

master_clean_shape

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```
library(tidyverse)

## -- Attaching packages ----- tidyverse 1.2.1 --

## v ggplot2 3.3.3     v purrr   0.3.4
## v tibble  3.0.4     v dplyr    1.0.2
## v tidyr   1.1.2     v stringr  1.4.0
## v readr   1.4.0     vforcats 0.5.0

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()   masks stats::lag()

library(tidylog)

##
## Attaching package: 'tidylog'

## The following objects are masked from 'package:dplyr':
##
##     add_count, add_tally, anti_join, count, distinct,
##     distinct_all, distinct_at, distinct_if, filter, filter_all,
##     filter_at, filter_if, full_join, group_by, group_by_all,
##     group_by_at, group_by_if, inner_join, left_join, mutate,
##     mutate_all, mutate_at, mutate_if, relocate, rename,
##     rename_all, rename_at, rename_if, rename_with, right_join,
##     sample_frac, sample_n, select, select_all, select_at,
##     select_if, semi_join, slice, slice_head, slice_max, slice_min,
##     slice_sample, slice_tail, summarise, summarise_all,
##     summarise_at, summarise_if, summarise, summarise_all,
##     summarise_at, summarise_if, tally, top_frac, top_n, transmute,
##     transmute_all, transmute_at, transmute_if, ungroup

## The following objects are masked from 'package:tidyr':
##
##     drop_na, fill, gather, pivot_longer, pivot_wider, replace_na,
##     spread, uncount

## The following object is masked from 'package:stats':
##
##     filter
```

```

library(sf)

## Linking to GEOS 3.7.2, GDAL 2.4.2, PROJ 5.2.0

library(tmap)

path <- "/Users/xiafm/Documents/GitHub/NJ-opioidenv/data_final/"
master_clean <- read.csv(paste0(path, "master_clean.csv"), colClasses = c("SSN" = "character"))

mun <- st_read("data_in_progress/mun_boundaries.geojson") %>%
  select(SSN)

## Reading layer 'mun_boundaries' from data source '/Users/xiafm/Documents/GitHub/NJ-opioidenv/data_in_
## Simple feature collection with 565 features and 6 fields
## geometry type:  MULTIPOLYGON
## dimension:      XY
## bbox:            xmin: 193684.7 ymin: 34954.71 xmax: 657059.7 ymax: 919556.3
## CRS:             3424

## select: dropped 5 variables (Place.Name, GNIS_NAME, GNIS, SQ_MILES, POP2010)

master_shape <- left_join(master_clean, mun) %>%
  st_as_sf()

## Joining, by = "SSN"

## left_join: added one column (geometry)

##           > rows only in x    258
##           > rows only in y  (258)
##           > matched rows     307
##           >                   =====
##           > rows total       565

col_names <- colnames(master_shape)
col_names <- col_names[c(5, 10:21, 23:29, 39:41)]
print(col_names)

##   [1] "pct_h_den_res"          "med_walk_score"        "mean_walk_scre"
##   [4] "num_schools"            "schools_per_pop"       "bike_path_ft_p_mile"
##   [7] "bikes_ft_p_mile"        "count_bars"            "count_ls"
##  [10] "bars_per_sqft"          "bars_per_pop"          "ls_per_sqft"
##  [13] "ls_per_pop"              "bars_ls_per_pop"        "multiunit_struct"
##  [16] "no_vehicle"              "public_transit"         "mobile_home"
##  [19] "total_units"             "vacant_units"          "occupancy_rate"
##  [22] "vacancy_rate"           "mobile_home_rate"

```

```

make_map <- function(col_name) {
  tm_shape(master_shape) + tm_fill(col = col_name, style = "jenks") + tm_borders(alpha = .15)
}
maps <- lapply(col_names, make_map)

```

Commercial Environment:

Bars/Liquor store per capita and per area: 8. count_bars 9. count_ls 10. bars_per_sqft 11. bars_per_pop
 12. ls_per_sqft 13. ls_per_pop 14. bars_ls_per_pop

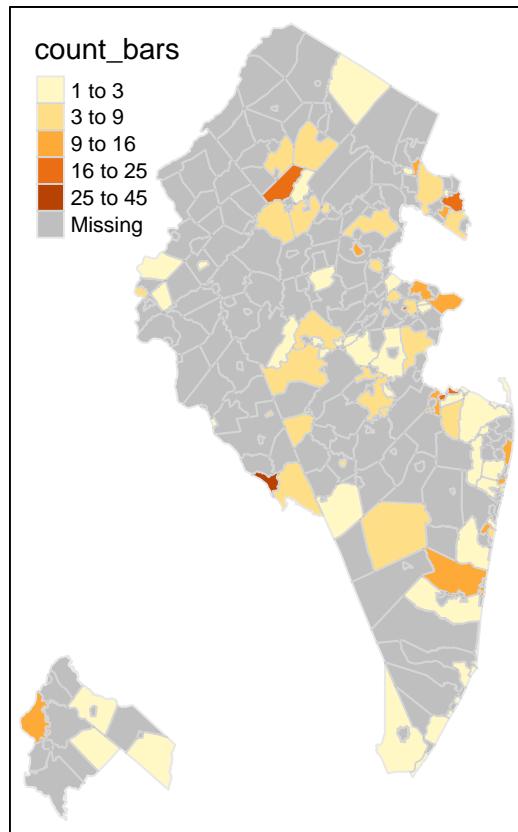
Comments: 1. very limited data points in selected areas; 2. per pop seems to be a better variable?

