Residential Infill Survey Results
Preliminary Findings

OCTOBER 2019
Residential Infill Survey Results

Purpose of the Survey

In August 2019, the City of Raleigh Planning Department launched a study to gather information and make recommendations regarding the construction of new residential houses within existing neighborhoods, something known as “infill development.” The purpose of this study is to offer guidance and recommendations for possible changes to Raleigh’s Unified Development Ordinance (UDO). An important part of this study is to learn community perspectives on residential infill; this survey served as an initial step in the engagement process to achieve that goal.

Survey Administration

The survey opened on publicinput.com on August 14, 2019, and was open until 5:00 p.m. on September 30, 2019. The survey was advertised through several avenues, including GovDelivery email blasts, social media posts, and flyer distribution. Attendees at the Residential Infill Open House meeting held on September 17, 2019, were also encouraged to complete the survey, as were folks who saw coverage of the study on WRAL.

Survey Participants

There were 3,147 people that answered at least one question on the survey, resulting in 62,891 total responses from 26 total questions and 10,170 individual comments. Based on an estimate of Raleigh’s population at 465,000, this sample is statistically significant at a 95% confidence level and a margin of error at 2%.*

Given that the demographic questions were optional, some respondents did not provide their personal information. Based on self-reported demographic information, the breakdown by racial identity, age, and income are as follows:

*The confidence level is the probability that our sample accurately reflects the attitudes of the population.
The margin of error reflects the range, measured as a percentage, that our population’s responses may deviate from the sample.
How old are you?

- 41% 45-64
- 36% 30-44
- 15% 65 or older
- 7% 18-29
- 0% Younger than 18

2,162 respondents

What is your approximate annual household income?

- 53% $118,000 or more
- 14% $70,000-$93,999
- 14% $94,000-$117,999
- 13% $47,000-$69,999
- 5% $31,000-$46,999
- 3% Others

2,023 respondents
Residential Infill Survey Results

Survey Results

Do you have any concerns about residential infill development in Raleigh?

- 75% Yes
- 25% No

2,591 respondents

In general, most respondents reported being concerned regarding residential infill development in Raleigh (75% Yes to 25% No).

A review of the qualitative data reveals that these concerns fall into several categories. For some respondents, the very existence of infill development is problematic because of how it is transforming communities.

- “Building huge houses on postage stamps size lots is detrimental to the established neighbors bc of runoff, clearing of mature trees, blocking of the sun, not fitting in with the neighborhood in general…these houses look ridiculous and reduce the charm of our city and its areas.” (ellipses in original comment)
- “The rate of infill is almost unbelievable. Saying nothing about the additional strain on roads, sewage and power, it is forever changing the character of Raleigh’s neighborhoods.”
- “The traditional downtown neighborhoods are being homogenized and are losing their affordability and character. I live in a historic house—almost 100 years old. We bought the house and moved into a neighborhood of artists, teachers, recovering addicts, widows, young families, gay couples—now becoming a neighborhood of wealthy families. My friends who are renters are worried they will have to move—some already have been priced out of the neighborhoods.”
Others suggest that it isn’t infill itself that concerns them; rather, it is the type of infill development taking place (or not taking place) in Raleigh that needs to be addressed.

- “I am a supporter of greater density around certain hubs such as downtown, North Hills, etc., in the form of apartments and condos so that Raleigh can grow MODERATELY—and for better mass transit. These building can contain a certain percentage of lower priced residences. But tearing down a moderately priced home to build 2+ uber-expensive ones contributes nothing constructive to Raleigh’s community.”

- “Strongly agree [that neighborhoods should be allowed to significantly change with changing preferences and market conditions] if that means adding more dense/small/modernist/affordable housing. Strongly disagree if that means tearing down existing houses and building bigger/blander housing or McMansions.”

- “Infill should be encouraged to help combat sprawl. However, it should be carefully managed to preserve existing neighborhood characteristics in the size and scope of homes. McMansions and towering homes should be discouraged but duplexes and triplexes should be encouraged.”

- “Infill promotes affordable housing and the sustainable use of land and resources. The more we spread out, the more streets, water lines, sewer lines, etc. we need and the more impact the environment. Allowing “granny flats” and gentle density (duplexes, townhomes, etc.) in and around single-family neighborhoods can help us grow responsibly. We are going to grow, it’s just a matter of how we grow.”

Yet others express the need for more infill development, and they are concerned that overregulation will hinder it.

- “The regulations represent a gross overstep and limitation on development. They seem geared toward largely restricting development not balancing growth and neighborhood balance and structure.”

