Residential Zoning Deregulation in Fort Collins

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Abstract

Many cities across the country have recently experienced rapid increases in average home prices, and Fort Collins is no exception. A shortage in the supply of housing within the city may be to blame, as the failure to meet the increasing demand causes a corresponding increase in housing prices. Fort Collins has nearly doubled in population since the 1990s, and it is highly likely that this upward trend will only continue in the foreseeable future. The current supply of housing (or lack thereof) is going to become an increasingly greater issue for those seeking to live within the city limits. We have framed our analysis to examine how residential zoning is a possible reason why the supply of housing may be unnecessarily restricted, and how deregulating zoning laws would stimulate more construction and allow housing prices to become more affordable to the average household. Residential zoning is implemented in a city to regulate development, so that a city can maintain its livability and sustainability. However, it can often end up making construction of residential housing and/or industrial buildings more difficult, by implementing more “red tape” and restricting permits. Excessive limitations, including minimum lot sizes, height limits, and lengthy permit processes upon new constructions, can greatly hinder development on available land. Houston is a great example of a city that does not have residential zoning regulations yet still manages to maintain a livable and cohesive cityscape with the additional bonus of affordable housing. By using Houston as a model for how deregulation of zoning laws should--and can--work, we can implement a policy in Fort Collins that regulates development without unnecessarily restricting it.

Section I:
Residential Zoning Deregulation

Residential zoning has been an integral part of the Fort Collins housing market since 1997, and it has helped the city regulate construction and maintain a cohesive city structure. Zoning helps regulate the market by protecting it from negative externalities caused by incompatible land use. However, Fort Collins has experienced a population increase of about 60,000 people since these zoning laws were first enacted, resulting in a natural increase in demand for housing; meanwhile, the housing supply has remained relatively restricted and the cost of housing has risen disproportionately. Zoning restrictions—including minimum lot sizes, off-street parking requirements, height limitations, prohibitions on multifamily housing, or lengthy permitting processes—are supply constraints. This makes it significantly more difficult, or at least more inconvenient, to use land for a reasonable purpose other than what is explicitly outlined in the Fort Collins Land Use Code. In Fort Collins, and across America, the difference between the sales price of land and the cost of building in areas with zoning regulations has increased significantly—from 33% in the 1990s to 56% in 2013. Therefore, Fort Collins should eliminate low- and medium-density residential zoning restrictions and replace these regulations with a more effective and efficient regulation process.

Residential zoning regulations are generally supported (at least in part) by wealthier homeowners, who value their property as an investment asset and aim to preserve the value of their land. Those who own homes with the highest property values are most likely to support the more restrictive zoning policies, suggesting that they are trying to raise the value of their property—and therefore increase their wealth—without any additional expense to them. Consequently, housing supply tends to suffer, prices rise, and additional construction becomes more difficult to initiate. This can trigger a chain reaction: as housing prices rise, lower-income
households are pushed out of the housing market, and highly zoned, more expensive areas become more attractive to wealthier buyers. In this scenario, housing supply remains constricted but the demand remains constant (or even shifts right), exerting more upward pressure on prices. This cycle has been evidenced in the Fort Collins housing market—vacancy rates are around 1.92% as of 2015, more than three times less than the national vacancy rate. Additionally, median housing prices have risen 6.3% in the last year, and are only expected to increase in the future.

Fort Collins’ economy is largely dependent on Colorado State University, as over 31,000 undergraduate and graduate students are currently enrolled on-campus and therefore require housing, either on or near campus. Since 80% of these students are from outside of Fort Collins, these students are presumably looking to rent for a reasonable price and cannot afford to pay the increasingly higher costs due to more stringent residential zoning regulations. Deregulation of residential zoning would consequently nullify the “U+2” law in Fort Collins, which was originally implemented in the 1960s to manage the influx of migrant workers because of the sugar beet industry. Today, it has transformed into an ordinance that is widely criticized for preventing CSU students from forming efficient living arrangements in houses, as 70% of all U+2 violations are by CSU or Front Range Community College students. A frequently voiced concern about eliminating the “U+2” law by the community is that it might result in disruptive behavior by university students; however, students would still be held to the same noise laws as the rest of the community, the only difference would be that now, homes could be fully inhabited with a reasonable number of individuals, whether or not they are legally related. This is important as it increases the supply of available beds in the housing market; now, if there is a
four-bedroom home rented by non-related individuals, there can be four people living in the home instead of three.

