

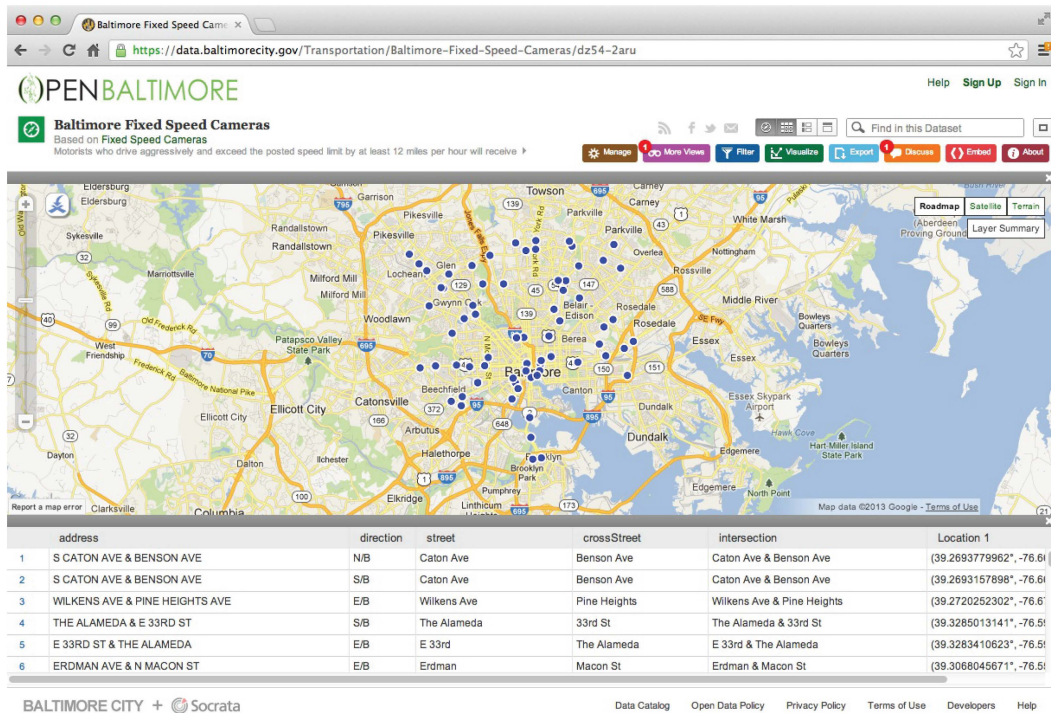


# Reading local flat files

Jeffrey Leek

Johns Hopkins Bloomberg School of Public Health

# Example - Baltimore camera data



<https://data.baltimorecity.gov/Transportation/Baltimore-Fixed-Speed-Cameras/dz54-2aru>

# Download the file to load

```
if (!file.exists("data")) {  
  dir.create("data")  
}  
fileUrl <- "https://data.baltimorecity.gov/api/views/dz54-2aru/rows.csv?accessType=DOWNLOAD"  
download.file(fileUrl, destfile = "cameras.csv", method = "curl")  
dateDownloaded <- date()
```

# Loading flat files - `read.table()`

- This is the main function for reading data into R
- Flexible and robust but requires more parameters
- Reads the data into RAM - big data can cause problems
- Important parameters *file*, *header*, *sep*, *row.names*, *nrows*
- Related: *read.csv()*, *read.csv2()*

# Baltimore example

```
cameraData <- read.table("../data/cameras.csv")
```

```
## Error: line 1 did not have 13 elements
```

```
head(cameraData)
```

```
## Error: object 'cameraData' not found
```

# Example: Baltimore camera data

```
cameraData <- read.table("../data/cameras.csv", sep = ",", header = TRUE)
head(cameraData)
```

```
##              address direction    street crossStreet
## 1      S CATON AVE & BENSON AVE    N/B   Caton Ave   Benson Ave
## 2      S CATON AVE & BENSON AVE    S/B   Caton Ave   Benson Ave
## 3 WILKENS AVE & PINE HEIGHTS AVE    E/B Wilkens Ave Pine Heights
## 4      THE ALAMEDA & E 33RD ST    S/B The Alameda    33rd St
## 5      E 33RD ST & THE ALAMEDA    E/B      E 33rd The Alameda
## 6      ERDMAN AVE & N MACON ST    E/B    Erdman    Macon St
##              intersection              Location.1
## 1    Caton Ave & Benson Ave (39.2693779962, -76.6688185297)
## 2    Caton Ave & Benson Ave (39.2693157898, -76.6689698176)
## 3 Wilkens Ave & Pine Heights (39.2720252302, -76.676960806)
## 4    The Alameda  & 33rd St (39.3285013141, -76.5953545714)
## 5      E 33rd  & The Alameda (39.3283410623, -76.5953594625)
## 6      Erdman  & Macon St (39.3068045671, -76.5593167803)
```

# Example: Baltimore camera data

read.csv sets *sep*="," and *header*=TRUE

```
cameraData <- read.csv("./data/cameras.csv")
head(cameraData)
```

```
##              address direction    street crossStreet
## 1      S CATON AVE & BENSON AVE      N/B   Caton Ave   Benson Ave
## 2      S CATON AVE & BENSON AVE      S/B   Caton Ave   Benson Ave
## 3 WILKENS AVE & PINE HEIGHTS AVE      E/B Wilkens Ave Pine Heights
## 4      THE ALAMEDA & E 33RD ST      S/B The Alameda    33rd St
## 5      E 33RD ST & THE ALAMEDA      E/B      E 33rd   The Alameda
## 6      ERDMAN AVE & N MACON ST      E/B      Erdman    Macon St
##              intersection              Location.1
## 1   Caton Ave & Benson Ave (39.2693779962, -76.6688185297)
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## 6     Erdman  & Macon St (39.3068045671, -76.5593167803)
```

# Some more important parameters

- *quote* - you can tell R whether there are any quoted values `quote=""` means no quotes.
- *na.strings* - set the character that represents a missing value.
- *nrows* - how many rows to read of the file (e.g. `nrows=10` reads 10 lines).
- *skip* - number of lines to skip before starting to read

*In my experience, the biggest trouble with reading flat files are quotation marks ` or " placed in data values, setting `quote=""` often resolves these.*