- “There’s not enough of it [infill development]. We need quads, triplexes, and duplexes. We need more incentive to create more housing in existing spaces. Reduce setback regulations on townhomes. Upzone neighborhoods. Worry less about parking, especially near transit.”

- “I have concerns about how we don’t have enough infill, that there are too many regulations [and] poor zoning rules.”
Expressing concerns about infill development was slightly more likely among black respondents than others. Seventy-six percent of white and Hispanic respondents indicated that they are concerned in some way about infill development; this is true for 80% of black respondents.

At least 60% of respondents reported being concerned with infill development regardless of age, but this concern was more evident among those 45 and older and was less so among those under 30. Specifically, 81% of respondents aged 45-64 years and 82% of those 65 or older said they had infill concerns, while this was true for only 60% of those 18-29 and 73% of those 30-44.

Categorizing respondents by income also underscores disparity in self-reported concern about infill development. Nearly 90% of respondents in households with incomes less than $31,000 per year said that they have infill-based concerns. The percentage of respondents concerned with infill drops as household income increases, with those reporting $118,000 or more in annual household income being the least concerned age group (72%).
### Residential Infill Survey Results

What potential aspects of residential infill development are of concern to you? Please rank the following from the most pressing concern to the least. If it is not a concern to you, you don't have to rank it.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Concern</th>
<th>Rank</th>
<th>Noted Concerns</th>
</tr>
</thead>
<tbody>
<tr>
<td>58%</td>
<td>Neighborhoods are becoming less affordable</td>
<td>3.11</td>
<td>1069</td>
</tr>
<tr>
<td>57%</td>
<td>Green spaces and tree canopy are being lost</td>
<td>3.11</td>
<td>1046</td>
</tr>
<tr>
<td>48%</td>
<td>Existing viable homes are being demolished</td>
<td>3.45</td>
<td>883</td>
</tr>
<tr>
<td>50%</td>
<td>Stormwater runoff impacts</td>
<td>4.05</td>
<td>910</td>
</tr>
<tr>
<td>40%</td>
<td>Houses are too big</td>
<td>4.37</td>
<td>737</td>
</tr>
<tr>
<td>39%</td>
<td>Houses are too close together</td>
<td>4.46</td>
<td>720</td>
</tr>
<tr>
<td>17%</td>
<td>Other (please specify in the comments)</td>
<td>4.70</td>
<td>318</td>
</tr>
<tr>
<td>33%</td>
<td>New houses are built on lots that are narrower than nearby lots</td>
<td>5.10</td>
<td>608</td>
</tr>
<tr>
<td>30%</td>
<td>New houses with modern designs do not have the same look or feel of nearby houses</td>
<td>5.14</td>
<td>557</td>
</tr>
<tr>
<td>33%</td>
<td>Additional homes are reducing available on-street parking and increasing traffic</td>
<td>5.44</td>
<td>599</td>
</tr>
<tr>
<td>30%</td>
<td>Houses are too tall</td>
<td>5.65</td>
<td>545</td>
</tr>
<tr>
<td>30%</td>
<td>Personal impacts (noise, light, privacy, etc.)</td>
<td>6.11</td>
<td>553</td>
</tr>
<tr>
<td>33%</td>
<td>Construction disruption and impacts</td>
<td>6.48</td>
<td>525</td>
</tr>
</tbody>
</table>

**NOTE:** The percentages noted here are based on respondents who listed any concerns at all. They are not based on the total number of respondents. For example, 58% of respondents who answered this question ranked the affordability of housing as a concern as part of their list.
Residential Infill Survey Results

Overall, the highest-ranking concerns among survey respondents were:

- Neighborhoods becoming less affordable (59%; n=1069)
- Green spaces and tree canopy are being lost (57%; n=1046)
- Existing viable homes being demolished (48%; n=883)
- Stormwater runoff impacts (50%; n=910)

Concerns that consistently ranked the lowest among respondents were:

- Construction disruption and impacts (29%; n=525)
- Personal impacts, like noise, light, and privacy (30%; n=553)
- Houses are too tall (30%; n=545)
- Additional homes are reducing on-street parking and increasing traffic (33%; n=599)

Racial analyses highlight some consistencies across racial groups: the loss of tree canopy and green spaces, the diminishing affordability of homes, and the demolition of viable houses were high-ranking concerns regardless of racial identity. The degree to which these were concerns, however, vary. Black respondents not only ranked “neighborhoods are becoming less affordable” as a concern more often than other respondents, but they were also more likely to rank it as their primary concern. 72% of black respondents who listed their concerns said that they were concerned with housing affordability, compared to 61% of whites and 60% of Hispanics. White and Hispanic respondents, though expressing concern about housing affordability, reported more concern for greenery loss and the demolition of viable homes, respectively. Moreover, there was less consensus among white and Hispanic respondents about which aspect of infill was of primary concern.

