

Arbeidskrav i MSB205

Thibiga Kuddyar

Ingrid-Liv Morkken

Warning: package 'huxtable' was built under R version 4.2.2

Oppgave 1

Oppgave 2; House Sales in King County

```
kc_house_data <- read_csv("kc_house_data.csv")

kc_house_data <- arrange(kc_house_data, desc(date))

kc_house_data <- kc_house_data %>%
  distinct(id, .keep_all=TRUE)

kc_house_data_sf <- st_as_sf(kc_house_data,
                             coords= c(x = "long", y = "lat"),
                             crs = 4326) %>%
  st_transform(2926)
```

Koordinatene til Seattle hentet fra Wikipedia: 47°36'35N 122°19'55V I desimaler:
47.609722, -122.333056

```
cbd <- st_sfc(st_point(c(-122.333056, 47.609722)), crs = 4326) %>%
  st_transform(2926)

kc_house_data_sf <- kc_house_data_sf %>%
  mutate(
    dist_cbd = st_distance(cbd, ., by_element= TRUE),
    dist_cbd_km = set_units(dist_cbd, km)
  )
```

Oppgave 3 WADOH Environmental Health Disparities Index County

```
kc_wadoh_map <- here("Kart/WADOH_Environmental_Health_Disparities_Index_Calculated_for_Ki
  st_read() %>%
  st_transform(2926)
```

```
Reading layer `WADOH_Environmental_Health_Disparities_Index_Calculated_for_King_County__wad
  using driver `ESRI Shapefile'
Simple feature collection with 398 features and 192 fields
Geometry type: MULTIPOLYGON
Dimension:      XY
Bounding box:   xmin: -122.528 ymin: 47.08446 xmax: -121.0657 ymax: 47.78058
Geodetic CRS:   WGS 84
```

```
#Dersom jeg bruker .shp får jeg opp feilmelding om at filen ikke finnes i mappen.
```

```
kc_wadoh_map <- kc_wadoh_map %>%
  select(
    GEO_ID_TRT,
    EHD_percen, #Environmental Health Index, weighted score many vars
    linguist_2, #Pop. age 5+ speaking English less than "very well"
    poverty_pe, #Percentage people living in poverty
    POC_percen, #People of Color in percentage of pop. in tract
    transporta, #% of income spent on transportation median family in tract
    unemploy_2, #percentage unemployed
    housing_pe, #% of households in group "Unaffordable Housing" (>30% inc.)
    traffic_pe, #% of pop. near heavy traffic roadways
    diesel, # nox concentration
    ozone, # ozone concentration
    PM25, # concentration of Particulate Matter in air
    toxic_rele, # Toxic release from factories
    hazardous_, # Hazardous Waste Treatment Storage and disposal Facilities
    lead_perce, # measure of Lead paint in houses
    superfund, # Proximity to contaminated sites on national list
    facilities, # Proximity to Risk Management Plan Facilities
    wastewater, # Proximity to wastewater facilities
    sen_pop_pe, # % pop. over 65
    socio_perc # score social economic determant, low best
  )
```

```

acs_b19101_fam_inc <- read.dbf("../censusSHP/acs_b19101_familyincome.dbf")

acs_b19101_fam_inc <- acs_b19101_fam_inc %>%
  mutate(low = (E19101138 + E19101139 + E19101140 + E19101141 + E19101142 + E19101143)/E1
  mutate(mid = (E19101144 + E19101145 + E19101146 + E19101147 + E19101148 + E19101149)/E1
  mutate(high = (E19101150 + E19101151 + E19101152 + E19101153)/E19101137)

acs_b19101_fam_inc <- acs_b19101_fam_inc %>%
  select(GEOIDTRT, low, mid, high) %>%
  rename(GEO_ID_TRT = GEOIDTRT)

kc_wadoh_map_2 <- left_join(acs_b19101_fam_inc, st_drop_geometry(kc_wadoh_map), by = "GEO

kc_tracts10 <- here("../censusSHP/tracts10.shp") %>% st_read() %>%
  st_transform(2926)

```

Reading layer `tracts10' from data source

```

`C:\Users\thibi\Documents\censusSHP\tracts10.shp' using driver `ESRI Shapefile'
Simple feature collection with 398 features and 22 fields
Geometry type: POLYGON
Dimension:      XY
Bounding box:   xmin: 1217085 ymin: 31406.52 xmax: 1583210 ymax: 287947.2
Projected CRS:  NAD83(HARN) / Washington North (ftUS)

