

pretty (and smart)

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## outline

looks matter

general: displaying data (in a map)

maps specifically

but wait, smart is important too! see final\_project.pdf [later]

examples from past [if time]

finish early; i will walk around and ans 1:1 q&a



# today

- switching gears and relaxing: art of mapping
- maybe revisit join in the middle, flip the class, q&a

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## “looks vs brains”

- of course, good idea for a map is the key, and:
  - good/quality data: GIGO!
  - the right vars (eg measurement, standardization)
  - at the right level (resolution or aggregation)
- but if map's ugly,  
    people won't bother to get its “internal beauty”
  - mapping is about the “visual appearance”
  - it has to be pretty! yes, “the looks” come first!

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## make it interesting!

- “the greatest value of a picture is when it forces us to notice what we never expected to see”
- or less poetically, just when the maps make the point, expected or unexpected
  - maps must tell a story in a convincing (and rigorous) way
- refs:
  - Tufte (multiple) <http://www.edwardtufte.com/tufte/>
  - Kosslyn “Clear and to The Point” <http://www.amazon.com/Clear-Point-Psychological-Principles-Presentations/dp/0195320697>

## be simple

- everything should be made as simple as possible, but not one bit simpler
- no padding: present only data needed for a specific purpose
- no clutter: put in a single graph only the data that are highly related and must be compared
- put in appendix if it is not very relevant but may be useful
  - people looking for extra info will find it
  - people interested in main story will not get distracted

## avoid visual clutter

- all parts of graph should be meaningful
- good practices:
  - do not use shades
  - do not use fancy colors
  - do not use any decoration

## use space efficiently

- get rid of white space, blow up your map
  - it should be as big as possible, use all space
- put legend in an efficient way
  - eg in water or forest, etc

## balance! keep balance in:

- colors (say either use toned down colors for everything or use stark contrasts, etc)
- fonts: titles, notes, labels etc should be proportional
- thickness of lines
- and everything else
- in general: rather use less ink than more

## one v several graphs/maps

- usually to convey an idea, you may need several graphs/maps
- say if you want to show deprivation in SJ:
  - eg low educ, poverty, crime, etc etc
  - but can also show a summary, eg an index
- sometimes better in one graph/map
  - eg showing change: better one than 2; just calc chng var
  - **calc** perc chng in  $100 * (\text{pop10} - \text{pop00}) / \text{pop00}$

## think about it/meaning: the 'so what?' question

- ok, you've got the map
- now think about it...
- what does it mean?
  - (beyond technical correctness; lack of mistakes)
  - eg is it interesting or informative or helpful... etc?
  - as you look at it, ask yourself the 'so what?' question
  - if not happy with the answer:
  - move it to the appendix, and produce a better map
- in this class i will be grading substantive meaning, too

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## let's load our favorite counties data

- <https://docs.google.com/uc?id=1xJDhcRCkgv7k4tNCa720og5bohV6dTb2&export=download>
- and let's look more at the style tab
- see colors, transparencies, symbols, etc
  - and shading/hashing, line width, color, etc

## some examples [if time]

- we can have a look at some examples and discuss if they are pretty
- [http://twistedsifter.com/2013/08/  
maps-that-will-help-you-make-sense-of-the-world/](http://twistedsifter.com/2013/08/maps-that-will-help-you-make-sense-of-the-world/)
- [https://instagram.com/map\\_view?igshid=sy0e4noh5exq](https://instagram.com/map_view?igshid=sy0e4noh5exq)
- can also google “thematic map” + “best”; “examples” etc
- or “choropleth maps”

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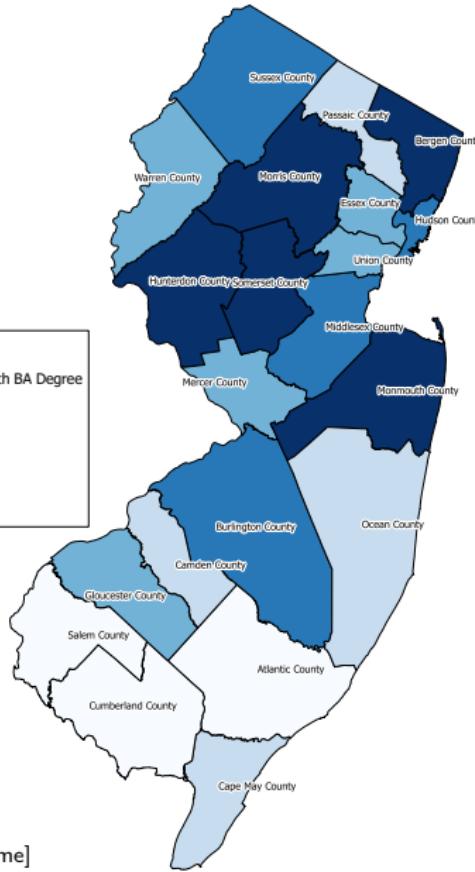
examples from past [if time]

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## nj force [only on campus or vpn!]