```

par(mfrow=c(1,2))
maps[8] #8. count_bars

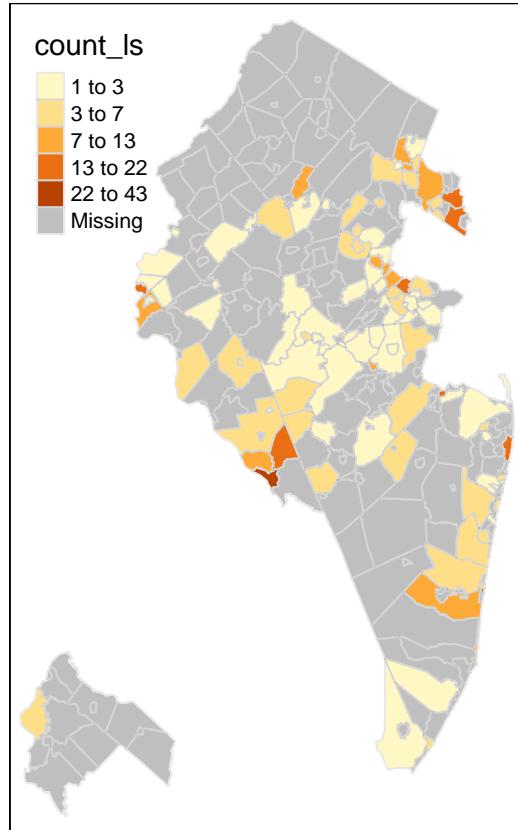
```

```
## [[1]]
```



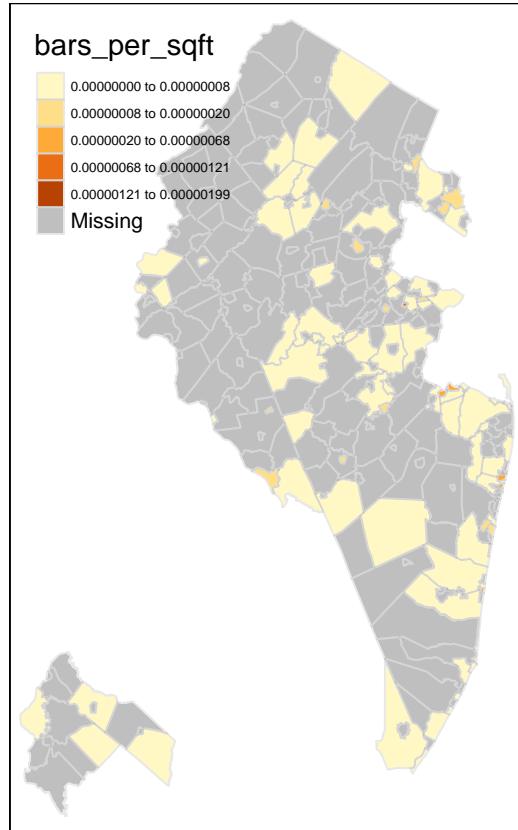
```
maps[9] #9. count_ls
```

```
## [[1]]
```



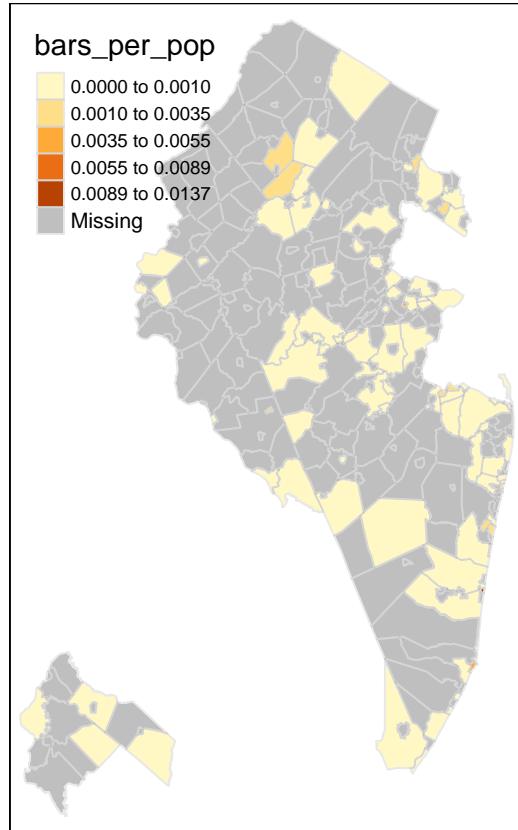
```
par(mfrow=c(3,2))
maps[10] #10. bars_per_sqft
```