The types of common infill concerns were also disparate across age groups. Younger respondents (those aged under 45, specifically) were more likely to highlight the relative affordability of housing as problematic while older respondents (those 45 and older) were more likely to express concern about the loss of green space. Interestingly, there was more consensus among those 18-29 that housing affordability is a primary concern than there was among other groups (69% said it was a concern). In other words, respondents older than 29 were more likely to show disagreement among themselves as to what is the most concerning about infill development.

Among those making less than $31,000, the demolition of viable homes was the highest-ranking concern while the loss of housing affordability was listed as a concern more often (78% listed it as a concern compared to 68% who listed housing demolition). This means that, though the decline of housing affordability is a more wide-spread concern among this group, the demolition of existing homes is more pressing.
Residential Infill Survey Results

Those reporting annual household incomes between $31,000 and $117,999 listed housing affordability as a concern more consistently than any other concerns, but—unlike those with lower incomes—they were also more likely to rank this concern as highest on the list. For those making $118,000 or more a year, the concern shifted to the loss of green spaces and tree canopy. This group listed it more consistently as both a concern in general and as their primary concern.

In general, the majority of respondents believe that it is important for houses to fit in with the houses around them (60%). This trend holds across all racial groups with no significant difference among them.

Unlike the racial analyses, the age analyses here reveal that it is more important to older respondents that houses fit in with those around them. Specifically, 72% of respondents aged 65 and older said that fitting in was important, while this was true for only 63% of those aged 45-64 and 54% of those aged 18-44.

While we see a positive correlation between age and the belief that houses should fit in with those nearby, the opposite is true for income: as income increases, the belief that houses need to fit in wanes. Those with the highest annual household incomes are the least likely to place importance on houses fitting in (54%) while the most likely to stress the importance make less than $31,000 per year (79%).
If a characteristic isn't important, you don't have to rank it.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Characteristic</th>
<th>Rank</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>64%</td>
<td>Building Size</td>
<td>1.98</td>
<td>1052</td>
</tr>
<tr>
<td>62%</td>
<td>Distance between houses</td>
<td>2.45</td>
<td>1022</td>
</tr>
<tr>
<td>58%</td>
<td>Distance from the street</td>
<td>2.60</td>
<td>952</td>
</tr>
<tr>
<td>19%</td>
<td>Other</td>
<td>2.61</td>
<td>311</td>
</tr>
<tr>
<td>52%</td>
<td>Height</td>
<td>2.79</td>
<td>855</td>
</tr>
<tr>
<td>48%</td>
<td>Houses are too close together</td>
<td>2.82</td>
<td>796</td>
</tr>
</tbody>
</table>

NOTE: The percentages noted here are based on respondents who listed any concerns at all. They are not based on the total number of respondents.

- When asked to consider the factors that influence whether a house fits in with those nearby, respondents consistently said building size was important (64%; n=1052) and ranked it higher than other factors, on average. Of least concern for fit were building height (52%; n=855) and maintaining similar ground elevation (48%; n=796), as both were mentioned less often and ranked lower than other factors.

- Building size was among the most important characteristics for fit for respondents of all racial identities. Racial differences are more clear when considering the percentage of respondents who listed a characteristic as important for fit at all: White respondents were far more likely to say building height was important for fitting in (52%) than other groups (38-39%). Black and Hispanic respondents were more likely to mention the distance between houses as critical for fit (71% and 62%, respectively) compared to their white counterparts (59%).

- The highest-ranked fit characteristic for all age groups was building size, though younger respondents were less likely to rank it as important (55%) than older respondents (60%+).

- Building size was important for fit among all income groups as well, though those making $31,000 or less in annual household income ranked the distance between houses as nearly as important for fit. Among the least important for all groups were maintaining similar ground elevation and building height. While nearly half of respondents listed height as a characteristic important for fit, it was not ranked as highly as the other factors for any group.
While the majority of survey respondents expressed some kind of concern with infill (75%), a higher percentage acknowledged potential benefits associated with this type of development (83%).

Compared to white and Hispanic respondents, black survey-takers were less likely to say that infill development is beneficial (72% compared to 85% for whites and 87% for Hispanics).

Those younger than 65 were more likely to say there are benefits (84-86%) compared to those older than 65 (79%).

