Fredonia, NY: Road Speeds

```
library(dplyr)
library(readr)
library(ggplot2)
Speed_Stats_Temple <-
read_csv("C:/Users/jakem/Dropbox/PC/Downloads/Speed_Stats_Temple.csv")

head(Speed_Stats_Temple)

## # A tibble: 6 × 43
##   COUNT_ID REGION REGIO...¹ COUNT...² STATION  RCSTA FUNCT...³ FACTO...⁴
LATIT...⁵ LONGI...⁶
##   <chr>    <chr>    <dbl>   <dbl>   <dbl>  <dbl>   <dbl>   <dbl>   <dbl>
<dbl>
## 1 521315_... 05           5       2    1315 521315      16      30    NA
NA
## 2 521315_... 05           5       2    1315 521315      16      30    NA
NA
## 3 521315_... 05           5       2    1315 521315      16      30    NA
NA
## 4 521315_... 05           5       2    1315 521315      16      30    42.4
-79.3
## 5 521315_... 05           5       2    1315 521315      16      30    42.4
-79.3
## 6 521315_... 05           5       2    1315 521315      16      30    42.4
-79.3
## # … with 33 more variables: SPECIFIC_RECORDER_PLACEMENT <chr>,
## #   CHANNEL_NOTES <chr>, DATA_TYPE <chr>, SPEED_LIMIT <dbl>, YEAR_ <dbl>,
## #   MONTH_ <dbl>, DAY_OF_FIRST_DATA <dbl>, FEDERAL_DIRECTION <chr>,
## #   FULL_COUNT <chr>, AVG_WKDAY_BIN_1 <dbl>, AVG_WKDAY_BIN_2 <dbl>,
## #   AVG_WKDAY_BIN_3 <dbl>, AVG_WKDAY_BIN_4 <dbl>, AVG_WKDAY_BIN_5 <dbl>,
## #   AVG_WKDAY_BIN_6 <dbl>, AVG_WKDAY_BIN_7 <dbl>, AVG_WKDAY_BIN_8 <dbl>,
## #   AVG_WKDAY_BIN_9 <dbl>, AVG_WKDAY_BIN_10 <dbl>, AVG_WKDAY_BIN_11 <dbl>,
…