```
## [[1]]
```



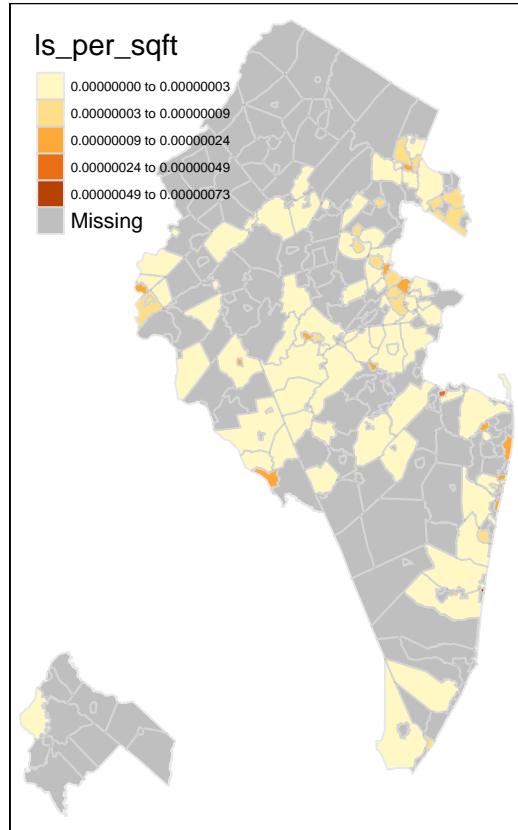
```
maps[11] #11. bars_per_pop
```

```
## [[1]]
```



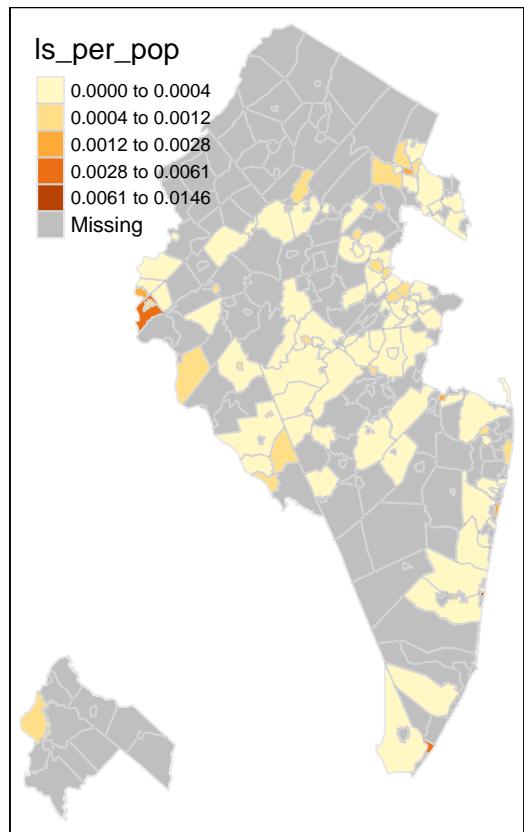
```
maps[12] #12. ls_per_sqft
```

```
## [[1]]
```



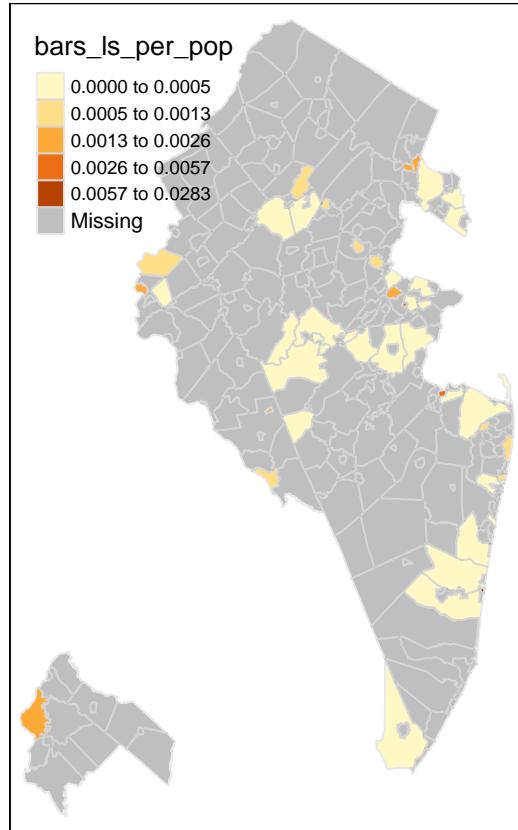
```
maps[13] #13. ls_per_pop
```

