to the overall estimates of the fiscal effects of this new development.

redeveloped because the profit from redevelopment may be high enough to persuade membership to redevelop.[2]

In the Appendix at the end of the paper, we list our assumptions for new buildings, their locations, the number of apartment units, the amount of new commercial space, the gross number of new students, and the gross number of new residents. In this appendix, we include the gross change in number of residents and students; although not listed in the appendix, the loss in students and residents from the redeveloped properties is included in the total budget, student enrollment, and resident population analysis.

In some cases, the buildings straddle boundaries on height limits, in which case we typically report an average building height across the entire parcel.

We compare the new development from Scenarios A and B to the current state of development on Langston Boulevard. It is possible that without zoning changes to the Langston Boulevard corridor that these properties would continue to develop, particularly for parcels zoned C-2, nonetheless this development would be difficult to predict and vastly more limited than proposed in the Plan Langston Boulevard initiative.

Students and Residents

Table 1 shows our estimates for the number of new residents. We anticipate that a fully-developed Scenario A would bring in about 2,600 new residents relative to current development. Scenario B, which proposes larger, more dense residential construction, will likely bring more than 2,500 new residents.[3]

Table 1:

Changes in Residents (A)	2,565
Changes in Residents (B)	2,447
Change in Business Floorspace (A)	550,269
Change in Business Floorspace (B)	697,999

Sources: Author's calculations.

Some of this population growth, however, comes at the expense of commercial real estate. We anticipate that Scenario A will result in the gain of about 550,000 square feet of commercial space in Scenario B and about 700,000 square feet in Scenario B.

Student enrollment growth is the single largest category of operating budget spending affected by new development. There is a significant amount of uncertainty around how many students are going to come from each new residence. Therefore, we use three different estimates of SGFs to estimate student growth:

- Countywide SGFs estimated by Arlington Analytics developed with statistical analysis of data from the APS elementary school boundary process,

[2] We assume that townhomes can be redeveloped, with one exception. The area one plan for the recently-built townhome development near Charles A. Stewart Park, however, does not provide a large density increase; therefore, we assume that it will not be redeveloped. It is possible that a few of the garden-style condominiums, concentrated in area five, could be redeveloped into more dense options. Proposed density allowances, particularly in area five, may make redevelopment valuable enough to incentivize membership to agree to redevelopment.

[3] We use Arlington Analytics population generation factors. Factors are based on 2018 American Community Survey data by census block group; we anticipate that these factors will change slightly when all of the 2020 Census data is available at much more granular level.

- APS school-by-school estimates of SGFs reported in the Fall 2019 APS Enrollment Report[4], and
- A "worst-case" risk analysis using APS' highest SGFs from any school serving the Langston Boulevard corridor.

One reason we use these different approaches is because APS finds that elevator apartments assigned to Glebe generate nearly eight times as many students as elevator apartments assigned to Taylor, and about three times as many students as the countywide average. Most of this discrepancy is owed to the exceptionally large number of students in the planning unit encompassing the Avalon Arlington North, an apartment complex near the corner of Glebe Road and Langston Boulevard. Nonetheless, it is possible that the large enrollments from Avalon Arlington North represent what Arlington should expect from new residential development, which is why we include those SGFs in our "worst-case" risk analysis in addition to the two more standard estimates.

None of the other elementary schools serving the Langston Boulevard corridor have similarly high SGFs. For example, the high-rise developments in North Highlands, north of Langston Boulevard but south of I-66, have very low student enrollment. The newest property in that area, Verde Point, has only seven students enrolled in APS elementary schools from about 200 units. For this reason, we do not expect that the "worst-case scenario" is a likely outcome, although some intermediate student enrollment between our estimates and the "worst-case scenario" appears to be quite possible.

In Table 2, we show expected student enrollment changes. Although there are large numbers of new residences, in both cases, the new construction is concentrated on larger apartments, which yield comparatively few students per unit. Moreover, a number of garden apartments, single family homes, and committed affordable units, with comparatively high student enrollments, will be redeveloped. Using either APS factors or Arlington Analytics estimates leads to similar anticipated losses in student enrollment. In both cases, we calculate between 200 and 300 students would be displaced from redevelopment.

