Implications of model:

1. Population density should decrease with distance from downtown

* Household demand for living space increases as move from CBD
* Causes population per square mile to decrease

[Boston Density Gradient](http://milesfinney.net/440/hand/popden.pdf)

2. Assuming continuous rent bid gradients, land use should be distinguished between residential and non-residential users.

nonresidential

residential

 µf µh

* firms outbid households for land up to µf
* residential area begins beyond µf

3. Nonresidential users of land at city center no longer manufacturing

* trucking has made manufacturing/distribution firms less tied to proximity to rail/port terminal
* industries that need face-to-face contact attracted to CBD: banks, insurance companies, headquarters of firms etc.

4. Size of urban area does not extend beyond µh

Size of urban area partially determined by transport cost

Issues:

A. Decreased transport cost should flatten rent bid line

extend size of CBD and metro area

Nonresidential:

$\frac{∆R}{∆μ}=\frac{-tB}{T}$ as t falls…..

Residential

$\frac{∆P}{∆μ}=\frac{-t}{H}$ as t falls..

B. Those with smaller demands for housing should be motivated to live near CBD (single, small family)

$$\frac{∆P}{∆μ}=\frac{-t}{H(μ)}$$

H($μ)$ quantity demanded of housing as function of distance from CBD

H($μ)$ should always be smaller for single person household compared to family

Makes rent bid function more downward sloping for single households compared to others

Small household

Large household

C. As household income increases, two counter-effects

$$\frac{∆P}{∆μ}=\frac{-t}{H(μ)}$$

1. higher opportunity cost of time

 this aspect of transport cost pushes higher income households toward CBD (t increasing)

b. greater demand for living space

 H is increasing, pulling higher income households outward