```
## [[1]]
```



```
maps[14] #14. bars_ls_per_pop
```

```
## [[1]]
```

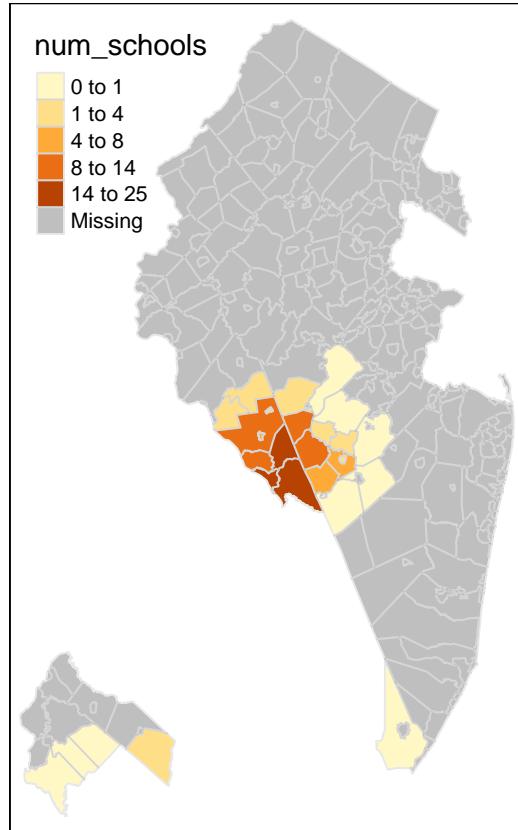


##Residential Environment:

Comment: 1. school measures don't have enough data 2. public transit most availabel in central area 3. relatively consistent patterns that the souther side of NJ has a higher rate of mobile home, vacancy rate,
 Takeaways: Again relatively consistent patterns. Appears that sales volume was relatively consistent but went down in rural western side.

```
maps[4] #4 num_schools
```

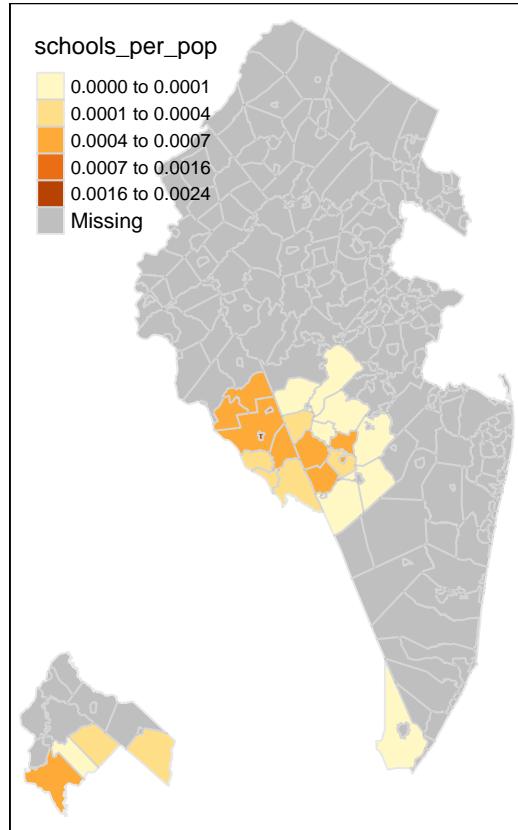
```
## [[1]]
```



```
maps[5] # 5 schools_per_pop
```

```
## [[1]]
```

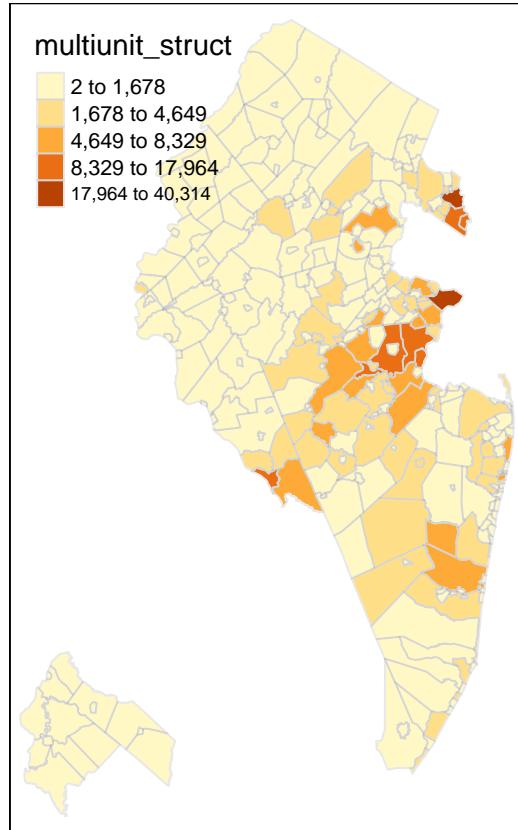
```
## Some legend labels were too wide. These labels have been resized to 0.6, 0.6, 0.6, 0.6, 0.6. Increase
```