- <https://maps-dppa.camden.rutgers.edu/index.php?search=ethan&title=Special%3ASearch&go=Go>

## New Jersey Residents with Bachelor Degree or Higher

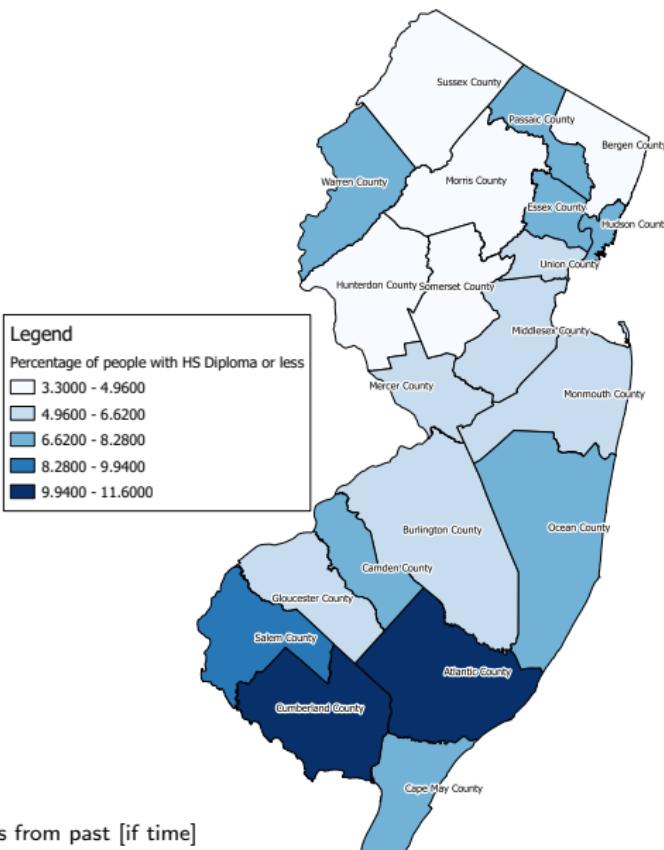


### Legend

Percentage of Residents with BA Degree

- 11.5000 - 15.0200
- 15.0200 - 18.5400
- 18.5400 - 22.0600
- 22.0600 - 25.5800
- 25.5800 - 29.1000

## New Jersey rate of residents earning less than a High School Diploma



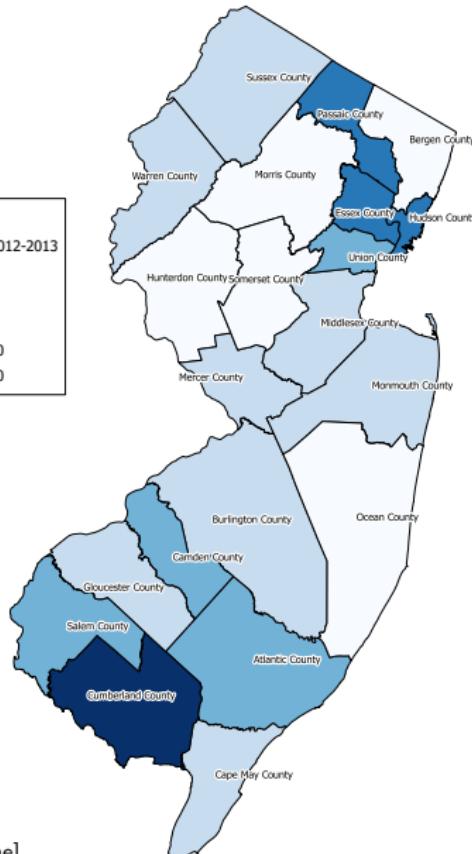
examples from past [if time]