Respondents with annual household incomes $70,000 and higher were more likely (83-88%) than other respondents (63-78%) to say that there are benefits to infill development. Those with annual household incomes below $31,000 were the least likely to acknowledge benefits associated with infill (63%).
What potential benefits of residential infill development are of most interest to you? Please rank the following from the most interesting to the least. If something doesn’t interest you, you don’t have to rank it.

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
<th>Rank</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redevelopment in existing neighborhoods can minimize sprawl (city outward) and can use existing infrastructure</td>
<td>78%</td>
<td>1.49</td>
<td>1426</td>
</tr>
<tr>
<td>New homes bring new families and vibrancy to neighborhoods</td>
<td>59%</td>
<td>1.97</td>
<td>1071</td>
</tr>
<tr>
<td>Replacing older homes to provide new homes with more modern amenities</td>
<td>45%</td>
<td>2.40</td>
<td>820</td>
</tr>
<tr>
<td>Other</td>
<td>16%</td>
<td>2.66</td>
<td>284</td>
</tr>
<tr>
<td>Increased variety in home styles and type</td>
<td>42%</td>
<td>2.72</td>
<td>757</td>
</tr>
</tbody>
</table>

NOTE: The percentages noted here are based on respondents who listed any concerns at all. They are not based on the total number of respondents.

The two most commonly cited—and highest-ranking—benefits of infill are the minimization of sprawl and the potential that new homes bring new families and vibrancy to existing neighborhoods.

Although there was some disagreement across racial groups about the extent to which infill offers benefits, there was some consensus as to what benefits there are. All groups ranked the minimization of sprawl as a benefit more often than the other options; 81% of white respondents, 70% of black respondents, and 75% of Hispanic respondents acknowledged the minimization of sprawl as a potential benefit. Further, all racial groups ranked this as the primary benefit associated with infill development.

Regardless of age, respondents were more likely to say that, of all potential benefits, minimizing sprawl is the benefit of infill that interests them most (72%-80%), though this was most evident among those younger than 65.

For most income groups, those who listed benefits of infill ranked the minimization of sprawl as the most interesting benefit of all. However, this is not the case for those living in households with annual incomes less than $31,000, who said that the benefit of most interest to them is the vibrancy brought by new homes and new families in existing neighborhoods. This is not to say that lower income respondents did not recognize the minimization of sprawl as a benefit. In fact, they—just like other income groups—listed it as a benefit more often than they did the other options; they were just less likely to rank it as the most important benefit.
For the next set of survey questions, respondents were asked to indicate the degree to which they agree or disagree with a set of statements along a continuum between strongly disagree and strongly agree. There are two data points for each question: the average score reported out of 100 and the color-coded continuum chart. The closer the average score is to 100, the more strongly respondents agreed; the closer the score is to 50, the more neutral the responses; and the closer to 0, the more strongly respondents disagreed. Each tint along the continuum indicates the number of responses that fell in that spot between strongly disagree and strongly agree: the brighter the green, the more responses on that point along the continuum.

**Neighborhoods should be allowed to significantly change with changing preferences and market conditions.**

The average slider score for this question was 49/100, which indicates that the averaging of responses resulted in near neutrality. The bright green spots at the extremes of the continuum show that respondents felt strongly in both their agreement and disagreement that neighborhoods should have consistency in look and feel over time, pulling the average to neutrality.

Neighborhoods maintaining a consistent look and feel over time was more important for certain respondents, particularly those identifying as black, those over 45 years old, and those with lower incomes.

**Neighborhoods should maintain a consistent look and feel over time.**

The average slider score for this question was 57/100, leaning toward slightly agree. The brightest green spot at 'strongly agree' indicates more responses on that end than other places along the continuum. Of note, however, are also the illuminated spot around 'strongly disagree' and neutral.

White and Hispanic respondents, as well as younger respondents and those making $70,000 a year or more, were all more likely to agree with this sentiment than other survey-takers.
Residential Infill Survey Results

New housing should be similar in **overall size** to the existing houses in a neighborhood.

The average slider score for this question was 55/100, leaning toward slightly agree. Bright green spots on both sides of the continuum suggest this general score is a balance between those who strongly agree and those who strongly disagree that new housing should be consistent in overall size with houses around them with slightly more respondents on the side of agree.

White and black respondents were more likely, on average, to slightly agree with this statement, whereas Hispanic respondents were more likely to slightly disagree. The likelihood of agreeing with this sentiment increases steadily with age, with those 65 or older being the most likely to agree. Conversely, the likelihood of agreeing that houses should be similar in overall size to those nearby decreases as income goes up; this sentiment is especially strong among those making less than $31,000 in annual household income.