The primary market affected by deregulation of residential zoning would be the housing market, since removing restrictions on housing (and general) construction and development would shift the supply curve up. There are also secondary markets that would be affected by this deregulation--for instance, the labor market would likely see an increase as housing becomes more affordable and more people move into the city. This increase in Fort Collins’ population would also realistically lead to greater consumption within the city, causing a multiplier effect that would positively impact the local businesses and economy.

It is important to emphasize we are not proposing a complete elimination of regulations entirely; instead, we are discussing how replacing residential zoning regulations with a more concise, streamlined, and reasonable approval process would be beneficial for the City of Fort Collins. Currently, the Fort Collins Land Use Code is extremely detailed and nuanced, to the extent of being unnecessarily restrictive. We can implement a better policy that serves the essential purpose of zoning laws and preserves the integrity of the city’s infrastructure rather than maintaining the status quo, and using zoning laws as tools of exclusion. The new set of regulations would still keep residential and commercial zones reasonably separated, without preventing growth where it could be possible and profitable. It would also continue to protect natural and community areas, as well as Old Town (where residential buildings are prohibited), which we believe is integral to maintaining the character of Fort Collins.

Section II:

Categorization of Benefits and Costs and Theoretical Modeling
The policy of zoning de-regulation will undoubtedly have an impact on the primary and secondary markets mentioned above. These impacts must be broken down into benefits and costs in order to gauge if this policy will benefit the community more than it will cost it, or vice versa. The following table displays various effects of housing deregulation, and categorizes them depending on whether or not they are considered a benefit or a cost.

**Benefits and Costs Table**

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
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<tbody>
<tr>
<td>1) Lower Cost of Housing*</td>
<td>1) Lower Property Values*</td>
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<td>2) Increased Consumption</td>
<td>2) Increased Parking and Traffic Issues</td>
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<td>4) Increased Property Taxes</td>
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<td>5) Smaller Housing Bubbles</td>
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*These benefits and costs are essentially the same; however, they affect different populations

**Benefits**

1) Lower Cost of Housing:

   The main goal of this policy is to decrease the cost of housing by increasing the supply; therefore, this benefit is central to this Cost-Benefit Analysis. The main goal of this effect is to allow more people who currently live in Fort Collins to be able to afford to purchase the house they live in, to allow workers who currently commute to work into Fort Collins from surrounding towns to be able to purchase a house to live in Fort Collins, and to lower the overall cost of living. According to the Fort Collins Board of Realtors, the average price of a single- and
multi-family homes in 2016 was about $396,414 and $263,708, respectively, while the median annual income for a household was about $73,500. If a household with excellent credit were to purchase a house of average price ($396,414) with a 10% down payment and a 30-year fixed mortgage, their annual payments would be close to 35% of the average annual income.

2) Increased Consumption:

The increased supply of housing as a result of this policy will naturally lead to a higher population living within Fort Collins’ city limits. The increased number of residents will impact the economy of Fort Collins through their consumption, which will be further amplified by the multiplier effect. As they spend money on Fort Collins’ businesses, the money will be “reused” within the community, resulting in a greater final purchasing power for the dollar than it would have if it were just spend once within the Fort Collins’ city economy.

3) Shorter Commute Times:

The labor market of Fort Collins is currently made up by a large number of workers who commute to work, while living outside of Fort Collins in cities such as Loveland or Timnath. As a result, more of these workers will now be able to afford living within Fort Collins. This means that these people will have shorter commutes than before, and therefore will be spending less time on the road, alleviating congestion into Fort Collins. Furthermore, shorter commute times will result in less carbon emissions, since the driving time to and from work would be measurably shortened.