## 2012-2013 NJ K-12 Education Aid per resident

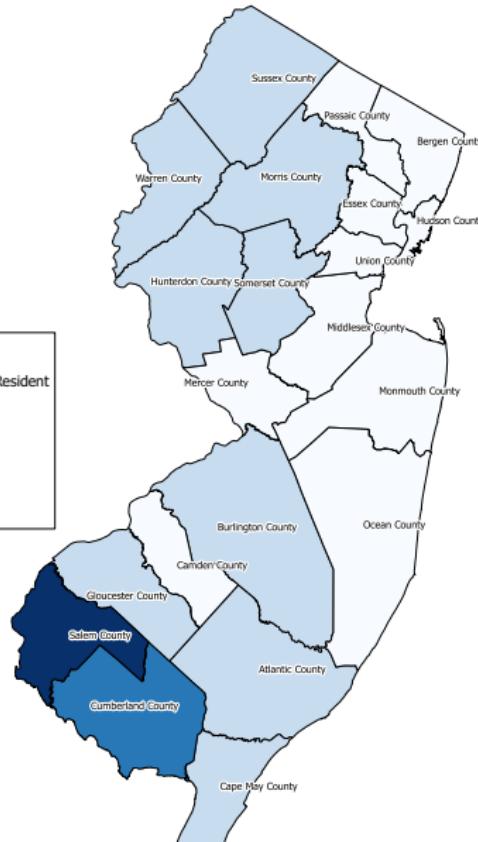
### Legend

NJ State Aid Per Resident 2012-2013

- 226.0000 - 609.6000
- 609.6000 - 993.2000
- 993.2000 - 1376.8000
- 1376.8000 - 1760.4000
- 1760.4000 - 2144.0000



## NJ 2013 Transportation Aid Per Resident



### Legend

NJ 2013 Transportation Aid Per Resident	
■	5.0000 - 9.6000
■	9.6000 - 14.2000
■	14.2000 - 18.8000
■	18.8000 - 23.4000
■	23.4000 - 28.0000

examples from past [if time]

## NJ counties

- many variables about similar topic: education
  - great: triangulation
- good use of space, could be little better
- nice color ramp
- good fonts, maybe title little smaller
- fewer decimal points !
- could list data source (but may do it elsewhere, say in paper)

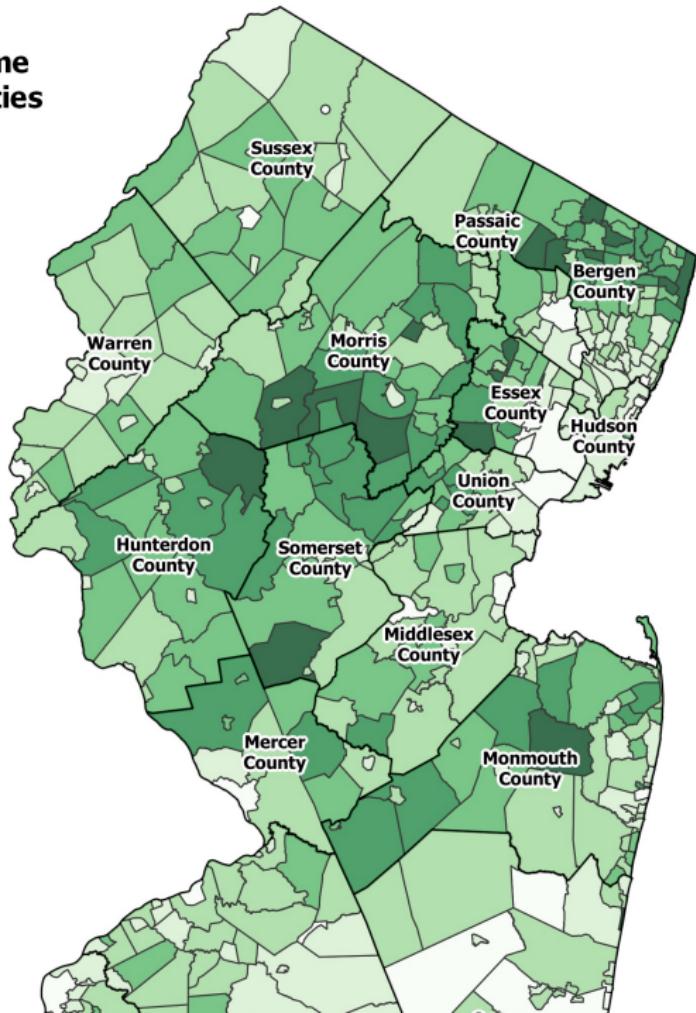
# Median Household Income in New Jersey Municipalities