New housing should be similar in **height** to the existing houses in a neighborhood.

The score on this question averaged 57/100, suggesting that height is—in general—more important to respondents than size when considering the strength of respondents’ opinions. As is the case with many instances above, this score largely reflects the balance of scores at the extremes, though it is clear that more respondents agreed, even slightly, with this statement than disagreed.

White and black respondents were more likely than their Hispanic counterparts to agree that houses in a neighborhood should be of a similar height. On average, Hispanic respondents slightly disagreed with this statement. Older respondents agreed far more strongly than younger ones; the youngest respondents (aged 18-29), on average, slightly disagreed with the notion that houses should be similar in height. Support for consistent height was strongest among those making less than $118,000 in annual household income with those in the highest income group averaging a neutral score for this sentiment.
When asked if new housing should be of any size or height as long as it aligned with current regulations, respondents—on average—said ‘no.’ The average score of 45/100 indicates more general disagreement with this notion that houses be of any size or height but—again—scores at both extremes illustrate that there was no consensus on that.

In line with the overall average, white and black respondents generally disagreed with housing being of any size or height within the bounds of the code. Hispanic respondents, on the other hand, agreed with this statement to a small degree.

Younger respondents were far more likely to think new housing should be of any height or size while older respondents strongly disagreed. This was one of the polarizing topics of the survey with a 26-point difference in the average scores for those aged 18-29 (60/100) and those aged 65 or older (34/100). Except for those making $118,000 or more per year in household income (who averaged neutral), respondents disagreed moderately with this statement.

Respondents, on average, solidly agreed that current regulations should be evaluated to deal with issues of water runoff during construction (76/100). In fact, very few respondents disagreed with this sentiment at all.

This pattern held for all demographic breakdowns. That is, respondents generally agreed with evaluating regulations concerning water runoff during construction regardless of race, age, or income; agreement was most pronounced among older respondents and those with lower incomes.
Water runoff is a concern after construction so regulations should be evaluated for effectiveness.

When redeveloping residential lots in existing neighborhoods, only minor changes to the existing ground elevation should be permitted.

Averaging between the extremes, with slightly more responses for ‘strongly agree’, results in a slider score of 57/100. This means that respondents, in general, slightly agree that only minor changes to the existing ground elevation should be allowed.

Respondents from all racial categories were likely to slightly agree with this sentiment and there were no significant differences among them. Younger respondents were more accepting of changes to ground elevation than other age groups; those aged 18-29 were also the only group to disagree (albeit slightly) that only minor changes to existing ground elevation should be permitted. Higher income respondents were, on average, more neutral about elevation changes while lower income respondents were more likely to agree that only slight elevation changes should be allowed.
When redeveloping residential lots in existing neighborhoods, foundation or retaining walls should be permitted to change the ground elevation of the building site.

The average score of 49/100 (near neutrality) is the balancing of responses at the extremes.

Average scores for all respondents, regardless of race, hovered near neutral as to whether foundation or retaining walls should be permitted—the result of balancing between views on both sides. Younger respondents were significantly more likely to be accepting of the use of foundation and retaining walls (61/100) than older respondents, especially those aged 65 or older (38/100). Support for retaining or foundation wall use declines with income; those with lower incomes were less likely to agree with the sentiment than others.

It is important to preserve the existing trees on residential infill lots.

When it comes to preserving trees, there is more consensus among respondents than we see in any other part of the survey. With a score of 72/100 and the brightest green marker located at one extreme, this sentiment received the most support. Regardless of race, age, or income, respondents generally supported the preservation of trees on infill lots.

An interesting note here is that respondents from the highest income category ($118,000+ annual household income) were the most likely to say that tree canopy and green space loss was their biggest concern regarding infill development, but they were less interested in tree preservation on infill lots than other respondents.
Exceptions to current regulations (like building height) should be available in exchange for saving existing trees on an infill lot.

While there may be a degree of consensus about tree preservation, the same is not true for using exceptions to current regulations as a way to preserve them, which only leans slightly agree (57/100).

Regardless of race, respondents were—on average—neutral about allowing building exceptions for those who preserve existing trees. Younger respondents were significantly more likely to agree to the use of exceptions as a preservation mechanism than other age groups. Those with higher household incomes ($118,000 per year) were significantly more likely to agree to offering building exceptions for tree preservation than other income groups.
Survey Evaluation

This survey gave me a good opportunity to share my perspective.

- 59% Agree
- 26% Strongly Agree
- 11% Neither Agree nor Disagree
- 4% Others

2,169 respondents