4) Increased Property Taxes:
Deregulation of residential zoning law will inevitably result in the construction of many more multi-family housing units. While they may have a lower price for a single unit in the form of rent, the property itself will be worth more, and therefore the city of Fort Collins will receive more taxes through the local property tax. In addition, more individuals paying relatively less property taxes will likely result in a greater net benefit for the City of Fort Collins, as they are collecting property taxes from a greater number of households.

5) Smaller Housing Bubbles:

According to a paper by the National Bureau of Economic Research, housing markets with highly inelastic supplies, such as Fort Collins', are prone to larger bubbles in housing prices; additionally, these episodes of elevated prices last longer. Given the steep upward trend in housing prices in Fort Collins, it is not unreasonable to assume that this market's prices are inflated beyond their true value, and this policy can help mitigate this problem as well as implement a more realistic price for the property.

Costs

1) Lower Property Values:

As described in the benefits section, this policy's primary effect is on the cost of housing; however, a decrease in the cost of housing also means a decrease in property values. Therefore, people who currently own houses in Fort Collins will experience a depreciation of their property
value as the supply of housing increases and the price of housing decreases. This specific effect will, of course, have different effects depending on whether or not people own the house they live in. In Fort Collins, 53% of residents are categorized as homeowners, and this group will be negatively impacted by residential zoning deregulation since the value of their property will decrease. The proportion of renters within Fort Collins, which is currently 47%, is growing according to recent trends, and they are the ones who will benefit most from the lower housing prices.

2) Increased Parking and Traffic Issues:

Increasing the supply of housing will inevitably increase the population of Fort Collins, leading to possible congestion issues within the city. Also, an increased number of multi-family housing units will strain parking on streets near these units. Streets like Harmony and College, as well as areas such as Old Town will likely experience heavier traffic during peak hours. The value lost by the additional time necessary to transit from one location to another will be measured differently, depending on the individual in question. The Trade-Off Method can be used to monetize the value of time (saved) by considering the opportunity cost of a given individual’s additional hour of work in terms of their wage.

3) Increased Strain on Local Resources:

Again, with the projected increase of residents in Fort Collins following the deregulation of residential zoning, there will be more enrollment in (public) schools, more use of utilities, and increased necessity of first responders including policemen and firefighters. This additional use of resources will be somewhat offset by the increased tax revenue brought into the city by new
citizens; however, investment in each of these areas will have to occur to compensate for the increased population.

Other  
(Non-monetized)

1) Environmental Effects:

While the effects of residential zoning deregulation in the housing market does not affect the environment directly, it does affect the environment tangentially. For instance, people with shorter commute times have a smaller environmental impact in the form of less CO2 being emitted into the atmosphere. The average passenger vehicle emits 411 grams of CO2 per mile; therefore, an individual commuting from Loveland could be driving approximately 20 miles less per day from the commute alone by living in Fort Collins, and save up to 2000 kilograms of CO2 emissions per year (assuming 5-day work weeks and 50 work weeks per year). However, this policy does not exclusively result in benefits as it relates to the environment. Houston is an example of an large urban city where residential zoning has never been implemented, and has experienced great success creating a highly livable, relatively cohesive environment. After Hurricane Harvey, however, many pointed out that much of the extreme flooding was exacerbated by the large amount of pavement in the city, which may have been a result of a lack of zoning regulation. While this example may not be directly relevant to Fort Collins, it is still important to account for any potential side effects that could have negative consequences.

Modeling
There are multiple possible avenues in order to monetize benefits and costs. The primary effect that requires monetization is the effect of residential zoning deregulation on the housing market. We opted against a survey-based valuation process primarily because inaccurate or unreasonable responses were highly likely. For example, it would be difficult for an individual to correctly gauge their willingness-to-pay to preserve residential zoning, or to eliminate the U+2 law. Many respondents could give extremely radical answers because of the strong emotions they may have regarding zoning laws (and potential lack thereof).