Table 2:

	Arlington Analytics	APS Factors*	"Worst-Case" Factors**
New Construction (A)	215	141	532
New Construction (B)	213	123	466
Expected Enrollment Loss	285	203	203
Total Change in Enrollment (A)	(70)	(62)	329
Total Change in Enrollment (B)	(72)	(80)	263

*APS SGFs from the Fall 2019 APS Enrollment Report. Countywide averages used in place of missing values.
** "Worst-Case" Factors are APS factors for multi-family elevator residences from Glebe, Swanson, and Yorktown. SGFs used to compute expected enrollment loss are from respective schools. "Worst-Case" Factors are unchanged when computing student loss from redeveloped properties.

We expect net student enrollment to decrease by a net 70 students in Scenario A and by 72 students in Scenario B. Using APS SGFs, net student enrollment decreases by 62 students under Scenario A and by 80 students under Scenario B. In the "worst-case" risk analysis, we anticipate that student enrollment would increase by a little more than 329 students in Scenario A and a little more than 263 students in Scenario B.

[4] APS also does not report elevator apartment SGFs for Discovery, Nottingham, or Tuckahoe; we use the APS countywide average SGFs.

Fiscal Effects of New Development

Using our fiscal model, we calculate the fiscal effects of the new construction, residents, and students. In Table 3, we show the effects in six different cases: Scenarios A and B, each with Arlington Analytics' SGFs, APSs SGFs, and APSs SGFs in the "worst-case" scenario. Although the model can project revenues and operating expenses across dozens of categories, we distill the results into a few key broad categories.

Table 3: Projected Revenues, Expenditures, and Deficit
(Change in current [nominal] USD, millions; last line is nominal USD)

	Scenario A (AA SGFs)	Scenario B (AA SGFs)	Scenario A (APS SGFs)	Scenario B (APS SGFs)	Scenario A ("Worst-Case" SGFs)	Scenario B ("Worst-Case" SGFs)
Real Estate Taxes	$18.6	$19.1	$18.6	$19.1	$18.6	$19.1
Property Taxes	$1.6	$1.7	$1.6	$1.7	$1.6	$1.7
BPOL	$0.8	$1.0	$0.8	$1.0	$0.8	$1.0
APS	($0.1)	($0.1)	($0.1)	($0.1)	$0.6	$0.6
Other Local	$2.2	$2.2	$2.2	$2.2	$2.2	$2.2
External, Misc.	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Revenue	**$23.1**	**$23.9**	**$23.1**	**$23.9**	**$23.8**	**$24.6**
County Operating	$10.1	$10.2	$10.1	$10.2	$10.1	$10.2
APS Spending	($1.7)	($1.7)	($1.5)	($1.5)	$7.8	$6.3
APS Debt Service	$0.0	$0.0	$0.0	$0.0	$2.3	$1.9
Total Spending	**$8.4**	**$8.3**	**$8.6**	**$8.1**	**$20.2**	**$18.2**
Change in Balance (Negative is deficit)	**$14.7**	**$15.6**	**$14.5**	**$15.8**	**$3.6**	**$6.4**
Fiscal Change for Each New Resident	**$5,730**	**$6,375**	**$5,652**	**$6,456**	**$1,403**	**$2,615**

In both scenarios A and B, real estate taxes increase substantially. We estimate that the county will bring in about $19 million in new real estate taxes in both scenarios. New construction in the area is likely to fall at the high end of the assessment spectrum. We typically estimate that new construction will assess higher than 90 percent of similar existing construction. Therefore, not only is new construction denser—increasing real estate revenues—but it is also more valuable than most existing facilities.

Personal and business property taxes increase significantly as new residents register their cars and from new business property. We project that this category will generate about $1.6 to $1.7 million per year for Scenarios A and B respectively. As shown in Table 2 and the Plan Langston Boulevard documentation, we expect that business space will increase significantly in both scenarios, leading to an increase in the BPOL tax of around $800,000 to $1 million. APS revenues will decrease slightly as the enrollment decreases. We project other local taxes—including the meals tax, sales tax, and many other small forms of revenue—will bring in about $2.2 million from scenarios A and B. In summary, Scenario A, were it built today, would increase revenues by a little more than $23 million, and Scenario B by a little less than $24 million.

