

Testimony to the Portland City Council Public Hearing on Residential Infill Project Concept Report (Nov. 16, 2016)

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BACKGROUND

The Residential Infill Project Stakeholder Advisory Committee (RIPSAC) has proposed a set of new zoning conditions that would be applied to most residential areas east of the Willamette River. The proposed changes would increase the number of housing units permitted per lot. The hoped-for development of “missing middle” small multi-family housing is intended to provide home owners and renters a new supply of affordable housing, while advancing goals to increase population density to accommodate continuing in-migration.

The RIPSAC was originally created to advise City Council about possible solutions to the problem of demolitions of smaller, older existing housing units and their replacement with larger new structures. The housing torn down was modest and much more affordable than the replacements. However, developers have frequently claimed that they were simply “providing density” to address city planning goals. The RIPSAC rezoning proposal before the Council does not address demolitions, but does create new regulations for replacement buildings, encouraging them to be multi-family duplexes and triplexes, with accessory dwelling units (ADUs).

When the RIPSAC proposal was made public, I was in the process of research on the carbon emissions related to demolition, construction and ongoing energy use in older vs. newer housing. It was relatively easy to expand the scope of that work to also consider the economics of demolition and construction of proposed duplex units with ADUs, taking a critical look at affordability and density benefits and costs.

RESEARCH QUESTIONS

The purpose of the analysis was to objectively consider 3 key questions by examining publically available data.

These are:

- 1) “How affordable would envisioned housing be, and for whom, given current land, permit and construction costs?”
- 2) “How should we think analytically about ‘density benefits’ rather than simply assuming that more housing units naturally translate into larger housed populations?” “How much population density could be achieved via the rezoning strategy, and at what cost compared to other, non-demolition, alternatives?” and
- 3) “Are there possible unintended consequences of the RIPSAC rezoning in terms of community impacts?”

ANALYSIS

I performed a number of analyses to attempt to address these questions, using information on market values for recently demolished houses, along with estimates of replacement housing costs (for envisioned duplexes and ADUs), in order to estimate a range of *necessary pricing* for the new units.

I then used U.S. Census data on Portland household incomes and annual housing expenses (e.g., mortgage payments, insurance, utilities, and taxes for home owners; rents and utilities for renters) to conduct an *affordability analysis*. I was able to compare Portland incomes with total housing costs for new duplexes and ADUs to determine how many households would find them affordable (by HUD definition of 30% or less of gross annual income for total housing costs).

I then examined the cost of building and leasing rental units, using current median rental rates, to see how many households would be able to afford the envisioned units as rentals. I also modeled the costs, rents and profits estimated for the extreme case of absentee investor development of triple skinny house units plus ADUs on lots with underlying 25' lot lines, as proposed in the RIPSAC rezoning. And I drew on social science scholarship on community and displacement to speculate about possible *impacts on neighborhoods* with lower versus higher demolition house values.

Finally, I considered density question by examining the current sizes of Portland households and the mismatch between more affordable demolished units that could be adapted for larger households, versus the newer units (both currently being built and envisioned) that are, in reality, often occupied by small households. As an added bonus, I included estimates of *carbon emissions* for a range of housing types, as well as aggregate costs of alternative public policies focused on “remodel and retrofit” versus “demolish and replace.”

FINDINGS

Details of the data, assumptions, models, and analysis are not reported here, but can be shared. For present purposes, I will provide short summaries of my findings.

The High-Level Findings are:

- Given current costs and incomes, the RIPSAC rezoning will produce duplex housing that is affordable to a *surprisingly small fraction* of the population—those who have the highest incomes and the fewest current affordability problems. Over time, the size of this group will *continue to shrink*.
- ADUs show *potential* for affordability. However, 60% of the population with the lowest incomes and the greatest affordable housing needs would see no benefit.
- Rentals are *even less affordable* than owner-occupied duplexes and ADUs.
- Demographic realities mean that *density benefits are not significant* when compared to less costly non-demolition alternatives, particularly with currently permitted ADUs.
- There is an extreme overlooked scenario that combines absentee investor-owned 4-6 unit multiplexes on plots with underlying unused lot lines and R2.5 rezoning that poses a risk to the city of *self-inflicted policy damage* that would *accelerate gentrification* and *erode social capital and community*.