Instead, we decided to obtain the elasticities of supply and demand within the Fort Collins housing market in order to create a graphical representation of the market. There were multiple steps to this process. First, we obtained elasticities from research on a number of proxy cities that had similar characteristics Fort Collins, specifically in terms of developable land, demographics and growth. The elasticities that modeled Fort Collins the best gave us a supply elasticity of 0.67 and a demand elasticity of -0.77. Using these elasticities, as well as statistical data for Fort Collins, we then created an approximate representation of the market. After the market was projected, we then used data from proxy cities that have implemented the policy and deregulated residential zoning, such as Houston, to get an idea of how much upward pressure zoning regulations placed on prices. Using this information, we were able to gauge the effect of deregulation and see exactly how much new housing stock will be created and how much housing prices will decrease.

In order to gauge the impacts on secondary markets, we determined how many more people will enter Fort Collins as a result of residential zoning deregulation, which can be done by observing how much the housing stock increases by, and multiplying that by the average number of people per house (2.3 according to the City of Fort Collins). This will give us
the impact on the economy of Fort Collins as a whole. Furthermore, to gauge the impact on the labor force, that number simply has to be multiplied by the labor participation rate within Fort Collins (68.9%, according to the City of Fort Collins). When it comes to the labor force specifically, it is important to remember that many of the people moving into the city as a result of this policy may already work in Fort Collins.

Furthermore, the nature of this policy means that many different populations will gain vastly different amounts of benefit, and some small groups may incur a cost. Therefore, each of the following monetization of benefits will specifically mention which populations are relevant to the respective benefit.

Section III:

Monetization of Benefits

As described above, the method of monetization involves creating a projection of the current Fort Collins housing market, and then using data from Fort Collins itself and proxy cities, project the effects of the policy. The following list includes the monetization of each specific benefit.

1) Lower Cost of Housing:
The following two graphs display the Fort Collins housing market as it is currently, and the specific effects of this policy, respectively. As shown in the second graph, deregulation of residential zoning will shift supply outward, decreasing the price of housing by 2.5%. This leads to an increase in housing stock of 865 units and decrease in median price of $6,000. This translates to a $5.19 million benefit for certain groups within Fort Collins such as current renters buying houses, current commuters buying houses, and new migrants to Fort Collins.

This benefit also should – in theory reduce the average rent within the city as well, benefiting the 47% of citizens who rent within Fort Collins. Using the current price-to-rent ratio of 25 within Fort Collins, we can calculate how much average rents should drop based off of the $6,000 dollar drop in median house price. According to this calculation, average rent would drop to $1,180 per month. While this is only a twenty dollar drop, when projected to the yearly level, and all renters within Fort Collins are taken into account, the total benefit adds up. Approximately 32,084 of the housing units within Fort Collins are occupied by renters, and using an average of 2.3 people per unit, we can project that there are 73,794 renters within Fort Collins. In all, the drop in rent by $240 dollars annually translates to a total benefit to renters of approximately $17.7 million dollars.

Of course, these benefits are only benefits for each specified constituency, and the costs of this drop in price will be elaborated on in the cost section.
This graph displays the Fort Collins housing market, as it is right now.

This policy will cause supply to shift from the orange line to the grey line

2) Increased Consumption:
Increased consumption within the City of Fort Collins includes increased spending in Old Town, increased use of commercial services, generally more money within the economy of Fort Collins. In order to gauge this benefit, we must firstly gauge the number of people migrating to the city as a result of this policy, then we must obtain a multiplier to accurately gauge the impact of these migrants.

