atx_traffic

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```
library(ggplot2)

df <- read.csv('fm973_tx71-benwhite_riverside-timechunks.csv')
head(df)
```

```
##       time timechunk weekday_num_samples weekend_num_samples weekday_speed
## 1 00:00:00         0            6.598540            7.372549      36.83850
## 2 00:15:00         1            6.835714            7.934783      39.22675
## 3 00:30:00         2            6.457143            8.021277      41.13274
## 4 00:45:00         3            5.543478            7.804348      43.17908
## 5 01:00:00         4            5.793651            6.460000      41.60822
## 6 01:15:00         5            4.782946            6.553191      43.52026
##   weekend_speed weekday_travel_time weekend_travel_time weekday_pooled_sd_mph
## 1      35.03989            386.3164            501.2074              96.02986
## 2      38.56438            357.5664            410.4082              93.66957
## 3      36.97347            336.8186            414.9735             101.40682
## 4      36.18942            320.0157            469.7493              93.25726
## 5      38.20124            351.9438            405.6966             119.68347
## 6      42.29221            328.3809            367.2727              97.98312
##   weekend_pooled_sd_mph
## 1              73.66196
## 2              47.35261
## 3              84.92031
## 4              69.92142
## 5              82.37283
## 6              83.29715
```

```
library(scales)

plot <- ggplot(df, aes(x=as.POSIXct(hms::parse_hm(time)))) +
  geom_point(aes(y = weekday_num_samples, col="Weekday"), alpha=0.4) +
  geom_point(aes(y = weekend_num_samples, col="Weekend"), alpha=0.4) +
  geom_smooth(aes(y = weekday_num_samples, col="Weekday"),span = 0.3) +
  geom_smooth(aes(y = weekend_num_samples, col="Weekend"),span = 0.3) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  scale_x_datetime(breaks=date_breaks("1 hour"), date_labels = "%H:%M") +
  xlab("Time of Day") +
  ylab("Number of Observed Vehicles per 15 min") +
  ggtitle("Traffic Volume: Ben White Blvd") +
  scale_color_manual(name="Day",
                     labels = c("Weekday",
```

```
                                    "Weekend"),
                         values = c("Weekday"="darkred",
                                    "Weekend"="steelblue")) +
  ggsave("TrafficVolume.png")
```