Affordability

Considers affordability issues and benefits for different envisioned housing types and forms of ownership.¹

(1) Ownership of Duplexes

- The envisioned duplexes are only affordable as an *ownership option* to the highest income 15-20% of the current renter population (incomes of \$75,000-\$85,000/year are required, depending on land costs and building qualities). As the cost of acquiring homes to demolish continues to increase, the income required to afford duplexes also increases—so a shrinking fraction of the population will be able to afford the units.
- U.S. Census data show that those Portland residents who are suffering most from rising rents and residential real estate prices are also those with the lowest incomes. They simply cannot afford the imagined new duplex units.
- These data also show that a very small fraction (1-2%) of households with incomes above \$75,000 have housing affordability problems.

(2) Ownership of ADUs

- ADUs *do represent a more promising housing ownership alternative* that could be affordable for purchase by a household earning around \$22/hr. ADUs would be affordable for as much as 40% of the renter population (i.e., households with incomes of at least \$45,000/year; a higher-end ADU might require as much as \$65,000). However, there are also challenges to ADU ownership, and the required condominium model is not yet well developed in Portland.

(3) Duplexes and ADUs as Rentals are Profitable Under Limited Circumstances

- At current high median *market rental rates* in Portland, the envisioned duplexes and associated ADUs could be developed as investment rental properties. A dispersed site, small duplex + ADU model could be profitable for investors under some circumstances. However, the analysis shows that profit potentials decline quickly as the cost increases to acquire houses to demolish.
- The building and operating of a duplex as a rental property is *not profitable* at current median rents if land costs are more than \$200,000 (very difficult to find in the Portland market). A duplex with an associated ADU can be modestly profitable when houses to be demolished cost \$300,000 or less—which is also a rapidly shrinking share of the residential real estate market. Most units even at that price point are located in areas with fewer services, amenities and employment opportunities.

(4) The Rental Model Provides Units that are Even Less Affordable than Ownership

- The current market rents for duplex units would be about \$2,220/month and \$1,300/month for ADUs. These may seem to be reasonable amounts, given recent rapid rise in rents. However, at these prices the duplexes are affordable only to the highest income 15% of the renter population, and the ADUs to the highest income 35%. Because of the challenges to ADU ownership mentioned above, the higher-cost ADU renter-occupied option is probably the more likely short-term arrangement, with the noted shrinking of population for which the ADU is affordable.

(5) The Rental Model Involves Greater Income Transfer

- Median market rents for these units represent a *housing cost that is at least 15-20% higher* than for *identical owner-occupied units (not factoring in the Federal interest mortgage tax deduction)*. Renters are paying the same expenses as they would if they were owners, *plus* investors' higher costs of borrowed capital, ROI on landlords' own investment, management costs, and profits. This rental model can "work" for investors (under the limited conditions described), but at the expense of higher housing costs for renters in units that are then affordable to an even smaller share of the population.
- The envisioned duplexes plus ADUs *as rental units* are, in fact, the *least affordable* housing option in the entire RIPSAC rezoning scheme. They would actually represent a new city-sponsored form of wealth transfer.

Density

- Analysis finds that renovation of existing dwellings (rather than demolishing them), and adding ADUs to those and additional sites, would achieve the same density as demolition-with-duplex+ADU-replacement—at about 15% of the total cost to the households involved.
- Population density is related to numbers of housing units. However, there is not a one-to-one correlation. The wild card is household size. Additional units, even those designed for larger households, may end up being occupied by only 1-2 people. So it is *very tricky* to try to increase population density by simply increasing housing unit density.
- Portland *household sizes* are *very small* and have been trending in that direction for decades. Current demographics would shock someone who thinks that a two adult plus two-child household is at all typical. These are the Census estimates for 2015: one person 34%, two persons 33%, three persons 15%, four persons 12%, five or more persons 6%. *One and two person households* represent the *vast majority (67%) of the population*. Four or more person households of any sort (including stereotypical "nuclear" families and other forms, with and without children) represent less than 1/5th (18%) of the population. These are the demographic realities that any housing policy must face. And they mean that, no matter how many new units are provided, *the vast majority will be occupied by very small households*.
- This means that achieving higher densities is not a simple matter of adding more units. Each additional unit is most likely to house single persons and small groups *much more expensively* and much less efficiently than was the case in the 1950s and 1960s, when many of the dwellings being demolished now were built as "family homes," that accommodated then (and could again) larger households. City policy might fruitfully focus on enabling "right size" matching of those dwellings and family households.