Temple <- Speed_Stats_Temple%>%
  select(YEAR_, FEDERAL_DIRECTION, AVG_WKDAY_TOTALS,
FIFTYTH_PERCENTILE_SPEED, EIGHTYFIVETH_PERCENTILE_SPEED)
head(Temple)

## # A tibble: 6 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                    <dbl>
<dbl>
## 1  2010 Northbound                    2373                       31
34
```

```
## 2  2010 Southbound                    2351                          31
35
## 3  2010 Combined Total                4724                          31
35
## 4  2016 Northbound                    3120                          33
38
## 5  2016 Southbound                    2964                          32
36
## 6  2016 Combined Total                6084                          32
37
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
Temple_Combined <- Temple%>%
  filter(FEDERAL_DIRECTION == "Combined Total")
head(Temple_Combined)
```

```
## # A tibble: 3 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                    <dbl>
<dbl>
## 1  2010 Combined Total                4724                       31
35
## 2  2016 Combined Total                6084                       32
37
## 3  2019 Combined Total                6365                       31
35
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
ggplot(data = Temple_Combined, aes((x=factor(YEAR_, 2010:2019))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Median Car Speed on
Temple Street (2010 to 2019)") + scale_x_discrete('Year',
breaks=factor(2010:2019), drop=FALSE)
```

```
ggplot(data = Temple_Combined, aes((x=factor(YEAR_, 2010:2019))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("85th Percentile
Car Speed on Temple Street (2010 to 2019)") + scale_x_discrete('Year',
breaks=factor(2010:2019), drop=FALSE)
```

```
Temple_North <- Temple%>%
  filter(FEDERAL_DIRECTION == "Northbound")
head(Temple_North)
```

```
## # A tibble: 3 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
```

```
##   <dbl> <chr>                          <dbl>                       <dbl>
<dbl>
## 1  2010 Northbound                      2373                          31
34
## 2  2016 Northbound                      3120                          33
38
## 3  2019 Northbound                      3244                          32
36
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
ggplot(data = Temple_North, aes((x=factor(YEAR_, 2010:2019))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Northbound Median Car
Speed on Temple Street(2010 to 2019)") + scale_x_discrete('Year',
breaks=factor(2010:2019), drop=FALSE)