```
maps[15] #15 multiunit_struct"
```

```
## [[1]]
```

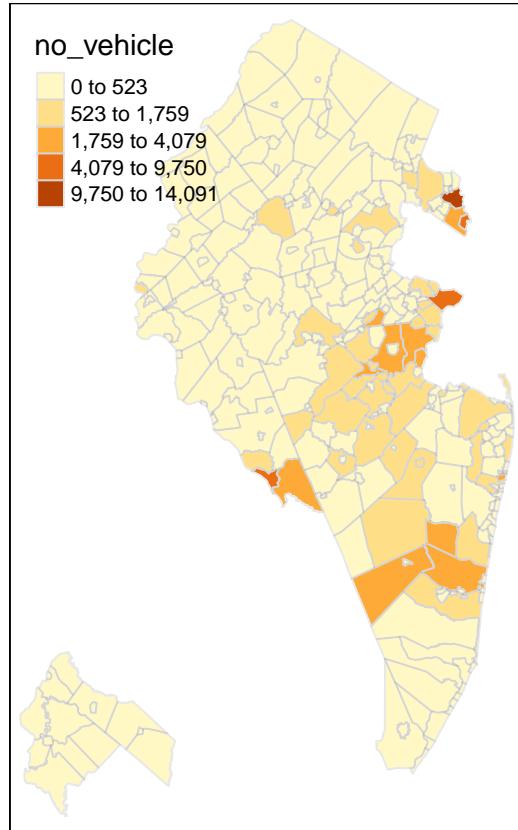
```
## Some legend labels were too wide. These labels have been resized to 0.65, 0.60. Increase legend.width
```



```
maps[16] #16 no_vehicle
```

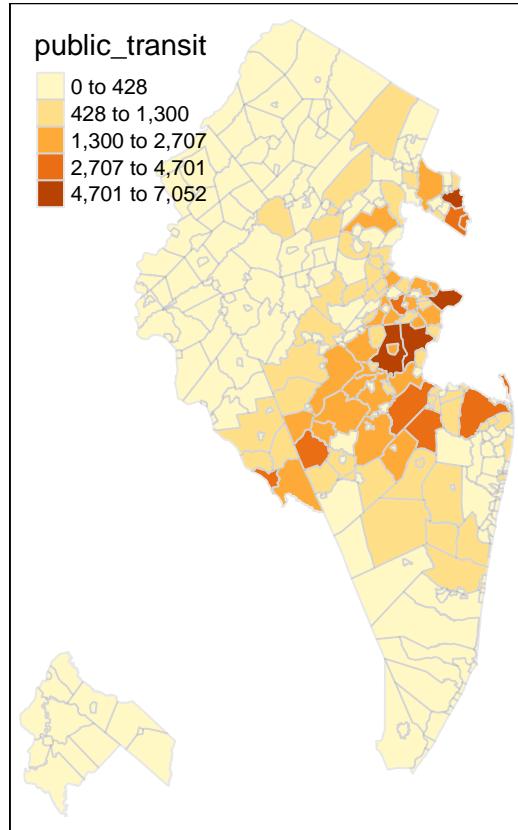
```
## [[1]]
```

```
## Some legend labels were too wide. These labels have been resized to 0.65. Increase legend.width (arg
```



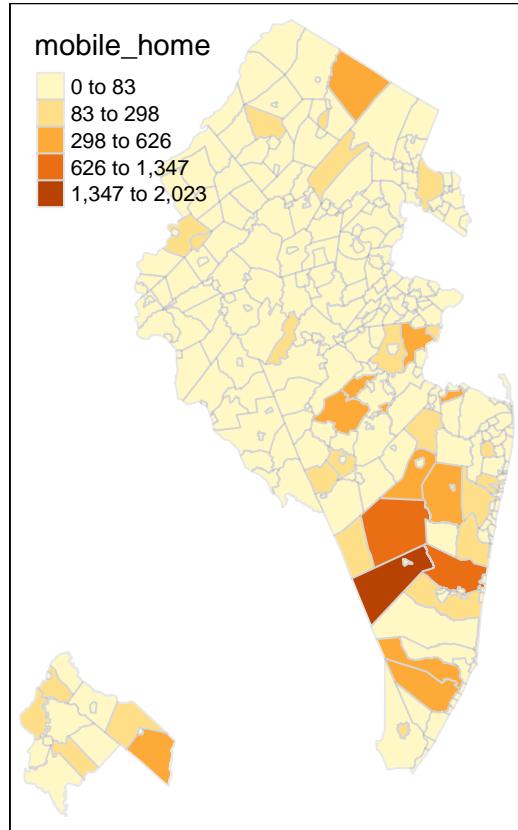
```
maps[17] #17 public_transit
```