```

```

kc_tracts10_shore <- here("../censusSHP/tracts10_shore.shp") %>% st_read() %>%
  st_transform(2926)

```

Reading layer `tracts10_shore' from data source

```

`C:\Users\thibi\Documents\censusSHP\tracts10_shore.shp' using driver `ESRI Shapefile'
Simple feature collection with 398 features and 22 fields
Geometry type: MULTIPOLYGON
Dimension:      XY
Bounding box:   xmin: 1220306 ymin: 31406.52 xmax: 1583210 ymax: 287675.5
Projected CRS:  NAD83(HARN) / Washington North (ftUS)

```

```

kc_tracts10_env_data <- left_join(
  kc_tracts10, kc_wadoh_map_2,
  by = "GEO_ID_TRT"
)

```

```
kc_tracts10_shore_env_data <- left_join(kc_tracts10_shore, kc_wadoh_map_2, by= "GEO_ID_TR")
```

```
summary(kc_tracts10)
```

GEO_ID_TRT	FEATURE_ID	TRACT_LBL	TRACT_STR
Length:398	Min. :10153	Length:398	Length:398
Class :character	1st Qu.:25818	Class :character	Class :character
Mode :character	Median :44344	Mode :character	Mode :character
	Mean :36731		
	3rd Qu.:45226		
	Max. :45837		
TRACT_INT	TRACT_FLT	TRACT_DEL	TRTLABEL_F
Min. : 100	Min. : 1.00	Length:398	Length:398
1st Qu.: 9625	1st Qu.: 96.25	Class :character	Class :character
Median : 24150	Median : 241.50	Mode :character	Mode :character
Mean : 23022	Mean : 230.22		
3rd Qu.: 30077	3rd Qu.: 300.76		
Max. :990100	Max. :9901.00		
TRTLABEL_C	TRTLABEL_T	COUNTY_STR	COUNTY_INT
Length:398	Length:398	Length:398	Min. :33
Class :character	Class :character	Class :character	1st Qu.:33
Mode :character	Mode :character	Mode :character	Median :33
			Mean :33
			3rd Qu.:33
			Max. :33
STATE_STR	STATE_INT	LEVEL_1	LEVEL_2
Length:398	Min. :53	Length:398	Length:398
Class :character	1st Qu.:53	Class :character	Class :character
Mode :character	Median :53	Mode :character	Mode :character
	Mean :53		
	3rd Qu.:53		
	Max. :53		
LEVEL_3	TRACT_AREA	TRACT_PERI	LOGRECNO
Length:398	Min. :2.466e+06	Min. : 7060	Length:398
Class :character	1st Qu.:1.933e+07	1st Qu.: 20586	Class :character
Mode :character	Median :3.362e+07	Median : 29573	Mode :character
	Mean :1.616e+08	Mean : 44019	
	3rd Qu.:5.601e+07	3rd Qu.: 43667	
	Max. :1.526e+10	Max. :738820	
Shape_area	Shape_len	geometry	
Min. :2.466e+06	Min. : 7060	POLYGON	:398
1st Qu.:1.933e+07	1st Qu.: 20586	epsg:2926	: 0
Median :3.362e+07	Median : 29573	+proj=lcc ...:	0
Mean :1.616e+08	Mean : 44019		

```
3rd Qu.:5.601e+07    3rd Qu.: 43667
Max.    :1.526e+10    Max.    :738820
```

```
kc_house_env_var <- st_join(kc_house_data_sf, kc_tracts10_env_data)
kc_tracts10_shore_env_var <- st_join(kc_house_data_sf, kc_tracts10_shore_env_data)
```