New residents require additional spending to maintain the same level of service as before. We estimate effects on the county operating budget, the APS operating budget, and APS debt service from new school construction. *We do not estimate the cost of the infrastructure improvements such as transportation and land acquisition that are proposed in Plan Langston Boulevard*; these costs could be quite substantial.

We expect that the county operating budget—which goes toward environmental services, transit operating expenses, human services, parks and recreation, police, fire, and much more—would need to go up by about $10.1 million in Scenario A and $10.2 million in Scenario B. APS spending declines by up to $1.7 million or increases by as much as $7.8 million, depending on the SGFs used. And debt service for 20 years would increase by up to $2.3 million to support the additional enrollment under the "worst-case" scenario.

Overall, the new development generates fiscal surplus between $6.4 to $15.8 million.

Without considering the effects of the infrastructure investments needed to support the growth along Langston Boulevard, anticipated development generates additional surpluses that can be used to pay for some of the improvements. Nonetheless, the infrastructure investments may run into the hundreds of millions of dollars, which may exceed the resources generated by the additional development.

Notes and Acknowledgments

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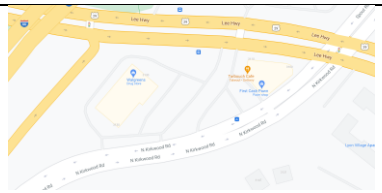
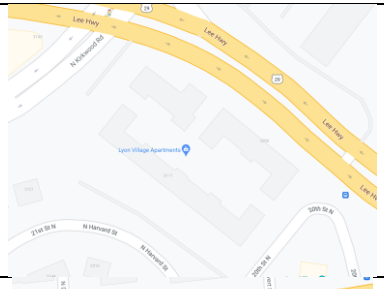
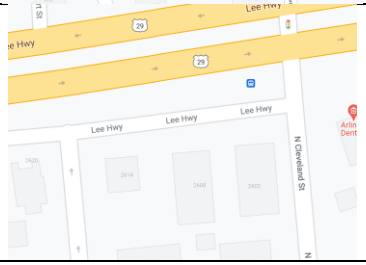
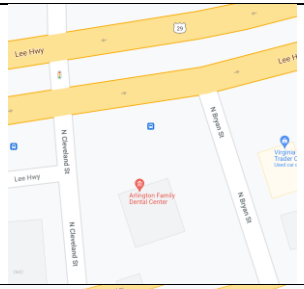
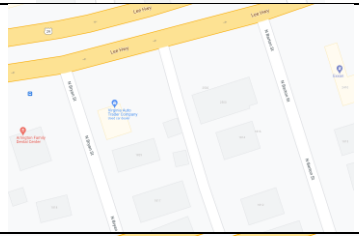
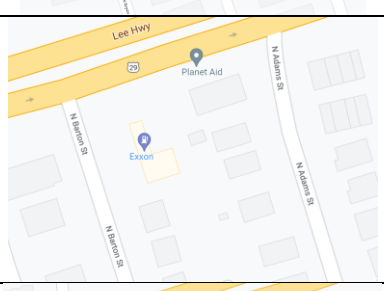
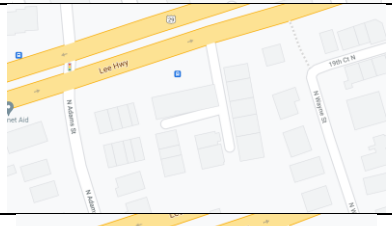
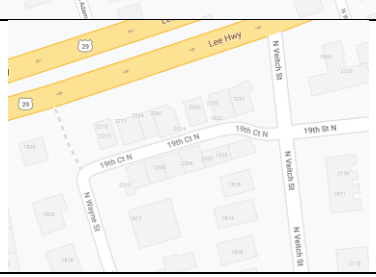
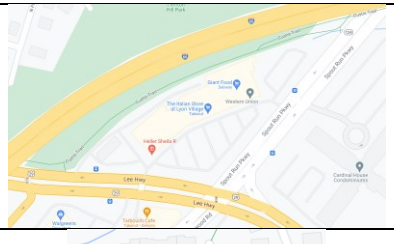
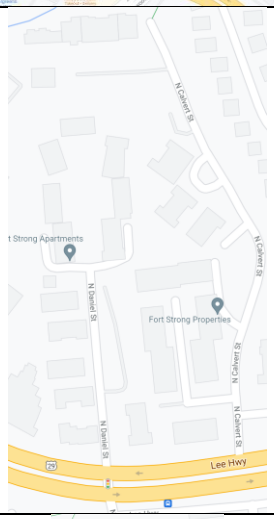
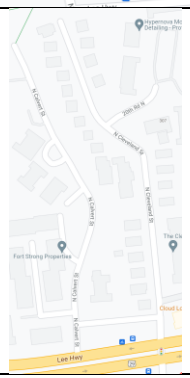
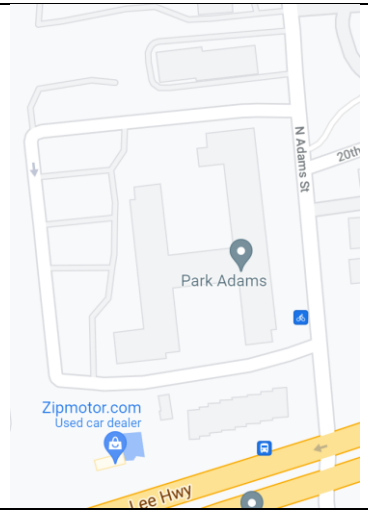
About the Author