Environmental Cost and Benefits

- Although new construction is often claimed to be highly energy efficient (e.g., with various green certifications and modern code requirements), detailed building energy performance modeling finds that the consumption and CO2 emissions differences *are negligible* between a duplex plus ADU combination vs. a renovated existing building

with an ADU. The newly constructed buildings use only about 3% less energy than the “renovate + ADU” configuration.

- In assessing the environmental impacts from demolition and construction, we are dealing with less certain estimates (although we used the best available data bases and lifecycle carbon analysis software available). So it is the *comparison* of values and not *the absolute values* themselves that are important.
- Our demolition and new construction carbon emissions estimate is in the neighborhood of 47,000 pounds of CO2 emitted in the demo-construction process. The estimate for a major energy retrofit of an existing house is about 1,500 lbs (about 1/30th as much), and building a new ADU is estimated to produce around 12,000 pounds of CO2.

A Very Concerning Scenario

In cases of 75’ wide lots with 25’ underlying lot lines in a few parts of the city, absentee investors could conceivably build 3-unit attached skinny houses with at least one ADU through a series of permitted demolitions that could have *significant unintended consequences*.

This Business Model Requires Predatory Land Acquisition and Low Construction Costs

- To be optimally profitable, this business model requires maximizing the number of rental units on what had been a single-family home site. The RIPSAC report is ambiguous about whether the number of ADUs allowed on a 3-unit site would be one or three. If the latter, the unit density could go from one to six virtually overnight.
- The model also encourages predatory acquisition of 75’ lots that have underlying lots of record. And it encourages the construction of the cheapest units possible units, with no design review anticipated in the rezoning proposal.

Concentrating Wealth Transfer

- The rental analysis showed that investor profitability requires high market rents and significant cash flows from renters to landlord investors, and at higher total housing costs than would be the case of owner-occupied units.
- The multi-plex/narrow lot pattern concentrates and amplifies those cash flows, making this option more financially attractive to investors (including absentee investors), without increasing the supply of affordable housing. If anything, it contributes to less affordability.
- From a density benefit standpoint, there may be an opportunity to shoehorn in 1-2 additional residents on a site. But at higher environmental costs and with other possible negative neighborhood impacts.

City-sponsored Acceleration of Gentrification

- There is a long and tragic history of urban renewal in Portland that has resulted in gentrification and displacement still occurring decades later. While “renewal” policies are always claimed to be “for the greater good” by their advocates, developers and civic

elites, we should take seriously the lessons from the city's gentrification and displacement past.

- Many neighborhoods where there are already real housing problems and somewhat lower property values, would be prime targets for one-lot multiplexes (with at least four units) if underlying lot lines trigger conversion of the area to R2.5 as proposed in the RIPSAC rezoning.
- It would take relatively few mini-rental-complexes of this sort, with occupants who have the higher incomes needed to pay the much higher rents, to begin to put pressure on neighborhoods. Successful investments could spur similar investments in this scenario. With rising surrounding property values, an acceleration of gentrification is quite imaginable.
- While many neighborhoods desperately need investment and development (particularly community development and employment development), the current residents would not benefit from this other sort of multiplex "development." To the contrary, gentrification and displacement could actually be accelerated by city-sponsored rezoning policies.