Oppgave 4 “Spatial join”

```
st_write(kc_house_data, "Kart/kc_house_data.gpkg", append = FALSE)
```

```
Deleting layer `kc_house_data' using driver `GPKG'
Writing layer `kc_house_data' to data source
`Kart/kc_house_data.gpkg' using driver `GPKG'
Writing 21436 features with 21 fields without geometries.
```

```
st_write(kc_tracts10, "Kart/kc_tracts10.gpkg", append = FALSE)
```

```
Deleting layer `kc_tracts10' using driver `GPKG'
Writing layer `kc_tracts10' to data source `Kart/kc_tracts10.gpkg' using driver `GPKG'
Writing 398 features with 22 fields and geometry type Polygon.
```

```
st_write(kc_tracts10_shore, "Kart/kc_tracts10_shore.gpkg", append = FALSE)
```

```
Deleting layer `kc_tracts10_shore' using driver `GPKG'
Writing layer `kc_tracts10_shore' to data source
`Kart/kc_tracts10_shore.gpkg' using driver `GPKG'
Writing 398 features with 22 fields and geometry type Multi Polygon.
```

```
st_write(kc_house_env_var, "Kart/kc_house_env_var.gpkg", append = FALSE)
```

```
Deleting layer `kc_house_env_var' using driver `GPKG'
Writing layer `kc_house_env_var' to data source
`Kart/kc_house_env_var.gpkg' using driver `GPKG'
Writing 21436 features with 65 fields and geometry type Point.
```

```
st_write(kc_tracts10_shore_env_var, "Kart/kc_tracts10_shore_env_var.gpkg", append = FALSE)
```

```
Deleting layer `kc_tracts10_shore_env_var' using driver `GPKG'
Writing layer `kc_tracts10_shore_env_var' to data source
`Kart/kc_tracts10_shore_env_var.gpkg' using driver `GPKG'
Writing 21436 features with 65 fields and geometry type Point.
```

```
summary(kc_tracts10_env_data)
```

GEO_ID_TRT	FEATURE_ID	TRACT_LBL	TRACT_STR
Length:398	Min. :10153	Length:398	Length:398
Class :character	1st Qu.:25818	Class :character	Class :character
Mode :character	Median :44344	Mode :character	Mode :character
	Mean :36731		
	3rd Qu.:45226		
	Max. :45837		
TRACT_INT	TRACT_FLT	TRACT_DEL	TRTLABEL_F
Min. : 100	Min. : 1.00	Length:398	Length:398
1st Qu.: 9625	1st Qu.: 96.25	Class :character	Class :character
Median : 24150	Median : 241.50	Mode :character	Mode :character
Mean : 23022	Mean : 230.22		
3rd Qu.: 30077	3rd Qu.: 300.76		
Max. :990100	Max. :9901.00		
TRTLABEL_C	TRTLABEL_T	COUNTY_STR	COUNTY_INT
Length:398	Length:398	Length:398	Min. :33
Class :character	Class :character	Class :character	1st Qu.:33
Mode :character	Mode :character	Mode :character	Median :33
			Mean :33
			3rd Qu.:33
			Max. :33
STATE_STR	STATE_INT	LEVEL_1	LEVEL_2
Length:398	Min. :53	Length:398	Length:398
Class :character	1st Qu.:53	Class :character	Class :character
Mode :character	Median :53	Mode :character	Mode :character
	Mean :53		
	3rd Qu.:53		
	Max. :53		
LEVEL_3	TRACT_AREA	TRACT_PERI	LOGRECNO
Length:398	Min. :2.466e+06	Min. : 7060	Length:398

Class :character	1st Qu.:1.933e+07	1st Qu.: 20586	Class :character
Mode :character	Median :3.362e+07	Median : 29573	Mode :character
	Mean :1.616e+08	Mean : 44019	
	3rd Qu.:5.601e+07	3rd Qu.: 43667	
	Max. :1.526e+10	Max. :738820	

Shape_area	Shape_len	low	mid
Min. :2.466e+06	Min. : 7060	Min. :0.009298	Min. :0.0000
1st Qu.:1.933e+07	1st Qu.: 20586	1st Qu.:0.053302	1st Qu.:0.2391
Median :3.362e+07	Median : 29573	Median :0.092424	Median :0.3339
Mean :1.616e+08	Mean : 44019	Mean :0.125013	Mean :0.3327
3rd Qu.:5.601e+07	3rd Qu.: 43667	3rd Qu.:0.166534	3rd Qu.:0.4261
Max. :1.526e+10	Max. :738820	Max. :1.000000	Max. :0.6790
		NA's :1	NA's :1

high	EHD_percen	linguist_2	poverty_pe
Min. :0.0000	Min. : 1.00	Min. : 0.45	Min. : 1.97
1st Qu.:0.4006	1st Qu.: 25.00	1st Qu.: 3.88	1st Qu.:10.53
Median :0.5637	Median : 50.00	Median : 8.72	Median :16.75
Mean :0.5423	Mean : 50.38	Mean :10.62	Mean :20.42
3rd Qu.:0.6955	3rd Qu.: 75.00	3rd Qu.:15.38	3rd Qu.:27.48
Max. :0.8816	Max. :100.00	Max. :46.76	Max. :75.48
NA's :1	NA's :1	NA's :5	NA's :1