```
## [[1]]
```



```
maps[18] #18 mobile_home
```

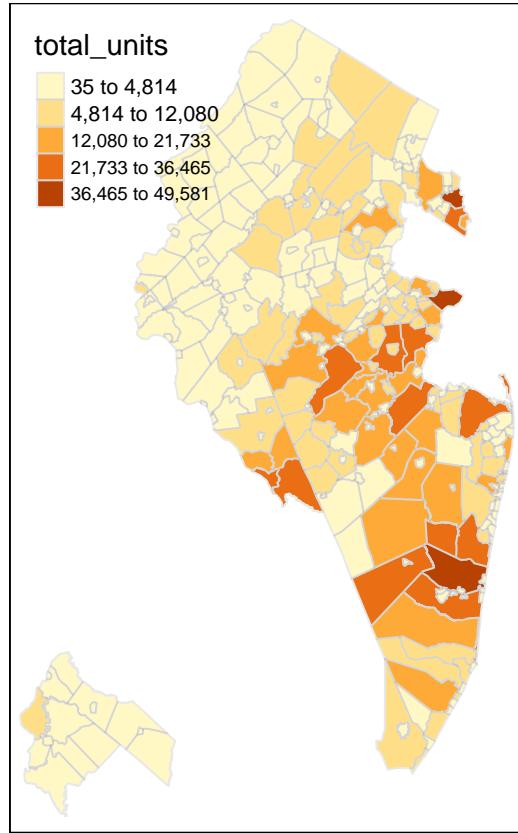
```
## [[1]]
```



```
maps[19] #19 total_units
```

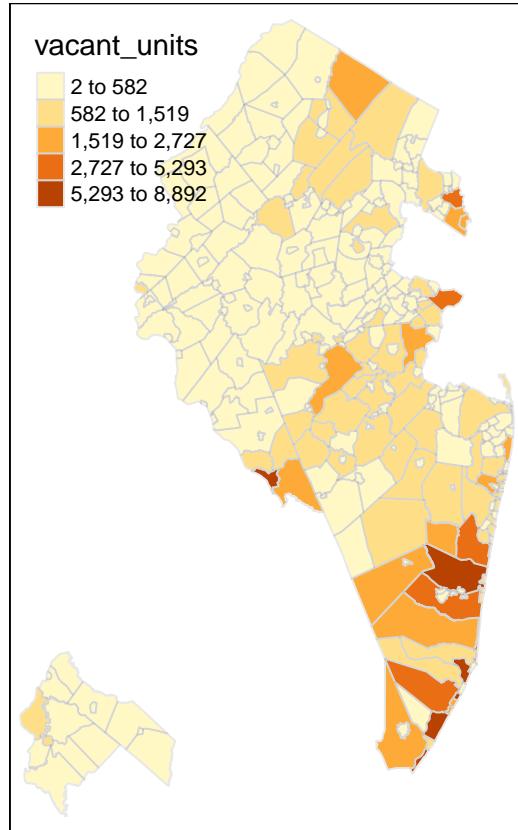
```
## [[1]]
```

```
## Some legend labels were too wide. These labels have been resized to 0.65, 0.60, 0.60, 0.60. Increase
```



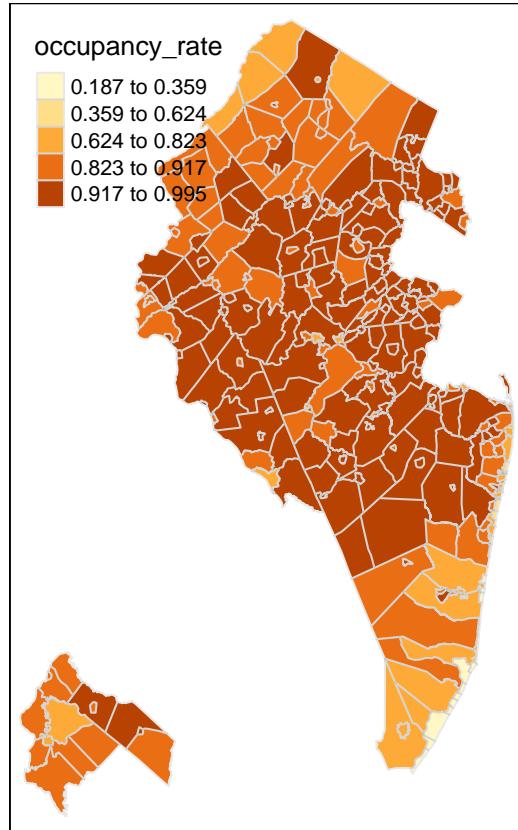
```
maps[20] #20 vacant_units
```

