



# Ames City Planning Council



Single Family vs. Alternative  
Affordable Housing Development



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# Background

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- The city of Ames is planning the development of more affordable housing units on State Avenue
  - About 7 acres of land
- Ongoing debate about what type of housing to build
- In October, city pushed a few proposals for voting and approval

Sources: [Ames residents speak out against multi-family housing on State Avenue at open house](#)  
[Debate focuses on quantity versus quality before Ames council selects low-income housing developer](#)  
[Ames City Council urged to select developer Tuesday for State Avenue affordable housing](#)

# City Council: Exploring Two Options

— *“One of the major reasons why both of the families prefer single family housing over multi-family is because of their consistent observations of renters not caring for their property.”*

Residents want single units because:

- Renters don't take care of multi-family units
- Negative externalities for neighborhood and property value

But the City Council will continue to explore all options...

- Multi-family homes

Do single family homes retain more value than multi-family homes?

# How much do alternative housing options affect the price of a house?

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Use a linear regression model to estimate the price of a house

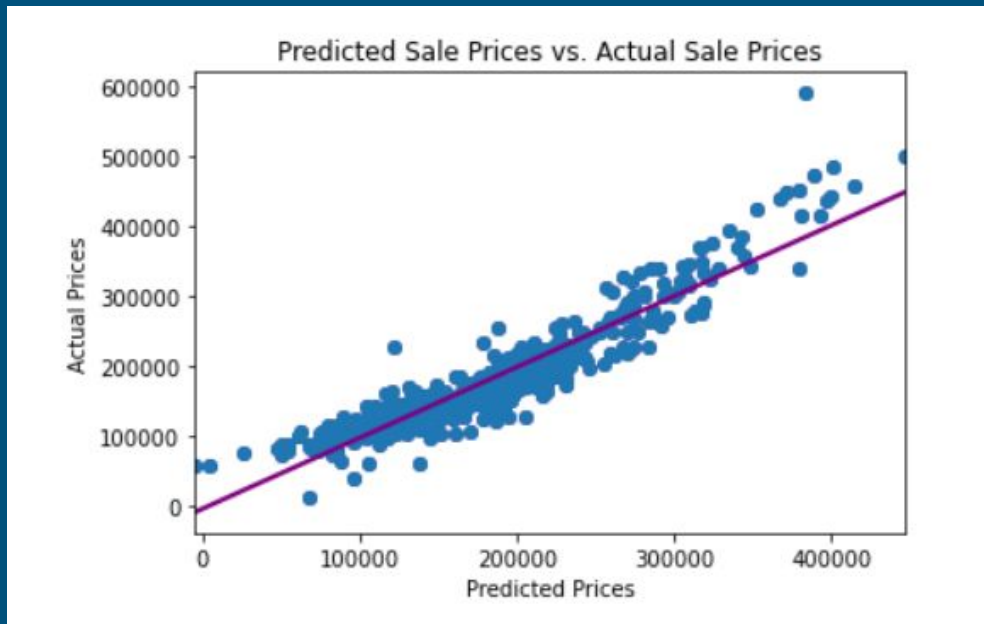
Data includes 82 variables and 2930 observations about Ames housing from 2006-2010

Model best predictors of house prices.

Add 'Building Type' variables for alternative options, not single family.

Determine the effect of alternative options on the value of a house. Is it more positive?

# Linear Regression: Predictors of Sale Price



R-squared = 87%

Model accounts for 87% of the variability in the sale price of a house in Ames.

RMSE = 27,583

The average error in our prediction is about \$27K from the actual value in our observed data.