POC_percen	transporta	unemploy_2	housing_pe
Min. : 7.54	Min. :10.00	Min. : 1.000	Min. :15.14
1st Qu.:23.36	1st Qu.:18.00	1st Qu.: 3.350	1st Qu.:27.34
Median :36.29	Median :19.00	Median : 4.480	Median :32.26
Mean :38.64	Mean :18.97	Mean : 5.099	Mean :33.75
3rd Qu.:51.01	3rd Qu.:21.00	3rd Qu.: 6.460	3rd Qu.:39.13
Max. :92.70	Max. :26.00	Max. :24.400	Max. :81.89
NA's :1	NA's :1	NA's :3	NA's :1

traffic_pe	diesel	ozone	PM25
Min. : 0.00	Min. : 0.14	Min. :46.73	Min. :3.787
1st Qu.: 0.00	1st Qu.: 6.65	1st Qu.:48.91	1st Qu.:5.642
Median : 3.60	Median :12.65	Median :49.78	Median :6.180
Mean :16.07	Mean :17.10	Mean :50.62	Mean :6.186
3rd Qu.:26.17	3rd Qu.:18.99	3rd Qu.:51.28	3rd Qu.:6.872
Max. :97.75	Max. :92.63	Max. :62.89	Max. :7.897
NA's :1	NA's :1	NA's :1	NA's :1

toxic_rele	hazardous_	lead_perce	superfund
Min. : 823.9	Min. :0.02303	Min. : 0.24	Min. :0.03454
1st Qu.: 5180.9	1st Qu.:0.04168	1st Qu.: 6.46	1st Qu.:0.07358
Median :10186.5	Median :0.05160	Median :13.79	Median :0.13133
Mean :19398.3	Mean :0.08190	Mean :17.08	Mean :0.24645
3rd Qu.:20058.1	3rd Qu.:0.09280	3rd Qu.:26.20	3rd Qu.:0.28436
Max. :186434.6	Max. :0.63781	Max. :54.68	Max. :1.46778
NA's :1	NA's :1	NA's :1	NA's :1

facilities	wastewater	sen_pop_pe	socio_perc
Min. :0.0523	Min. :0.00e+00	Min. : 1.00	Min. : 1.00
1st Qu.:0.1612	1st Qu.:5.50e-06	1st Qu.: 25.00	1st Qu.: 25.00
Median :0.3652	Median :5.30e-04	Median : 50.00	Median : 50.00
Mean :0.6046	Mean :2.62e-02	Mean : 50.38	Mean : 50.38
3rd Qu.:0.9119	3rd Qu.:8.70e-03	3rd Qu.: 75.00	3rd Qu.: 75.00
Max. :3.3682	Max. :6.40e-01	Max. :100.00	Max. :100.00
NA's :1	NA's :1	NA's :1	NA's :1

geometry
POLYGON :398
epsg:2926 : 0
+proj=lcc ...: 0

```
summary(kc_tracts10_shore_env_var)
```

id	date	price
Length:21436	Min. :2014-05-02 00:00:00.00	Min. : 75000
Class :character	1st Qu.:2014-07-22 00:00:00.00	1st Qu.: 324866
Mode :character	Median :2014-10-17 00:00:00.00	Median : 450000
	Mean :2014-10-29 17:30:02.34	Mean : 541650
	3rd Qu.:2015-02-18 00:00:00.00	3rd Qu.: 645000
	Max. :2015-05-27 00:00:00.00	Max. :7700000

bedrooms	bathrooms	sqft_living	sqft_lot
Min. : 0.000	Min. :0.000	Min. : 290	Min. : 520
1st Qu.: 3.000	1st Qu.:1.750	1st Qu.: 1430	1st Qu.: 5040
Median : 3.000	Median :2.250	Median : 1920	Median : 7614
Mean : 3.372	Mean :2.117	Mean : 2083	Mean : 15136
3rd Qu.: 4.000	3rd Qu.:2.500	3rd Qu.: 2550	3rd Qu.: 10696
Max. :33.000	Max. :8.000	Max. :13540	Max. :1651359