```
## Saving 6.5 x 4.5 in image
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
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```
plot
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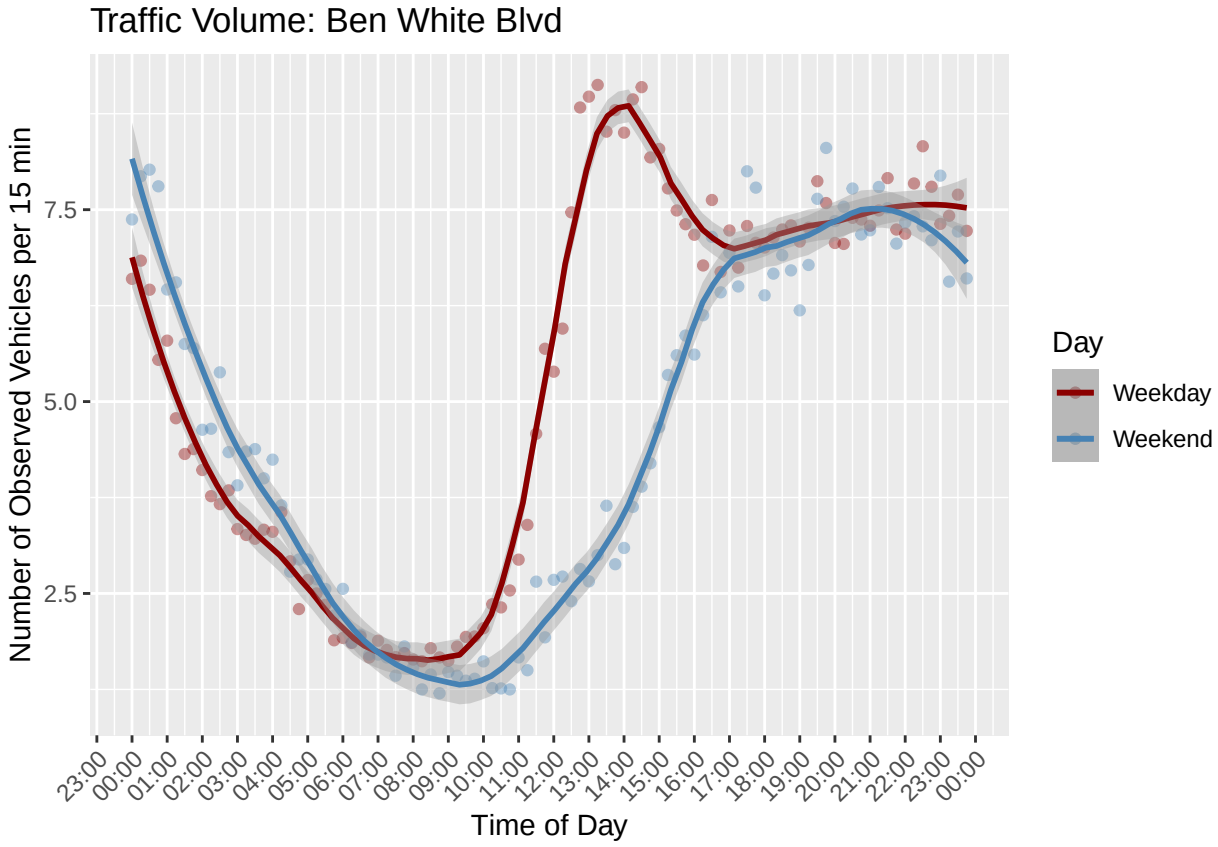


```
plot <- ggplot(df, aes(x=as.POSIXct(hms::parse_hm(time)))) +
  geom_point(aes(y = weekday_speed, col="Weekday"), alpha=0.4) +
  geom_point(aes(y = weekend_speed, col="Weekend"), alpha=0.4) +
  geom_smooth(aes(y = weekday_speed, col="Weekday"),span = 0.3) +
  geom_smooth(aes(y = weekend_speed, col="Weekend"),span = 0.3) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  scale_x_datetime(breaks=date_breaks("1 hour"), date_labels = "%H:%M") +
  xlab("Time of Day") +
  ylab("Average Speed (mph)") +
```

```
  ggtitle("Average Speed: Ben White Blvd") +
  scale_color_manual(name="Day",
                         labels = c("Weekday",
                                    "Weekend"),
                         values = c("Weekday"="darkred",
                                    "Weekend"="steelblue"))+
  ggsave("TrafficSpeed.png")
```