```

```
ggplot(data = Temple_North, aes((x=factor(YEAR_, 2010:2019))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("Northbound 85th
Percentile Car Speed on Temple Street (2010 to 2019)") +
scale_x_discrete('Year', breaks=factor(2010:2019), drop=FALSE)
```

```
Temple_South <- Temple%>%
  filter(FEDERAL_DIRECTION == "Southbound")
head(Temple_South)
```

```
## # A tibble: 3 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE…¹
##   <dbl> <chr>                          <dbl>                       <dbl>
<dbl>
## 1  2010 Southbound                      2351                          31
35
## 2  2016 Southbound                      2964                          32
36
## 3  2019 Southbound                      3121                          31
35
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
ggplot(data = Temple_South, aes((x=factor(YEAR_, 2010:2019))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Southbound Median Car
Speed on Temple Street (2010 to 2019)") + scale_x_discrete('Year',
breaks=factor(2010:2019), drop=FALSE)
```

```
ggplot(data = Temple_South, aes((x=factor(YEAR_, 2010:2019))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("Southbound 85th
Percentile Car Speed on Temple Street (2010 to 2019)") +
scale_x_discrete('Year', breaks=factor(2010:2019), drop=FALSE)
```

```
Speed_Stats_Brigham <-
read_csv("C:/Users/jakem/Dropbox/PC/Downloads/Speed_Stats_Brigham.csv")
Brigham <- Speed_Stats_Brigham%>%
  select(YEAR_, FEDERAL_DIRECTION, AVG_WKDAY_TOTALS,
FIFTYTH_PERCENTILE_SPEED, EIGHTYFIVETH_PERCENTILE_SPEED)
head(Brigham)
```

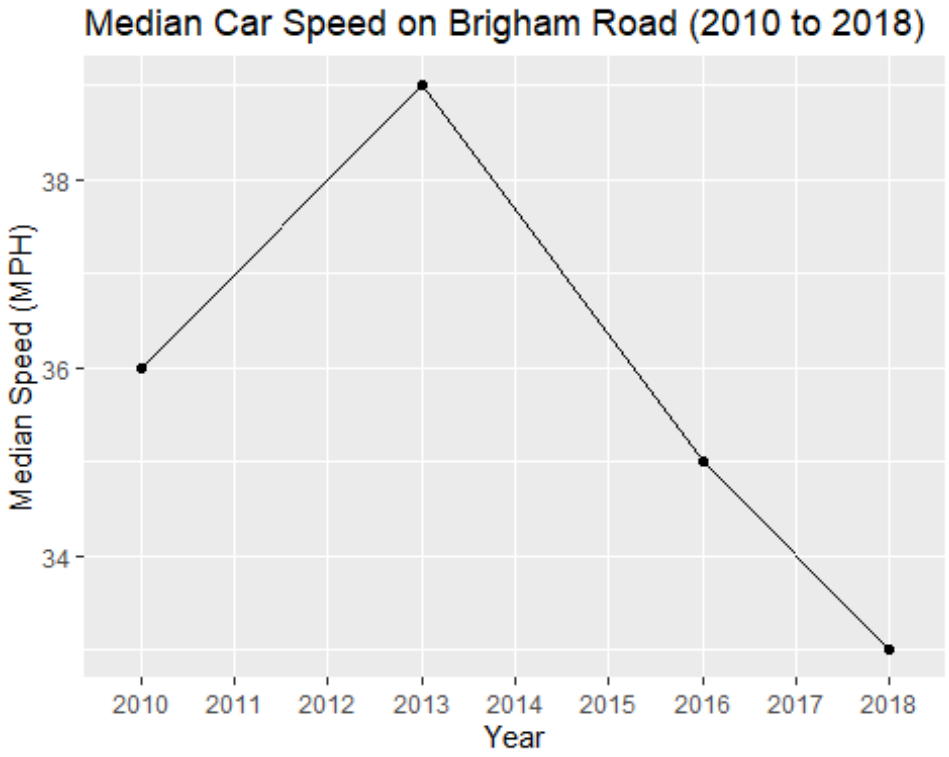
```
## # A tibble: 6 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                     <dbl>
<dbl>
## 1  2010 Northbound                    2506                        37
42
## 2  2010 Southbound                    2545                        35
40
## 3  2010 Combined Total                5051                        36
41
## 4  2013 Northbound                    2376                        39
44
## 5  2013 Southbound                    2467                        38
43
## 6  2013 Combined Total                4843                        39
44
## # ... with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
Brigham_Combined <- Brigham%>%
  filter(FEDERAL_DIRECTION == "Combined Total")
head(Brigham_Combined)
```

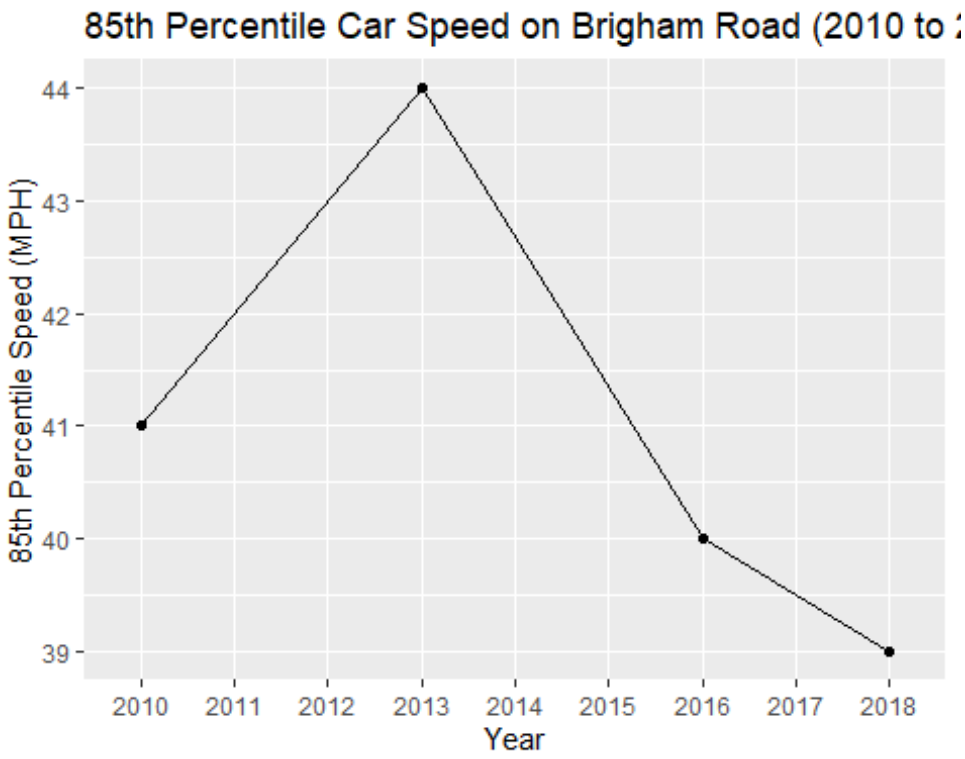
```
## # A tibble: 4 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                     <dbl>
<dbl>
## 1  2010 Combined Total                5051                        36
41