floors	waterfront	view	condition
Min. :1.000	Min. :0.000000	Min. :0.0000	Min. :1.00
1st Qu.:1.000	1st Qu.:0.000000	1st Qu.:0.0000	1st Qu.:3.00
Median :1.500	Median :0.000000	Median :0.0000	Median :3.00
Mean :1.496	Mean :0.007604	Mean :0.2351	Mean :3.41
3rd Qu.:2.000	3rd Qu.:0.000000	3rd Qu.:0.0000	3rd Qu.:4.00
Max. :3.500	Max. :1.000000	Max. :4.0000	Max. :5.00

grade	sqft_above	sqft_basement	yr_built
-------	------------	---------------	----------

Min. : 1.000	Min. : 290	Min. : 0.0	Min. :1900
1st Qu.: 7.000	1st Qu.:1200	1st Qu.: 0.0	1st Qu.:1952
Median : 7.000	Median :1560	Median : 0.0	Median :1975
Mean : 7.662	Mean :1791	Mean : 291.7	Mean :1971
3rd Qu.: 8.000	3rd Qu.:2220	3rd Qu.: 560.0	3rd Qu.:1997
Max. :13.000	Max. :9410	Max. :4820.0	Max. :2015

yr_renovated	zipcode	sqft_living15	sqft_lot15
Min. : 0.00	Min. :98001	Min. : 399	Min. : 651
1st Qu.: 0.00	1st Qu.:98033	1st Qu.:1490	1st Qu.: 5100
Median : 0.00	Median :98065	Median :1840	Median : 7620
Mean : 84.73	Mean :98078	Mean :1988	Mean : 12786
3rd Qu.: 0.00	3rd Qu.:98117	3rd Qu.:2370	3rd Qu.: 10087
Max. :2015.00	Max. :98199	Max. :6210	Max. :871200

geometry	dist_cbd	dist_cbd_km	GEO_ID_TRT
POINT :21436	Min. : 3751	Min. : 1.143	Length:21436
epsg:2926 : 0	1st Qu.: 31873	1st Qu.: 9.715	Class :character
+proj=lcc ...: 0	Median : 54274	Median :16.543	Mode :character
	Mean : 60875	Mean :18.555	
	3rd Qu.: 83501	3rd Qu.:25.451	
	Max. :253685	Max. :77.323	

FEATURE_ID	TRACT_LBL	TRACT_STR	TRACT_INT
Min. :10153	Length:21436	Length:21436	Min. : 100
1st Qu.:36346	Class :character	Class :character	1st Qu.:10402
Median :44764	Mode :character	Mode :character	Median :24702
Mean :38270			Mean :21224
3rd Qu.:45279			3rd Qu.:31202
Max. :45838			Max. :32800
NA's :25			NA's :25

TRACT_FLT	TRACT_DEL	TRTLABEL_F	TRTLABEL_C
Min. : 1.0	Length:21436	Length:21436	Length:21436
1st Qu.:104.0	Class :character	Class :character	Class :character
Median :247.0	Mode :character	Mode :character	Mode :character
Mean :212.2			
3rd Qu.:312.0			
Max. :328.0			
NA's :25			

TRTLABEL_T	COUNTY_STR	COUNTY_INT	STATE_STR
Length:21436	Length:21436	Min. :33	Length:21436
Class :character	Class :character	1st Qu.:33	Class :character
Mode :character	Mode :character	Median :33	Mode :character
		Mean :33	
		3rd Qu.:33	
		Max. :33	