```
## [[1]]
```



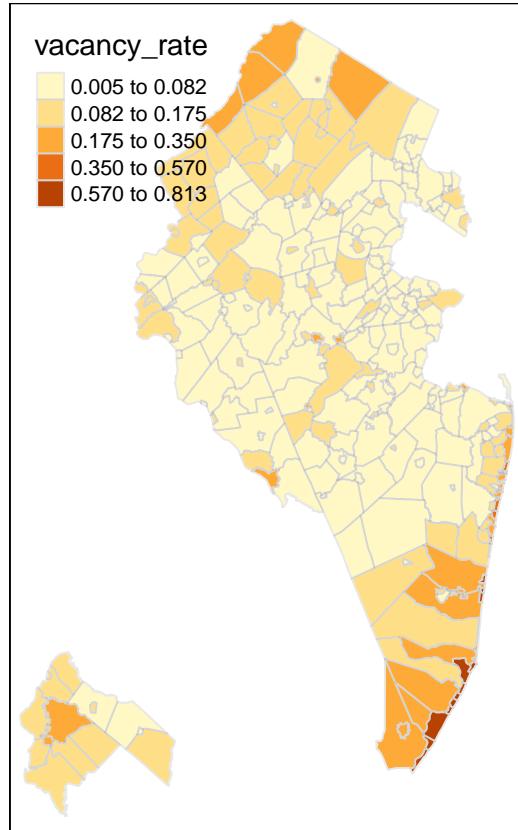
```
maps[21] #21 occupancy_rate
```

```
## [[1]]
```



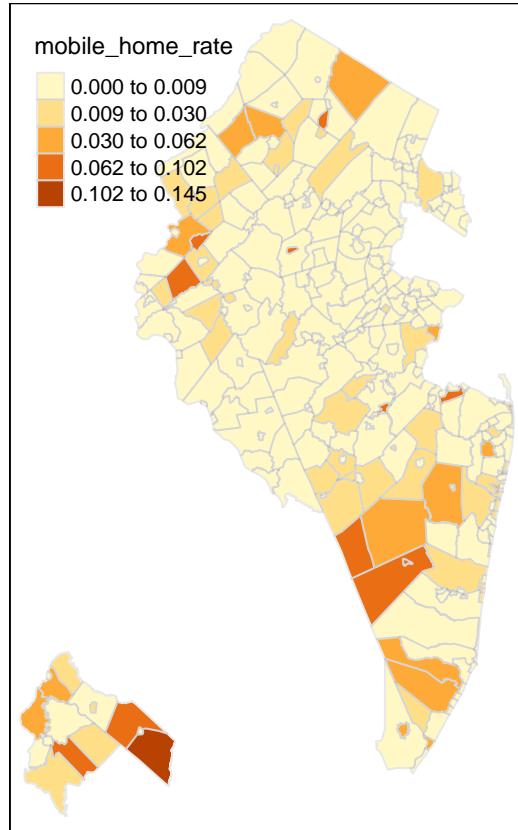
```
maps[22] #22 vacancy_rate
```

```
## [[1]]
```



```
maps[23] #23 mobile_home_rate
```

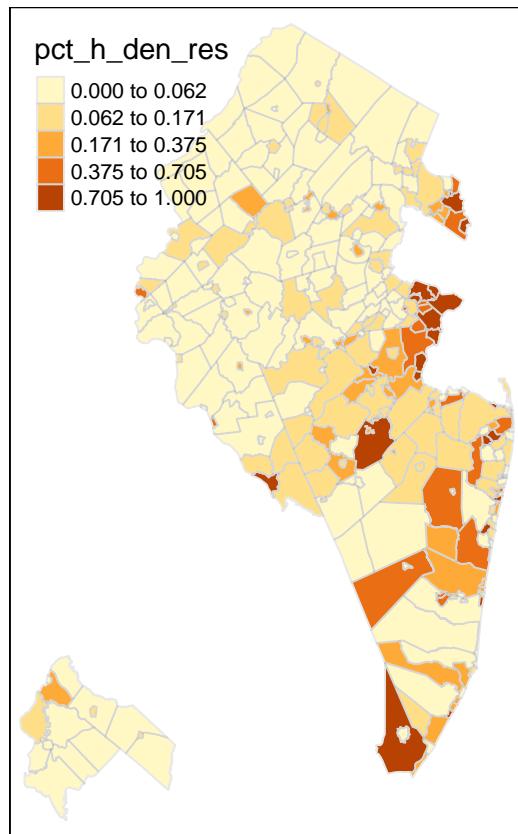
```
## [[1]]
```



##Physical Environ:

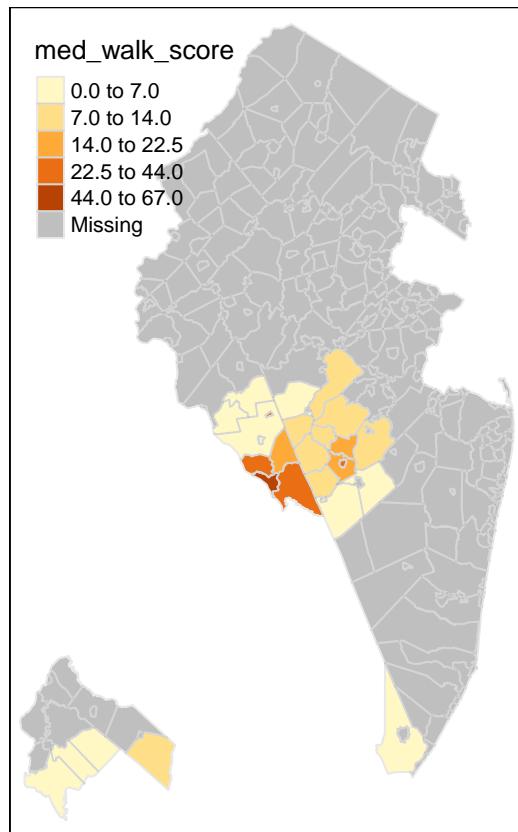
```
maps[1] #1.      pct_h_den_res
```