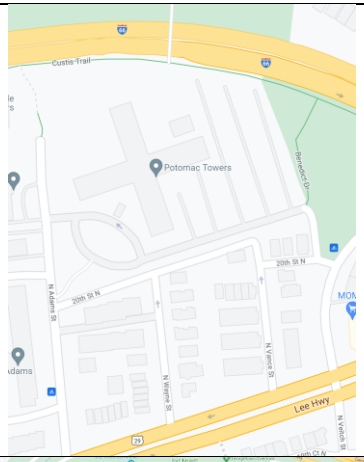
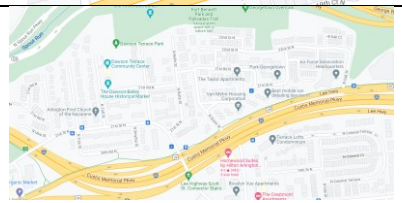
Jon Huntley: Jon Huntley has a BS in mathematics and economics from Duke University and a PhD in economics from Northwestern University. He has worked most recently at the Congressional Budget Office and is currently a Senior Economist at The Wharton School of the University of Pennsylvania.

Location	Civic Association	Map	Description (Scenarios A / B)	Units (Scenarios A / B)	Com. Floor Space (Scenarios A / B)	New Students (Scenarios A / B)	New Residents (Scenarios A / B)
Walgreens on SW corner of Langston Boulevard and N. Kirkwood Rd.	Lyon Village		A: 10-story building with about 34,000 square feet of commercial space, 127 apartment units B: 10-story building with about 34,000 square feet of commercial space, 127 apartment units	127 / 127	34,273 / 34,273	4 / 4 APS: 5 / 5	145 / 145
SE corner of Langston Boulevard and N. Kirkwood Rd.	Lyon Village		A: 6-story building with 148 apartment units B: 6-story building with 148 apartment units	148 / 148	0 / 0	4 / 4 APS: 5 / 5	218 / 218
South of Langston Boulevard, between N. Danville St. and N. Calvert St.	Lyon Village		A: 5-story building with 30 apartment units B: 5-story building with 30 apartment units	30 / 30	0 / 0	1 / 1 APS: 2 / 2	44 / 44
South of Langston Boulevard, between N. Calvert St. and N. Cleveland St.	Lyon Village		A: 5-story building with 24 apartment units B: 5-story building with 24 apartment units	24 / 24	0 / 0	1 / 1 APS: 1 / 1	35 / 35