		NA's	:25	
STATE_INT	LEVEL_1	LEVEL_2	LEVEL_3	
Min. :53	Length:21436	Length:21436	Length:21436	
1st Qu.:53	Class :character	Class :character	Class :character	
Median :53	Mode :character	Mode :character	Mode :character	
Mean :53				
3rd Qu.:53				
Max. :53				
NA's :25				
TRACT_AREA	TRACT_PERI	LOGRECNO	Shape_area	
Min. :2.792e+06	Min. : 8012	Length:21436	Min. :2.792e+06	
1st Qu.:2.485e+07	1st Qu.: 23500	Class :character	1st Qu.:2.281e+07	
Median :4.123e+07	Median : 32920	Mode :character	Median :3.445e+07	
Mean :1.809e+08	Mean : 48212		Mean :1.750e+08	
3rd Qu.:7.308e+07	3rd Qu.: 47962		3rd Qu.:6.628e+07	
Max. :1.526e+10	Max. :738820		Max. :1.526e+10	
NA's :25	NA's :25		NA's :25	
Shape_len	low	mid	high	
Min. : 8012	Min. :0.009298	Min. :0.06768	Min. :0.06129	
1st Qu.: 23204	1st Qu.:0.047091	1st Qu.:0.21668	1st Qu.:0.47602	
Median : 31185	Median :0.074766	Median :0.30219	Median :0.61143	
Mean : 46861	Mean :0.100082	Mean :0.31115	Mean :0.58877	
3rd Qu.: 46624	3rd Qu.:0.133557	3rd Qu.:0.39313	3rd Qu.:0.72987	
Max. :738820	Max. :0.501433	Max. :0.67904	Max. :0.88162	
NA's :25	NA's :25	NA's :25	NA's :25	
EHD_percen	linguist_2	poverty_pe	POC_percen	
Min. : 1.00	Min. : 0.450	Min. : 1.97	Min. : 7.54	
1st Qu.: 19.00	1st Qu.: 3.120	1st Qu.: 8.93	1st Qu.:21.13	
Median : 41.00	Median : 7.000	Median :13.60	Median :33.26	
Mean : 43.64	Mean : 9.003	Mean :16.65	Mean :35.33	
3rd Qu.: 67.00	3rd Qu.:12.730	3rd Qu.:22.95	3rd Qu.:46.34	
Max. :100.00	Max. :40.350	Max. :75.48	Max. :92.70	
NA's :25	NA's :220	NA's :25	NA's :25	
transporta	unemploy_2	housing_pe	traffic_pe	
Min. :12.00	Min. : 1.000	Min. :15.14	Min. : 0.00	
1st Qu.:18.00	1st Qu.: 3.230	1st Qu.:25.64	1st Qu.: 0.00	
Median :20.00	Median : 4.310	Median :30.46	Median : 0.10	
Mean :19.77	Mean : 4.775	Mean :31.37	Mean :11.52	
3rd Qu.:21.00	3rd Qu.: 6.050	3rd Qu.:35.73	3rd Qu.:19.14	
Max. :26.00	Max. :13.620	Max. :64.87	Max. :84.98	
NA's :25	NA's :102	NA's :25	NA's :25	
diesel	ozone	PM25	toxic_rele	
Min. : 0.14	Min. :46.73	Min. :3.787	Min. : 823.9	
1st Qu.: 5.60	1st Qu.:49.24	1st Qu.:5.488	1st Qu.: 4143.8	
Median :10.16	Median :49.97	Median :6.044	Median : 8827.6	
Mean :13.68	Mean :51.17	Mean :6.002	Mean : 17251.1	

3rd Qu.:16.88	3rd Qu.:52.32	3rd Qu.:6.579	3rd Qu.: 17237.2
Max. :92.63	Max. :62.89	Max. :7.897	Max. :186434.6
NA's :25	NA's :25	NA's :25	NA's :25
hazardous_	lead_perce	superfund	facilities
Min. :0.02303	Min. : 0.24	Min. :0.03454	Min. :0.0523
1st Qu.:0.03985	1st Qu.: 5.34	1st Qu.:0.06595	1st Qu.:0.1420
Median :0.05160	Median :11.99	Median :0.11046	Median :0.2680
Mean :0.07409	Mean :16.60	Mean :0.21696	Mean :0.5248
3rd Qu.:0.07891	3rd Qu.:26.48	3rd Qu.:0.23841	3rd Qu.:0.7588
Max. :0.63781	Max. :54.68	Max. :1.46778	Max. :3.3682
NA's :25	NA's :25	NA's :25	NA's :25
wastewater	sen_pop_pe	socio_perc	
Min. :0.000000	Min. : 1.0	Min. : 1.00	
1st Qu.:0.000003	1st Qu.: 25.0	1st Qu.: 20.00	
Median :0.000290	Median : 48.0	Median : 43.00	
Mean :0.016168	Mean : 48.1	Mean : 44.51	
3rd Qu.:0.002900	3rd Qu.: 71.0	3rd Qu.: 67.00	
Max. :0.640000	Max. :100.0	Max. :100.00	
NA's :25	NA's :25	NA's :25	

###Spørsmål_ii. Forklar hvorfor vi har mange flere NA (25 flere) i tracts10_shore enn i tracts10. Ser dere nå hva som går galt med tracts10_shore?