```
## [[1]]
```



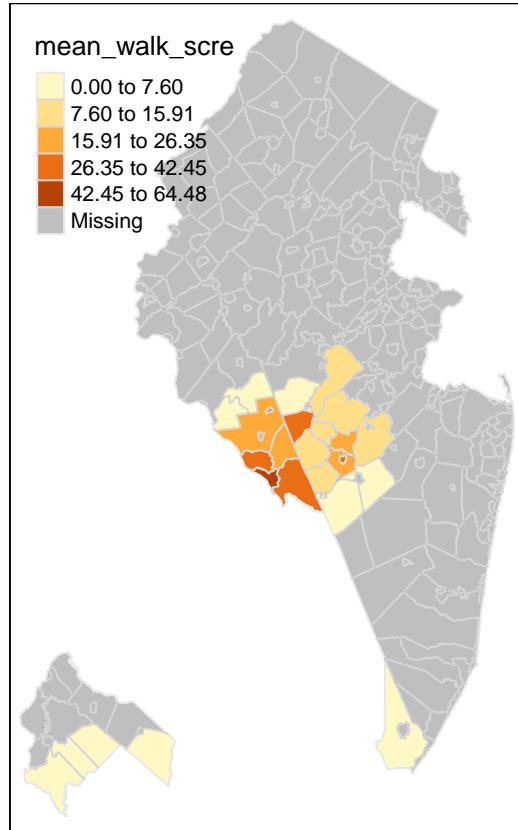
```
maps[2] #2. med_walk_score
```

```
## [[1]]
```



```
maps[3] #3. mean_walk_scre
```

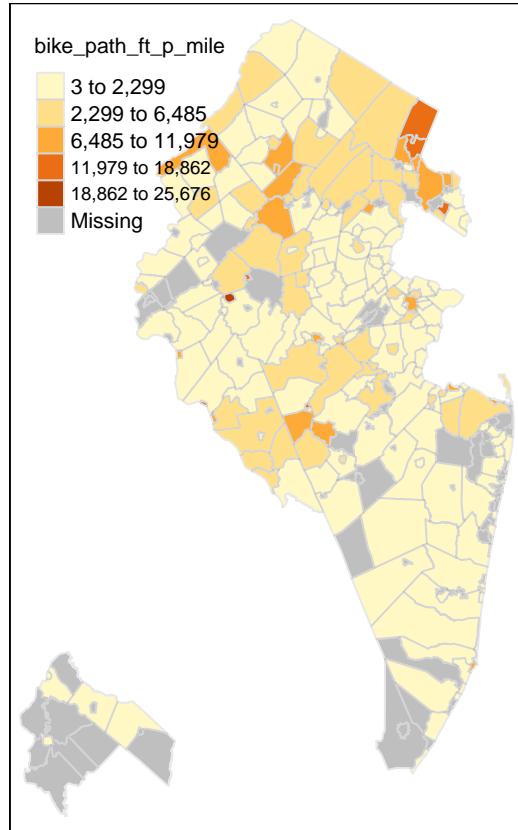
```
## [[1]]
```



```
maps[6] #6. bike_path_ft_p_mile"
```

```
## [[1]]
```

```
## Some legend labels were too wide. These labels have been resized to 0.65, 0.60, 0.60. Increase legend
```



```
maps[7] #7. "bikes_ft_p_mile"
```

```
## [[1]]
```

```
## Some legend labels were too wide. These labels have been resized to 0.65. Increase legend.width (arg
```