Impacts on Social Capital and Community

- Not just in lower income neighborhoods, but in many neighborhoods in Southeast and North Portland, this multiplex investment pattern could have negative effects on social capital and community not even considered in the seemingly benign "missing middle" imagery. When applied to neighborhoods with underlying skinny lot lines, policy-by-imagery without rigorous analysis can create unintended social and community impacts. For example, the underlying small lot plats are historical artifacts of a time when buyers wanted the flexibility to buy 50', 75' or 100' lots (virtually none have survived as 25' lots). These would be treated as R2.5 zones, described in the RIPSAC report as "*The R2.5 zone often functions as a transition between higher intensity zones (commercial or multi-dwelling) and lower intensity single-dwelling zones.*" However, these lots are often nowhere near "higher density" areas. They occur in traditional single-family neighborhoods that are not close to neighborhood retail centers, corridors or good transit. The rezoning and requirements for multiplexes on redeveloped R2.5 lots, then, requires cars, parking, traffic, and a variety of other unconsidered knock-on effects in those neighborhoods.
- The renters who can afford these multiplex units may well be more transitory and spend less time in the neighborhood. There could certainly be many benefits to social capital of bringing in new residents with different values, new networks/connections and serving as different role models. However, if this is an investor-driven process (vs. community driven or city planning managed process), aggressive development of this housing style could result in rapid, uncontrollable neighborhood change.
- In neighborhoods with higher property values, triple skinny units plus with at least one ADU could be built through demolition of one (even a fairly expensive), single family home, creating multiple high rent properties quite rapidly—financed by absentee owners, using borrowed money and extracting future equity from renters' lease payments. Those landlords would have no stake in the neighborhood, would

communicate with their tenants through corporate property management companies, and would have little concern for the aesthetics or social impacts of their investment schemes. There would be no design review, so the cheapest possible three story, plain box 30'+ tall buildings with added ADUs could be shoe horned onto a site with no opportunity for protest. BPS would have no control. BDS would offer expedited approvals.

- Sadly, there would be little public benefit from this. But if this development pattern happened 3 or 4 times on a street and across 7 or 8 adjacent blocks over a few years, the impacts on the social fabric of neighborhoods could be substantial. Much more than neighborhood “character” is at stake. So too is the strength of supportive social networks of known neighbors who look out for each other, share histories and experiences, support one another, and sustain social bonds, networks and resilience.

POSITIVE POLICY RECOMMENDATIONS

The analyses reported above point to reasons to be concerned. But they also identify opportunities for policy innovation that can lead to positive and sustainable social, environmental and economic change.

Encourage and Expand Support for ADUs

- Although ADUs are as an affordable housing solution for only about 50% Portland households (35% if the rental option is the most likely in the short term), ADUs do represent a real, tested and proven *housing solution* with both affordability and density benefits.
- ADUs *do not require rezoning*. They are already permitted in all single-family residential zones. ADUs are also incentivized by renewed waivers of SDCs.
- ADUs represent an important form of housing for one and two person households, who otherwise might opt for larger existing or new houses. At their maximum permitted size of 800 square feet, ADUs are also completely suitable forms of housing for families (who often occupy apartments that size and smaller in outer ring suburbs).
- The proposed ADUs are *much more affordable* as an ownership option, which would be available to 50% of the renter population, with incomes around \$35,000/year. Challenges to ADU ownership have been noted and need to be squarely addressed by city bureaus and partners. If new policies are needed, they should be advanced.
- Some ADUs are being built. Many more are needed. There are likely problems to be addressed in order to more *rapidly increase* the numbers of ADUs. These include financing, landlord training/support/assistance, design and construction practices, lack of visible examples in many neighborhoods, and possible renter preferences. All of these could be fruitfully addressed by focusing the attention of city bureaus and affordable housing advocates on the problem of accelerating ADU construction.

Renovate and Retrofit, Don't Demolish

- More attention should be paid to the original mandate of the RIPSAC—assessing the harms of demolition and considering alternatives (not just changing the footprint and

number of housing units in a new structure). Analysis shows that renovation and energy retrofit is cost-effective, offers a good solution for housing more Portland residents and/or larger households, while providing environmental benefits that are as good or better than demolition and replacement.