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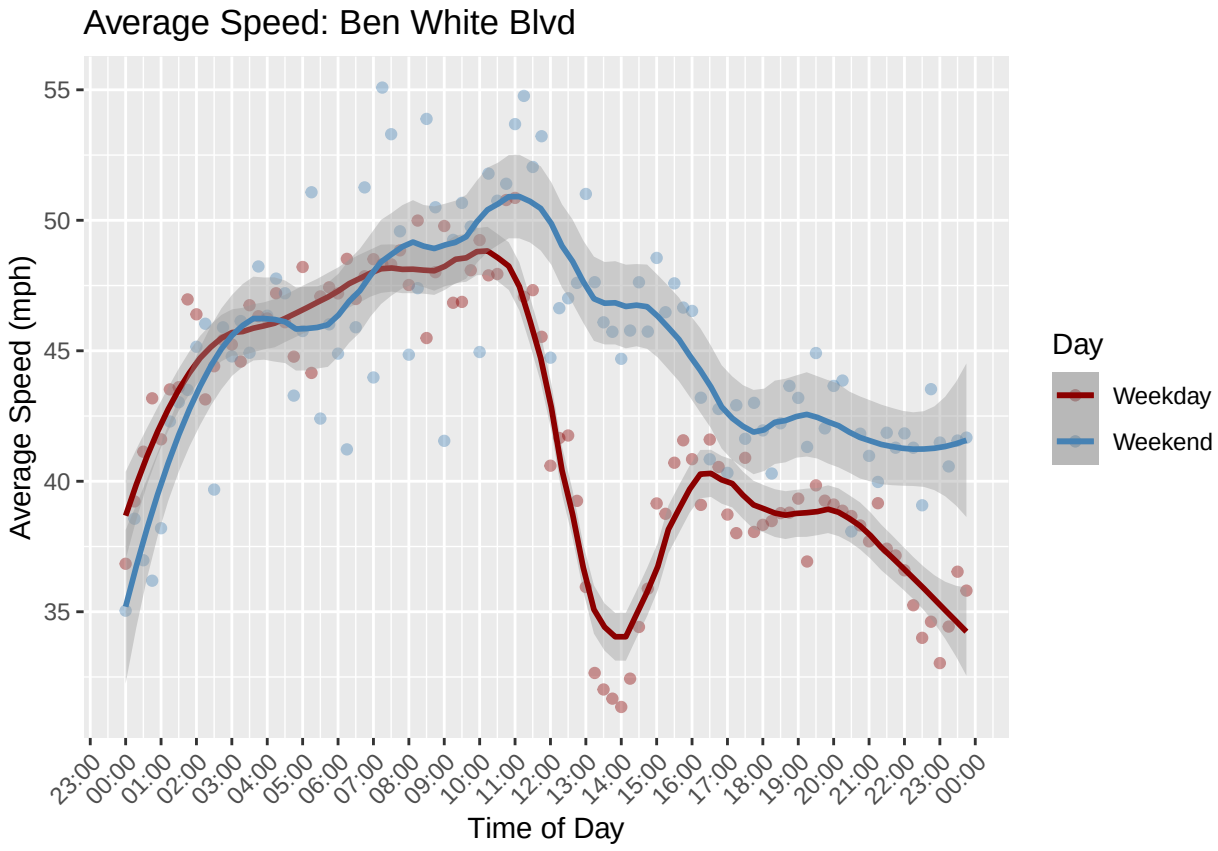


```
plot <- ggplot(df, aes(x=as.POSIXct(hms::parse_hm(time)))) +
  geom_point(aes(y = weekday_travel_time, col="Weekday"), alpha=0.4) +
  geom_point(aes(y = weekend_travel_time, col="Weekend"), alpha=0.4) +
  geom_smooth(aes(y = weekday_travel_time, col="Weekday"),span = 0.3) +
  geom_smooth(aes(y = weekend_travel_time, col="Weekend"),span = 0.3) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
```

```
  scale_x_datetime(breaks=date_breaks("1 hour"), date_labels = "%H:%M") +
  xlab("Time of Day") +
  ylab("Average Travel Time (sec)") +
  ggtitle("Average Travel Time: Ben White Blvd") +
  scale_color_manual(name="Day",
                     labels = c("Weekday",
                                "Weekend"),
                     values = c("Weekday"="darkred",
                                "Weekend"="steelblue")) +
  ggsave("TrafficTravelTime.png")
```