For 2006-2010

Median Income: \$67,681

## Legend

- Median Income Range
- \$25,682 - \$48,702
  - \$48,703 - \$69,915
  - \$69,916 - \$90,411
  - \$90,412 - \$113,542
  - \$113,542 - \$144,299
  - \$144,300 - \$250,001
  - No data available

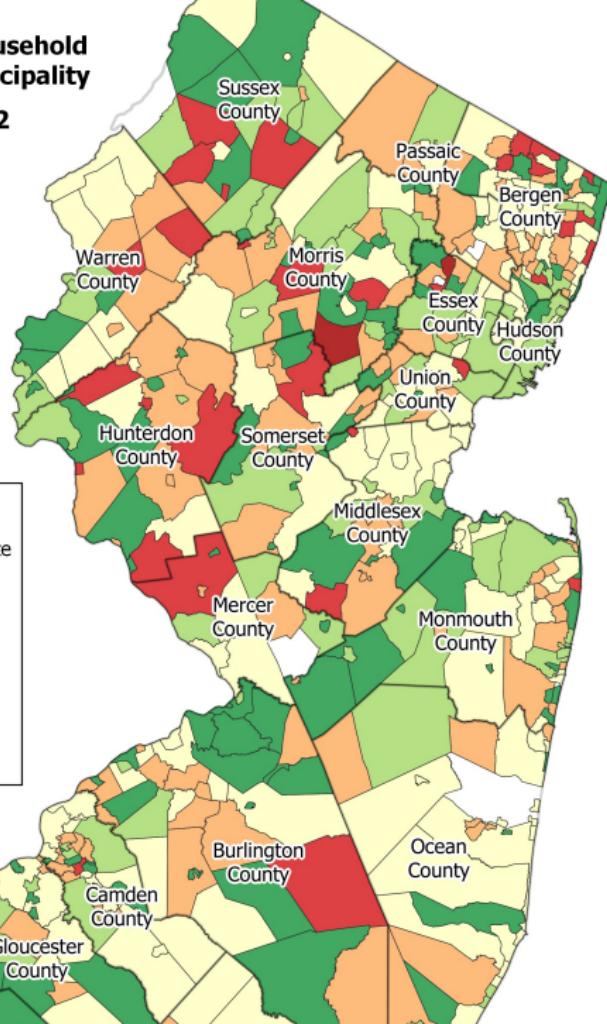


## income in NJ

- note, map cut to display detail
- nice title, we know timeframe
- legend: note decimal points; love yellow for missing data
- really nothing to fix; 2 things below \*personal\* preference:
  - use white borders for municipalities—little cleaner
  - use a 2 color ramp (say red-green) to signal poverty-affluence
- interesting: such big disparities so close to each other
- a note on level of analysis:
  - if county level data: N dark green; S: bright green
  - it would cover up deep poverty pockets in NYC metro!
- aggregation does matter! results are totally different