- What would public policy look like that emphasized and facilitated renovation and retrofit? The conversation seems to be worth having now.
- There has long been considerable support for demolition and new construction because of the large profits and resource flows involved for developers, builders, investors, and city agencies. Renovation and retrofit solutions need comparable support from environmental actors, affordability advocates and Portland residents committed to sustainable solutions. Advocacy is needed for a better balance of community versus economic benefits and needs.

Create Opportunities for Families to Own Renovated Homes

- Policy could focus on how we can re-occupy homes and neighborhoods that used to shelter families and foster community. The multiple benefits of having families and children in neighborhoods—to schools, intergenerational community and voluntary institutions centered in neighborhoods—should be recognized and pursued in public policy. Demolitions, Mansions occupied by small adult households, and unplanned multiplexes do not offer positive policy pathways to realizing those benefits. It would be great if talented people like the RIPSAC members could focus energies and attention on a real “renewal” of Portland neighborhoods appropriate to the challenges we face.

Focus Expertise on Comprehensive Housing/Zoning/Environmental Policy

- The RIPSAC proposals represent a large-scale experiment in social engineering, intended to increase population density and affordability. There is little evidence that the rezoning or the new building forms envisioned would contribute very much to affordability or density. If the point of public policy is to create *actual solutions*, then social engineering is indeed called for. It would be useful, however, if actual social science knowledge about communities, urban change, policy impacts, and the effectiveness of different intervention approaches was brought to bear in working carefully and thoughtfully toward those solutions. At the end of the day, the RIPSAC process and proposals seem to be more aspirational than practical. Rezoning is a very blunt instrument and using it in these ways risks shortfall in hoped-for results, unintended costs and harms, continuing (at least not reduced) inequities, and a really short sighted “well, at least we tried something” response to serious—some would say *wicked*—but certainly not intractable problems.

Data and Analytic Tools Used

- Construction cost estimate databases and studies.
- Bureau of Development Services fee and system development charge (SDC) calculator and examples.
- Multnomah County Assessor tax records on property values for home demolished in 2013 and for new homes replacing them in 2014-15.
- Zillow.com home sales and rental price data for units within Portland city limits.
- U.S. Census of Population, public use micro data sample: Portland, OR.

References

[ACS] American Community Survey. U.S. Bureau of the Census. 2014. IPUMS household and individual public use sample data file. Downloaded from University of Minnesota IPUMS-USA. www.ipums.org

[Athena] The Athena Sustainable Materials Institute. 2014. *Impact Estimator Lifecycle Analysis Tool*. www.athenasmi.org

[BDS] City of Portland, Bureau of Development Services. 2016. *Online Fee Estimator*. www.portlandoregon.gov/bds/59194

Buildingcost.net. 2016. *Residential Construction Cost Estimator*. www.buildingcost.net.

[CAP] Portland and Multnomah County. 2015. *Climate Action Plan: Local Strategies to Address Climate Change*. Portland, OR: Bureau of Planning and Sustainability.

[HUD] U.S. Department of Housing and Urban Development. 2016. "Affordable Housing: Who Needs Affordable Housing?"
http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/

[LBNL] Lawrence Berkeley National Laboratory. 2016. *Home Energy Saver* (software package produced and maintained by LBNL for the U.S. Department of Energy). www.hespro.lbl.gov

[NAHB] National Association of Homebuilders. 2016. *The Cost of Constructing a Home*. <https://www.nahbclassic.org/generic.aspx?genericContentID=248306>

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APPENDIX TABLE 1

Portland Renter Incomes and % of Income Spent for Housing

Household Annual Income	Percent of Income Spent on Housing						Total
	A 10% and less	B 10-20%	C 20-30%	D 30-40%	E 40-50%	F More than 50%	
\$ 0-10K	2%	1%	4%	5%	4%	15%	5%
\$ 10-20k	4%	3%	8%	11%	25%	47%	16%
\$ 20-30k	3%	3%	9%	23%	31%	23%	14%
\$ 30-40k	5%	5%	16%	24%	17%	9%	13%
\$ 40-50k	2%	8%	17%	13%	12%	3%	10%
\$ 50-60k	4%	10%	12%	9%	5%	2%	8%
\$ 60-75k	7%	17%	13%	8%	5%	1%	10%
\$ 75-100k	10%	22%	11%	4%	1%	0.3%	10%
\$ 100-150k	23%	20%	7%	3%	0.2%		8%
\$ 150-200k	13%	7%	2%	0.4%			3%
\$ GT 200k	29%	5%	0.2%				3%
<i>Total</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>	<i>100%</i>