So, using the City of Fort Collins estimate of 2.3 people per housing unit, and given that we have proven above that this policy will increase the housing stock by 865 units, we can see that this policy will bring in approximately 1989.5 people. However, not all of those individuals will work, as some of them will be children or retired senior citizens. Assuming, then, that about 1,326 people who move to Fort Collins will be included in the labor force and with Fort Collins’ unemployment rate of 1.9%, only around 26 of them will be unemployed. Assuming an average wage consistent with Fort Collins current average salary, which is $55,647, $72,341,100 in additional wages will now be paid out to residents of Fort Collins. Assuming an extremely conservative multiplier of 1.2, this becomes further amplified to $86,809,320 in total impact. While this number may seem large at first, it is important to remember that the City of Fort Collins has a GDP of around $16 billion.

These immigrants will not be lacking for jobs. Currently, the unemployment rate for Larimer County as a whole is 1.9%, a number which breaks records for how low it is, with many companies failing to meet their workforce demands. This benefit of $86,809,320 that will be infused into the City is by far one of the larger benefits of this policy, and will have beneficial impacts across Fort Collins commercial sector, and in other areas as well.

3) Shorter Commute Times:
As discussed above, many of the people who will take advantage of these lowered prices are people who already work in Fort Collins, but live in other areas. The official population of Fort Collins is 163,076, but the Fort Collins daytime population is 173,960. If we account for the fact that some of those individuals will be non-working children or retired senior citizens, and we consider the 1.9% unemployment rate, we can estimate that the approximate number of employees represented in the labor force living in Fort Collins equals 1,300 people. If a ten minute shorter commute time results in $6.94 saved in gas per week, that would result in a total annual benefit of $469,144.

4) Increased Property Taxes:

Fort Collins has an average property tax rate of .655%. Assuming the new average house price of $354,000, and an increase of 865 housing units, we can project a $2,005,675 increase in property tax revenue for the city.

5) Potentially Smaller Housing Bubbles:

This benefit is extremely unique in the sense that it is extremely difficult – if not impossible to monetize as firstly, it is difficult to empirically prove if there is a “bubble” in a market. Even if there is, there is the possibility that the “bubble” will simply evaporate without popping, proving that there in fact was a bubble in the first place. Nonetheless, this benefit has been found in multiple different studies on zoning and housing market, most notably both by Dr. Furman, former Chairman of the Council of Economic Advisers, and in a paper, “Housing Supply and Bubbles” by Gyourko, Glaeser, and Saiz in 2008.
Section IV:
Monetization of Costs

1) Lower Home Value:

As described above, this policy will lower the average value of a house in Fort Collins by around $6,000. This will be by far the largest cost of this policy, as this will affect the entirety of homeowners in Fort Collins. Firstly, we know 53% of the 68,265 housing units in Fort Collins are owned by residents. This means 36,180 units relevant to our constituency will decrease in value. The average drop in values related to this policy is $6,000, so for the 36,180 relevant units, there is a total cost of $217,082,700.

2) Increased Parking and Traffic Issues:

With this increased population, there will come potential parking issues and congestion within the city. However, as described in the benefits section, there will be a drop in average commute times so cars will be on the road for a shorter period of time. Parking is where the major cost of this section lays, as there will be more people attempting to park in a smaller area. If the average annual income in Fort Collins is $55,647 ($26.75/hour), that would result in an annual cost of $2,897.92.

3) Increased Strain on Local Resources

With the increase in population within Fort Collins’ city limits, there will be a reasonable increase in demand for local resources, including water, waste, and services such as law enforcement or firefighters. According to a 1992 study, cities with a density level similar to Fort
Collins result in a ratio of tax income-to-projected costs on the city of 1.17. Therefore, using the projected $2,005,675 increase in property tax revenue, we can expect an annual cost of $2,340,000 for the city.