South of Langston Boulevard, between N. Cleveland St. and N. Bryan St.	Lyon Village		A: 5-story building with 12 apartment units B: 5-story building with 12 apartment units	12 / 12	0 / 0	0 / 0 APS: 1 / 1	18 / 18
South of Langston Boulevard, between N. Bryan St. and N. Barton St.	Lyon Village		A: 5-story building with 31 apartment units B: 5-story building with 31 apartment units	31 / 31	0 / 0	1 / 1 APS: 2 / 2	46 / 46
South of Langston Boulevard, between N. Barton St. and N. Adams St.	Lyon Village		A: 5-story building with 29 apartment units B: 5-story building with 29 apartment units	29 / 29	0 / 0	1 / 1 APS: 2 / 2	43 / 43
South of Langston Boulevard, between N. Adams St. and N. Wayne St.	Lyon Village		A: 5-story building with 71 apartment units B: 5-story building with 71 apartment units	71 / 71	0 / 0	2 / 2 APS: 4 / 4	104 / 104
South of Langston Boulevard, between N. Wayne St. and N. Veitch St.	Lyon Village		A: 5-story building with 33 apartment units B: 5-story building with 33 apartment units	33 / 33	0 / 0	1 / 1 APS: 2 / 2	49 / 49

Giant Shopping Center	None		A: 15-story building with 264 apartment units, 46,000 square feet of office / commercial space A: 15-story building with 264 apartment units, 46,000 square feet of office / commercial space	264 / 264	45,800 / 45,800	8 / 8 APS: 8 / 8	388 / 388
Fort Strong Apartments (north of Langston Boulevard, west of N. Calvert St)	None		A: 8/5-story building with 489 apartment units, 82,000 square feet of office / commercial space B: 7-story buildings with 428 apartment units, 115,000 square feet of office / commercial space	489 / 428	82,472 / 115,461	14 / 12 APS: 15 / 13	719 / 629
North of Langston Boulevard, between N. Calvert St. and N. Cleveland St.	None		A: 10/5-story building with 349 apartment units, 47,000 square feet of office / commercial space B: 8/5-story building with 279 apartment units, 47,000 square feet of office / commercial space	349 / 279	47,136 / 47,136	10 / 8 APS: 10 / 8	513 / 410

South of I-66, bounded on west by parts of N. Cleveland St., bounded on south by Cleveland House, bounded on east by Park Adams	North Highlands		A: 12-story building with 359 apartment units B: 12-story building with 477 apartment units	359 / 477	0 / 0	12 / 15 APS: 11 / 14	411 / 546
North of Langston Boulevard, Burger 7 and Cloud Lounge	North Highlands		A: 5-story building with 50,000 square feet of office / commercial space, 13,000 square feet of ground floor retail B: 7-story building with 75,000 square feet of office / commercial space, 13,000 square feet of ground floor retail	0 / 0	62,788 / 87,903	0 / 0 APS: 0 / 0	0 / 0
North of Langston Boulevard; including Park Adams property, up to but not including the Adams House	North Highlands		A: 9/5-story building with 412 apartment units, 14,000 square feet of office / commercial space, 55,000 square feet of ground floor retail B: 9/7-story building with xx apartment units, 70,000 square feet of office / commercial space, 12,000 square feet of ground floor retail	412 / 350	68,868 / 81,952	13 / 11 APS: 12 / 11	472 / 401

North of Langston Boulevard, between N. Adams St. and N. Veitch St.	North Highlands		A: 9/5-story building with 805 apartment units, 79,000 square feet of office / commercial space, 20,000 square feet of ground floor retail B: 8/5-story building with 814 apartment units, 140,000 square feet of office / commercial space, 35,000 square feet of ground floor retail	805 / 814	98,566 / 175,108	26 / 26 APS: 24 / 24	922 / 932
North Highlands, north of I-66 and Langston Boulevard	North Highlands		A: 10/6-story building with 681 apartment units, 285,000 square feet of office / commercial space, 226 duplexes B: 10/6-story building with 681 apartment units, 285,000 square feet of office / commercial space, 226 duplexes	681 / 681	284,745 / 284,745	117 / 117 APS: 38 / 38	1,608 / 1,608