APPENDIX TABLE 2

Portland Household Sizes (ACS 2014)

	Renter occupied:	Owner occupied:	Combined
1 person	52,317 45%	34,931 25%	87,248 34%
2 persons	36,250 31%	47,053 34%	83,303 33%
3 persons	12,807 11%	24,220 18%	37,027 15%
4 persons	9,060 8%	20,152 15%	29,212 12%
5 persons	4,272 4%	6,687 5%	10,959 4%
6+ persons	2,114 2%	3,957 3%	6,071 2%
Totals:	116,820 46%	137,000 54%	253,820 100%

NOTES ON METHODOLOGY AND CAVEATS ABOUT ANALYSIS AND CONCLUSIONS

The analysis reported here used data on land values from current real estate listings. Replacement building construction costs were obtained from building industry cost estimation software as well as published sources and recent builders surveys by the National Association of Home Builders. These estimates are, by their very nature, imprecise since they depend on costs for materials, labor, fixtures, finishes, and a range of construction “soft costs” that are proprietary information closely held by builders. Every effort was made, therefore, to use the most conservative estimates of construction costs. Permit fee costs and system development charges (the latter currently waived for ADUs and not used in ADU-related calculations) were estimated using the Bureau of Development Services cost calculator and published examples. Interest rates were obtained from published sources, and for commercial loans for rental construction from consultation with local lenders. Mortgage costs were calculated with standard spreadsheet functions (checked against online commercial estimators). Taxes were estimated from samples of actual new residential units in Assessor records and Portland Maps. Utility costs were estimated by reference to building energy simulation modeling performed for prior work. Median rents and rental rates per square foot were obtained from Zillow current reports. Income and household size information was obtained from the U.S. Census, American Community Survey for the area within the city limits of Portland for 2014 (the most recent sample available when the analysis was performed)

The purpose of the analysis was not to provide precise estimates, but values that could be compared (apples to apples) to realistically approximate economic and demographic realities using the best publically available information.

A number of factors that we could not measure or approximate with any confidence included some that might work to reduce estimates of ownership costs a bit (e.g., the Federal mortgage interest tax deduction) and would make the owner vs. renter cost differentials even larger than we reported (i.e., renter costs would be even higher in comparison). Other omitted factors work in the opposite direction—increasing the real world costs of new construction for both owner-occupied and rental unit cases. Again, we don’t know the precise magnitudes of these values. But taken together they mean that our estimates of total costs are clearly too low. These sorts of costs include: asbestos removal costs, demolition costs, site preparation costs, construction financing, and realtors’ fees. The costs of materials, fixtures and finishes have a dramatic effect on construction costs (30% of total for these costs according to the NAHB study). We assumed only minimum quality that is almost certainly exceeded in much new construction in the city. Also, we modeled the duplex units as single family homes in the given maximum volume allowed by the rezoning proposal (2500 sq ft above grade, with 15% density bonus if an ADU is included). Therefore, we did not estimate the additional cost (in the duplex case) of two kitchens, multiple baths, duplicated HVAC systems, wiring, plumbing or appliances. So we are confident that our total construction cost estimates used to compare costs to incomes are systematically *lower* than in the real world. This means that affordability estimates reported here are most likely very conservative. For example, if we estimate that 20% of the population might find option A, B or C affordable by HUD standards, in the real world that value might actually turn out to be 15% or even 10%.

For simplicity, we do report results for modeling triplex owned or rented units. In the rental case, these smaller units would occupy the same volume in the building as would duplex units and would not change the profitability calculus of the investor. Rents would be similar to ADU rents (close in size). As ownership options, their affordability would be a little less than ADUs. But we assume that the triplex option, being more costly to build than duplexes (triple kitchens, baths, etc.) and only on corner lots, would likely be much rarer than duplexes.