Section V: Policy Recommendations

For the city of Fort Collins to increase the supply of housing while at the same time driving down prices, the policy recommended would involve deregulating residential zoning. Current zoning laws are currently impeding the process of increasing supply, by imposing limitations and high costs to those who are considering development. Deregulation would scale back these limitations, by allowing for more construction to take place without having to go through lengthy processes. The result would be an increase in the supply of housing that would allow for lowered prices and property values in the housing market. Further, with these newly deregulated zones, current buildings can be repurposed into mixed-use communities as well as other properties also in a much more easier and timely manner. While there is deregulation, that doesn’t mean buildings could just be built anywhere for any reason—the community would implement alternative regulation policies that maintain cohesive construction, while also allowing for a reasonable extension in land use. As seen in Houston, this policy is capable of great success, both for the city and for its residents. As shown in the monetizations, the costs outweigh the benefits in the first year; however, we can see that with the continued implementation of the policy, the total monetary benefits will exceed the costs by the third year, including the large, one-time cost in the outset of the policy.
It is important to realize that we do understand the housing market will likely not stagnate at a lower price forever. Most certainly, the upward trend in housing prices will continue years after residential zoning deregulation is enacted within the City of Fort Collins. However, our goal is to temporarily stunt the upward trend in prices in the present day, to reduce the starting point at which prices begin to increase once again. For example, a 2% increase in housing prices would be much more manageable when a home costs six thousand dollars less.

We briefly mentioned before that deregulation of residential zoning would result in the dissolution of the “U+2” law that is an inconvenience for hundreds of people, especially CSU students. We imagine that this is a collateral effect of the main policy, not necessarily a separate policy; however, it’s possible that we are underestimating the number of units available because many existing homes may not be inhabited to full capacity. Realistically, there are probably a high percentage of these homes that are being inhabited (illegally) by more than three unrelated individuals, and are just hoping that they do not get caught.

**Final Benefits and Costs**

As this policy change will take effect over multiple years, we will have to discount future benefits at a standard rate of 3.5%. All costs and benefits from year 2 on have been discounted.

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>COSTS</th>
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<tbody>
<tr>
<td>Lowered Cost of Rent (Annual) $17,710,560</td>
<td>Lower Property Value $217,082,700</td>
</tr>
<tr>
<td>Savings for New Home Buyers $5,190,000</td>
<td>Increased Parking/Traffic (Annual) $2,897.92</td>
</tr>
<tr>
<td>Consumption in Economy (Annual) $86,809,320</td>
<td>Increased Strain on Local Resources (Annual) $2,340,000</td>
</tr>
<tr>
<td>Shorter Commute Times (Annual) $469,144</td>
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Increased Net Property Tax (Annual)  
$2,005,675

Smaller Housing Bubbles

**TOTAL BENEFITS: $112,184,699**  
**TOTAL COSTS: $222,170,898**

Net Benefits year 1 = $112,184,699 - $222,170,898

Net Benefits year 1 = - $109,986,199

Net Benefits year 2 = $99,880,696 - $2,187,120.27

Net Benefits year 2 = $97,693,575.73

Total Benefits year 3 = $294,190,347.56 - $204,611,740.20

Total Benefits year 3 = $89,578,607.36

As evidenced by the calculations, the monetary costs outweigh the monetary benefits, *but only for the first year*. The main source of costs is a one time occurrence, whereas many of the benefits are recurring annually. Therefore, in the second year net benefits become positive, and in the third year, total benefits outweigh the total costs, considering the benefits and costs of all three years.

**Robustness Check**

This policy will have a myriad of effects, the largest of which are accounted for above. However, other effects may alter the outcome of this policy, and these potential effects are examined in this section. Firstly, the effect of lowered house prices may increase demand for housing as a secondary effect. This was not included in the CBA as we believed the market projection created above integrates this effect, however it may not and would decrease the benefits of our policy. The political aspects of this policy also have been discussed, however we
feel it is not in the scope of this CBA to also cover the politics of this. The supply of land is another concern, as our measure of supply elasticity is based off the current supply of land, which may change over the course of the implementation of this policy. It is difficult to determine how many new units will be built on previously unused land versus in multi-family units. This may also decrease the benefits of our policy.
References:


Appendices