## Percent Change in Household Poverty Rates by Municipality

From 1999-2012



## poverty change

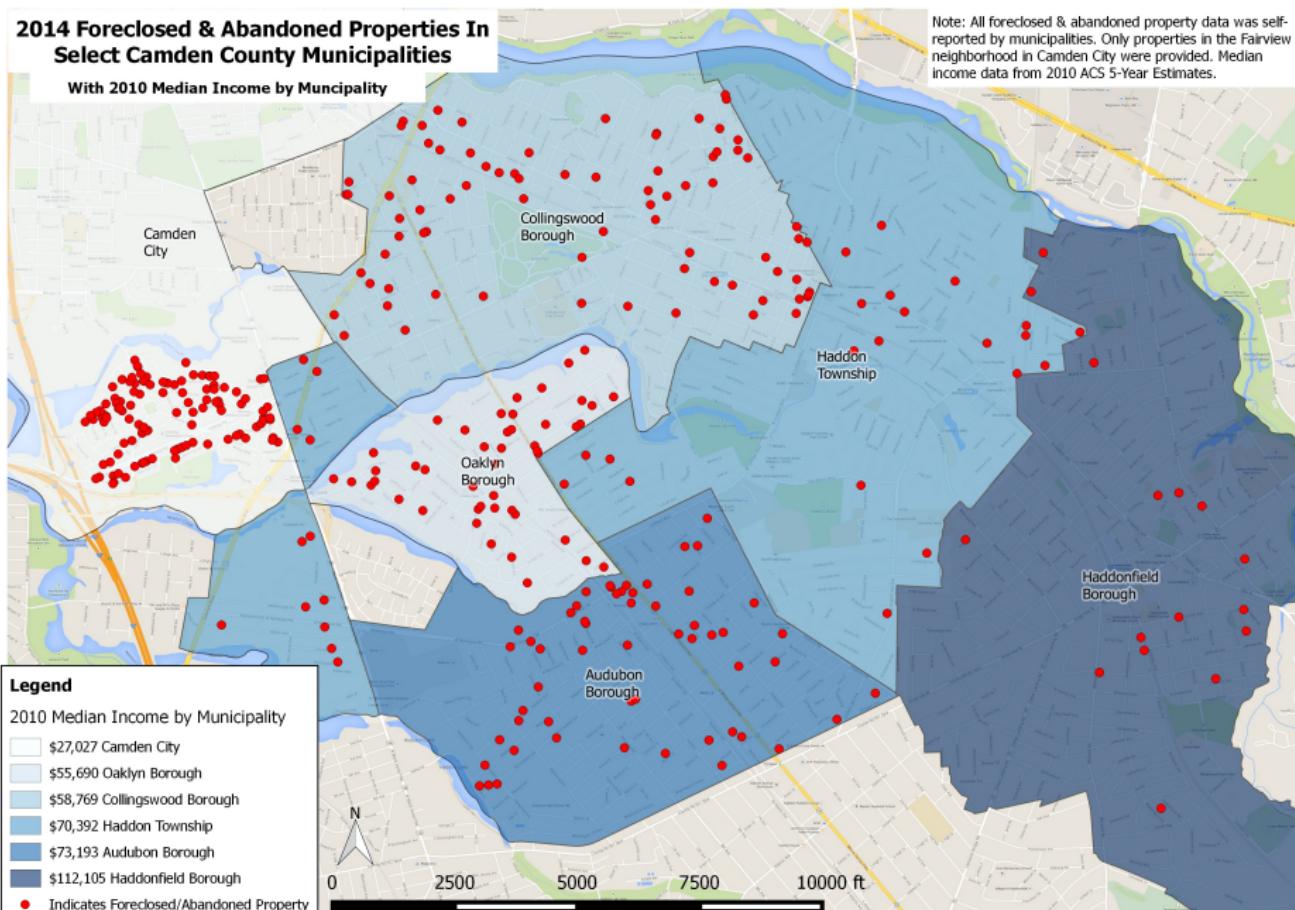
- readable, informative, great!
- great variation ! quite striking
- wonder why some places do quite well and some so bad...
- future: change from 1% to 5% and from 10% to 50% are both 500%
  - yet they mean different things
- can use it for policy analysis...
- say could thing why such great divergence...
- any policies that could have worked?

# properties

## 2014 Foreclosed & Abandoned Properties In Select Camden County Municipalities

With 2010 Median Income by Municipality

Note: All foreclosed & abandoned property data was self-reported by municipalities. Only properties in the Fairview neighborhood in Camden City were provided. Median income data from 2010 ACS 5-Year Estimates.



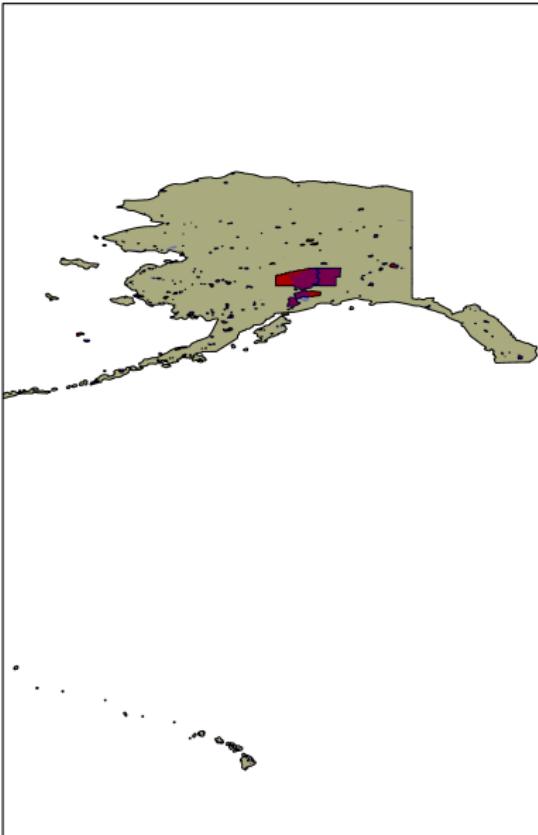
## properties

- superb use of space! labeling neatly in corners
- pretty map!
- interesting map—clearly foreclosures correlate negatively with income