## 2  2013 Combined Total                4843                        39
44
## 3  2016 Combined Total                4942                        35
40
## 4  2018 Combined Total                4595                        33
```

```
39
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED

ggplot(data = Brigham_Combined, aes((x=factor(YEAR_, 2010:2018))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Median Car Speed on
Brigham Road (2010 to 2018)") + scale_x_discrete('Year',
breaks=factor(2010:2018), drop=FALSE)
```



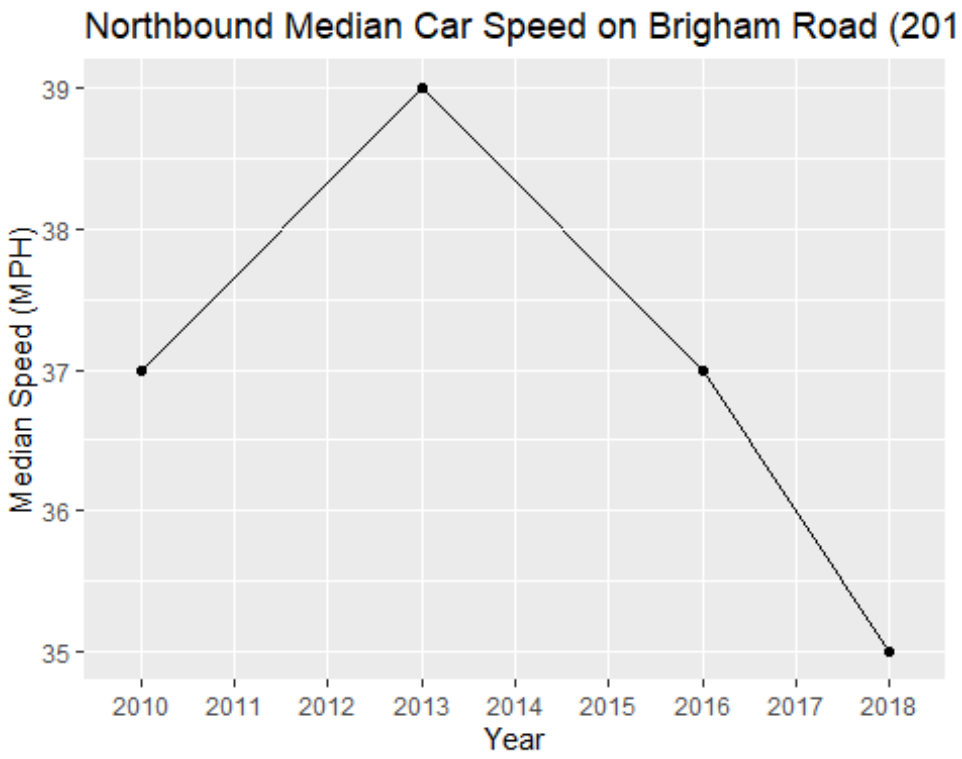

```
ggplot(data = Brigham_Combined, aes((x=factor(YEAR_, 2010:2018))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("85th Percentile
Car Speed on Brigham Road (2010 to 2018)") + scale_x_discrete('Year',
breaks=factor(2010:2018), drop=FALSE)
```



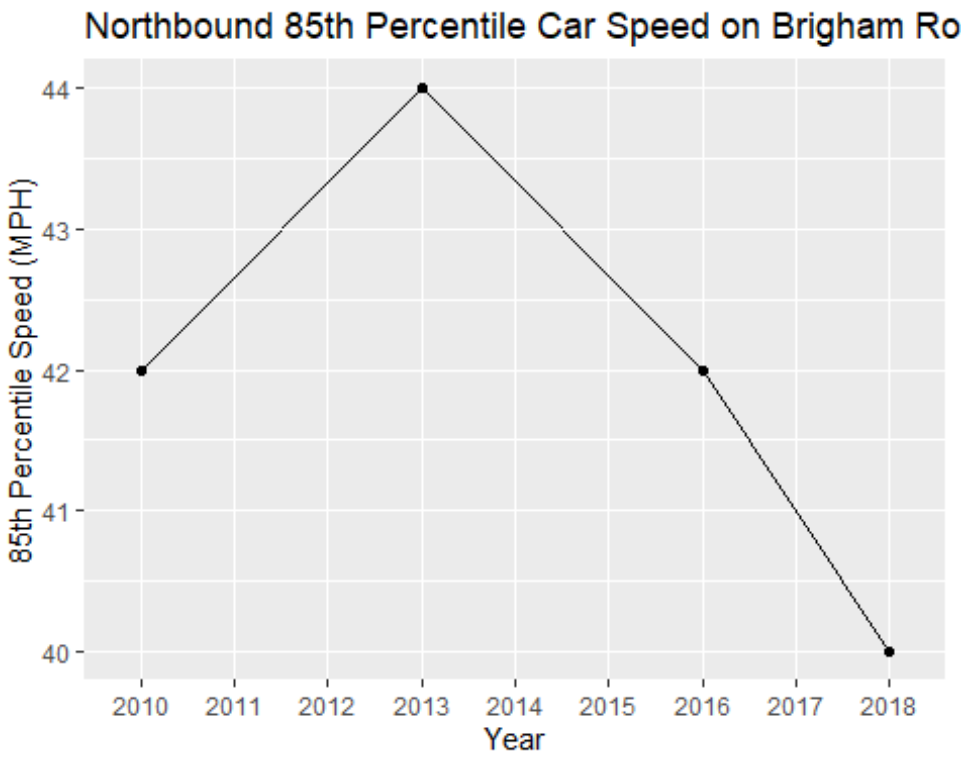

```
Brigham_North <- Brigham%>%
  filter(FEDERAL_DIRECTION == "Northbound")
head(Brigham_North)
```

```
## # A tibble: 4 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                     <dbl>
<dbl>
## 1  2010 Northbound                    2506                        37
42
## 2  2013 Northbound                    2376                        39
44
## 3  2016 Northbound                    2473                        37
42
## 4  2018 Northbound                    2271                        35
40