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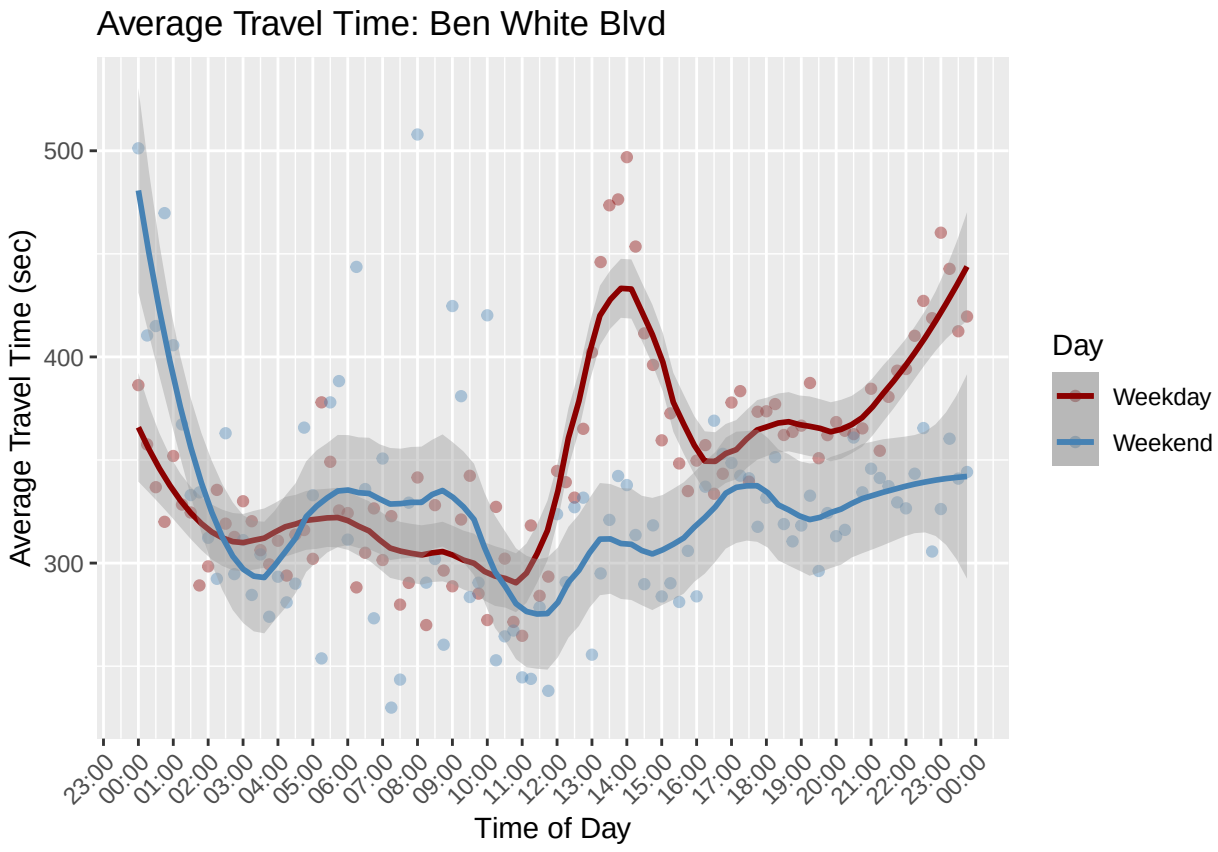


```
plot <- ggplot(df, aes(x=as.POSIXct(hms::parse_hm(time)))) +
  geom_point(aes(y = weekday_pooled_sd_mph, col="Weekday"), alpha=0.4) +
  geom_point(aes(y = weekend_pooled_sd_mph, col="Weekend"), alpha=0.4) +
```

```
  geom_smooth(aes(y = weekday_pooled_sd_mph, col="Weekday"),span = 0.3) +
  geom_smooth(aes(y = weekend_pooled_sd_mph, col="Weekend"),span = 0.3) +
  theme(axis.text.x = element_text(angle = 45, hjust = 1)) +
  scale_x_datetime(breaks=date_breaks("1 hour"), date_labels = "%H:%M") +
  xlab("Time of Day") +
  ylab("Speed Pooled Standard Deviation ") +
  ggtitle("Standard Deviation for Travel Speed: Ben White Blvd") +
  scale_color_manual(name="Day",
                     labels = c("Weekday",
                                "Weekend"),
                     values = c("Weekday"="darkred",
                                "Weekend"="steelblue")) +
  ggsave("TrafficSpeedSD.png")
```

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