## properties

- guess some data missing in top right corner? should be indicated more clearly...
- perhaps make it reddish or cover with dashed or dotted pattern
- so that we know clearly for which areas there are no data
- 2014 is still going—should mention months
- note how hi resolution google map is! can zoom in and see all road names
- is it median hh income? (it is explained in journal though)

# Indians



## Legend

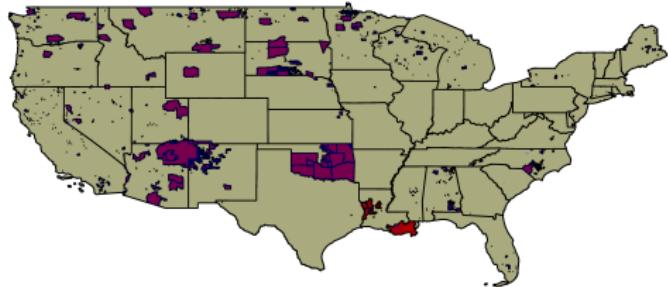
2012 American Indian/Alaska Native/Native Hawaiian Reserved Area



2007 American Indian/Alaska Native/Native Hawaiian Reserved Area



State Boundaries

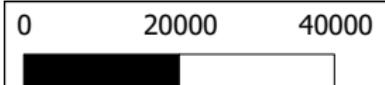
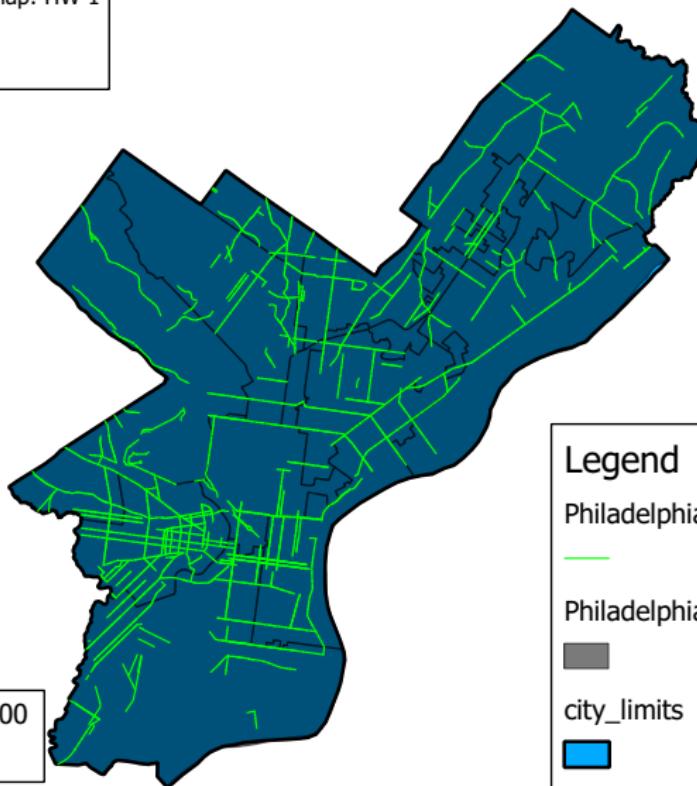


## Indians

- nice map ! can improve:
  - smaller font
  - transparent colors to see time difference
  - zoom in more
- future research:
  - longer time span, say hundreds of years
  - also show population
  - and other sociodemographics

# bike lanes

Philadelphia bike map: HW 1



examples from past [if time]

## bike lanes

- very nice !
- can improve: beautify fonts, colors...
- future research:
  - add bike traffic (not sure if available, but can measure...)
  - add sociodemographics by tract
    - eg do young or rich or educated people bike ?
  - compare with other cities, eg Boston, Portland...

## future ps

- we'll be doing thematic maps throughout the course
- and i will be much more picky

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