## # … with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

```
ggplot(data = Brigham_North, aes((x=factor(YEAR_, 2010:2018))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Northbound Median Car
Speed on Brigham Road (2010 to 2018)") + scale_x_discrete('Year',
breaks=factor(2010:2018), drop=FALSE)
```



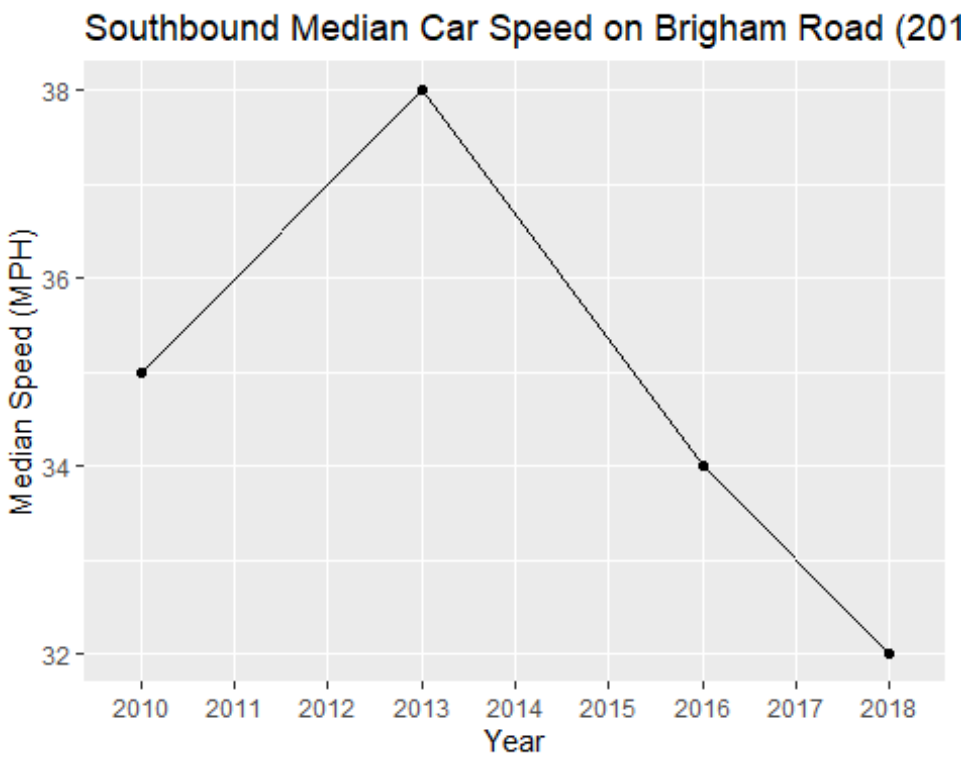

```
ggplot(data = Brigham_North, aes((x=factor(YEAR_, 2010:2018))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("Northbound 85th
Percentile Car Speed on Brigham Road (2010 to 2018)") +
scale_x_discrete('Year', breaks=factor(2010:2018), drop=FALSE)
```



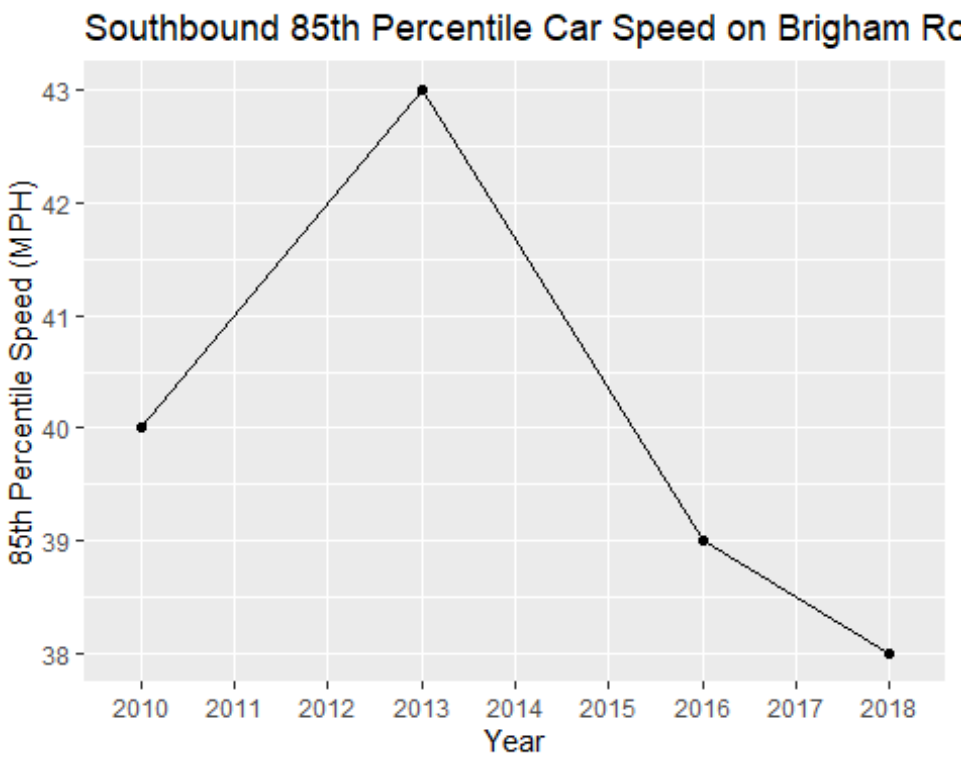

```
Brigham_South <- Brigham%>%
  filter(FEDERAL_DIRECTION == "Southbound")
head(Brigham_South)
```

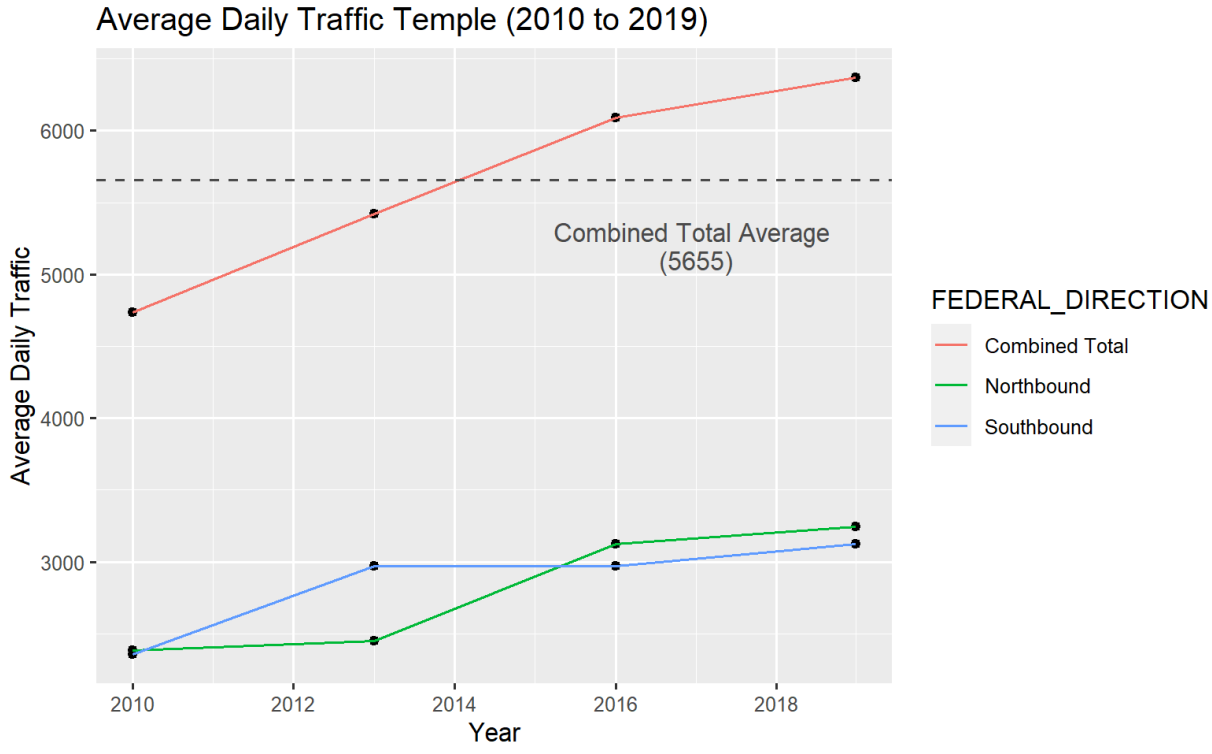
```
## # A tibble: 4 × 5
##   YEAR_ FEDERAL_DIRECTION AVG_WKDAY_TOTALS FIFTYTH_PERCENTILE_SPEED
EIGHTYFIVE...¹
##   <dbl> <chr>                        <dbl>                     <dbl>
<dbl>
## 1  2010 Southbound                    2545                        35
40
## 2  2013 Southbound                    2467                        38
43
## 3  2016 Southbound                    2469                        34
39
## 4  2018 Southbound                    2324                        32
38