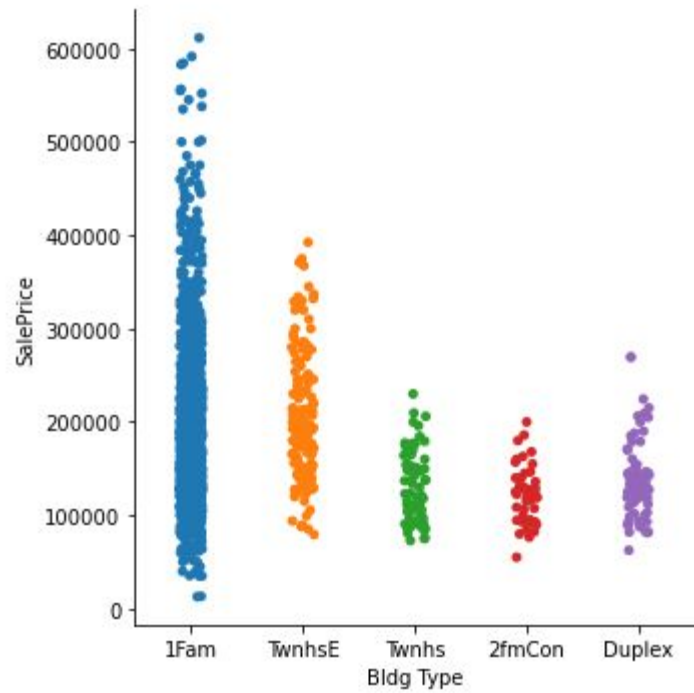
# Add Building Type to Model

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Building Type Variables:

1. Single family (single family)
2. Two-family conversion (originally built as single family house)
3. Duplex (multi)
4. Townhouse End Unit (technically single, could be multi)
5. Townhouse Inside Unit (technically single, could be multi)

I'm only going to model 2-5.



# Which building type adds more value to sale price?

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We use our single family house variable as the reference.

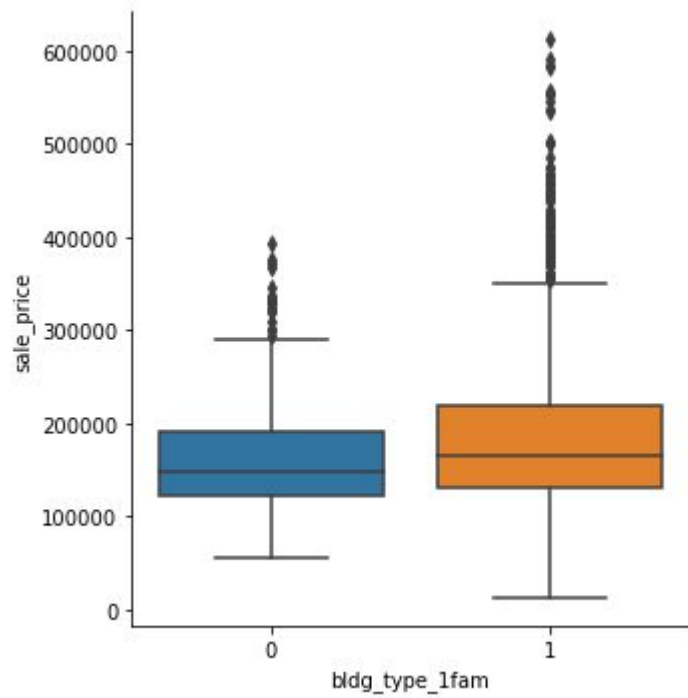
Interpretation:

- Holding the other variables constant, we can expect the sale price of a Alternative Housing Option to be **approx. \$6K less** than a single family home, on average.

bldg_type_2fmcon	-1963.605671
bldg_type_duplex	-3077.726266
bldg_type_twnhs	-3485.844173
bldg_type_twnhse	-4683.338779

alt_housing_options	-6016.456544
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# Conclusion

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Each alternative housing option yields a lower sale price than a single family home, on average.

The residents have a good intuition. Single family homes retain more value than alternative options.

If property value is a priority, I recommend developing single family homes.

# Things to Keep in Mind


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There are many factors that contribute to the price of a house

- Location was not accounted for.
- Time series

This data is not recent

There are more single family homes in Ames than other options by a considerable amount. It might be worth it to add more multi-family housing units to accommodate these residents.



Thank you  
Any questions?