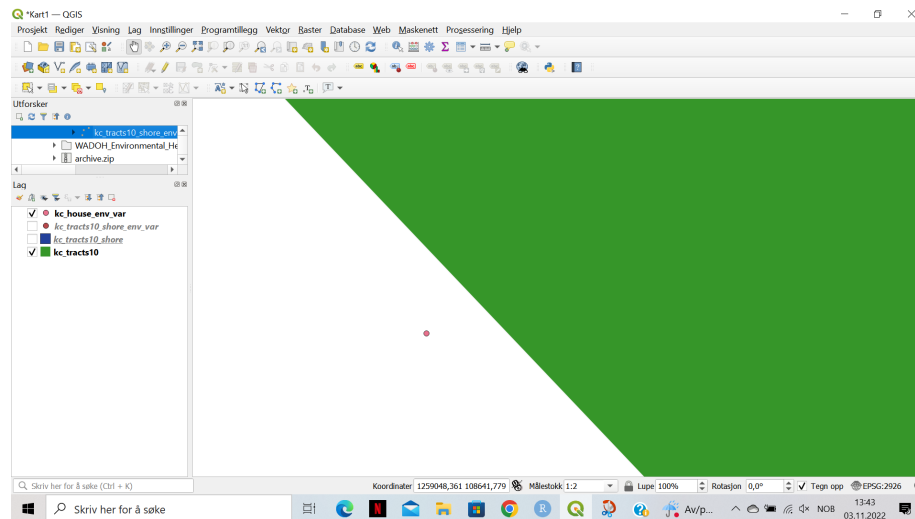


Figure 1: Figur1:Kommunegrense

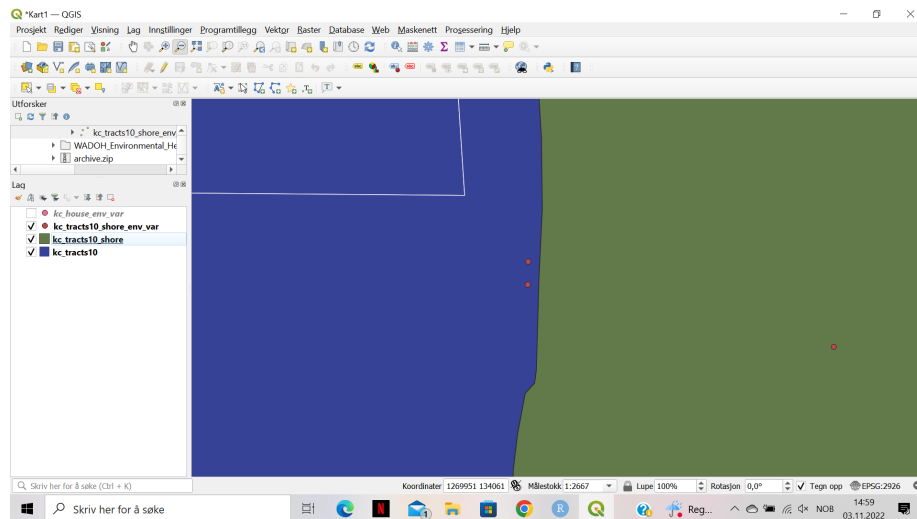


Figure 2: Figur2

Husk å gi bedre navn til figurene!!

```
kc_house_env_var <- arrange(kc_house_env_var, desc(id))
kc_house_env_var_omit <- kc_house_env_var[-c(11997),]
```

```
st_write(kc_house_env_var_omit, "Kart/kc_house_env_var_omit.gpkg", append = FALSE)
```

```
Deleting layer `kc_house_env_var_omit' using driver `GPKG'
Writing layer `kc_house_env_var_omit' to data source
`Kart/kc_house_env_var_omit.gpkg' using driver `GPKG'
Writing 21435 features with 65 fields and geometry type Point.
```

Får ikke til å gjøre om objekte til data.

```
kc_house_env_var_omit <- kc_house_env_var_omit %>%
  mutate(year_month = substr(date, start = 1, stop = 7))
```

```
st_write(kc_house_env_var_omit, "Kart/kc_house_env_var_omit.gpkg", append = FALSE)
```

```
Deleting layer `kc_house_env_var_omit' using driver `GPKG'
```