## # ... with abbreviated variable name ¹EIGHTYFIVETH_PERCENTILE_SPEED
```

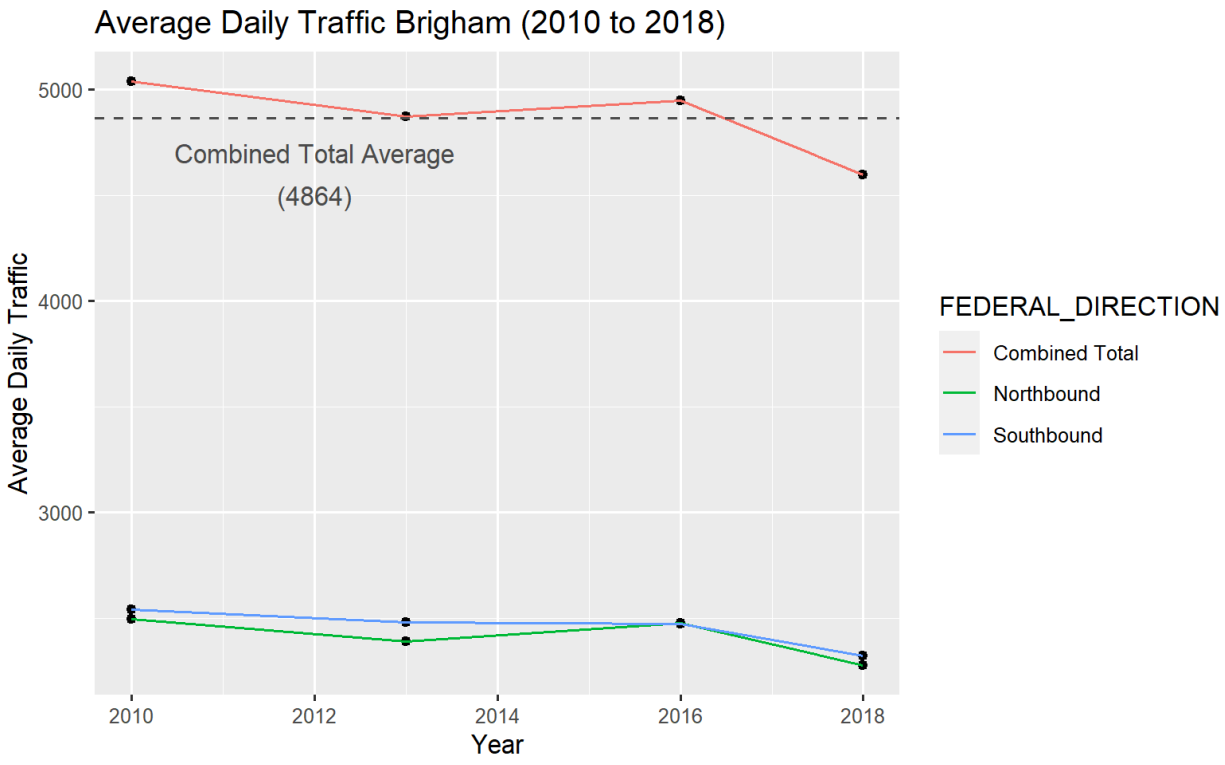
```
ggplot(data = Brigham_South, aes((x=factor(YEAR_, 2010:2018))
,y=FIFTYTH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("Median Speed (MPH)") + ggtitle("Southbound Median Car
Speed on Brigham Road (2010 to 2018)") + scale_x_discrete('Year',
breaks=factor(2010:2018), drop=FALSE)
```




```
ggplot(data = Brigham_South, aes((x=factor(YEAR_, 2010:2018))
,y=EIGHTYFIVETH_PERCENTILE_SPEED, group = 1)) + geom_point() + geom_line() +
xlab("Year") + ylab("85th Percentile Speed (MPH)") + ggtitle("Southbound 85th
Percentile Car Speed on Brigham Road (2010 to 2018)") +
scale_x_discrete('Year', breaks=factor(2010:2018), drop=FALSE)
```


Southbound 85th Percentile Car Speed on Brigham Rc
85th Percentile Speed (MPH)
43
42
41
40
39
38
2010
2011
2012
2013
2014
2015
2016
2017
2018
Year


Average Daily Traffic Temple (2010 to 2019)
Average Daily Traffic
6000
5000
4000
3000
Combined Total Average
(5655)
2010
2012
2014
2016
2018
Year
FEDERAL_DIRECTION
Combined Total
Northbound
Southbound


Average Daily Traffic Brigham (2010 to 2018)
Average Daily Traffic
5000
4000
3000
Combined Total Average
(4864)
2010
2012
2014
2016
2018
Year
FEDERAL_DIRECTION
Combined Total
Northbound
Southbound