

# Gerrymandering Metrics

## 2024 Election Results and the 2024 District Map

```
library(tidyverse)
```

```
— Attaching core tidyverse packages — tidyverse 2.0.0
—
✓ dplyr      1.1.4    ✓ readr      2.1.5
✓ forcats    1.0.0    ✓ stringr    1.5.2
✓ ggplot2    4.0.0    ✓ tibble     3.3.0
✓ lubridate  1.9.4    ✓ tidyr      1.3.1
✓ purrr      1.1.0
— Conflicts — tidyverse_conflicts()
—
* dplyr::filter() masks stats::filter()
* dplyr::lag()     masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all
conflicts to become errors
```

```
df <- read_csv("cleaned_g24_precinct_votes.csv")
```

Rows: 51123 Columns: 76

— Column specification

Delimiter: ",",

chr (49): svprec, fips, svprec\_key, election, geo\_type, assaip01,  
assdem01, ...

dbl (27): county, addist, cddist, sddist, bedist, totreg, demreg, repreg,  
ai...

i Use `spec()` to retrieve the full column specification for this data.

i Specify the column types or set `show\_col\_types = FALSE` to quiet this  
message.

```
dist <- df %>%
  group_by(cddist) %>%
  summarise(
    dem = sum(demvote, na.rm = TRUE),
    rep = sum(repvote, na.rm = TRUE)
  ) %>%
```

```

mutate(
  total = dem + rep,
  share = dem / total
)

mm <- mean(dist$share, na.rm = TRUE) - median(dist$share, na.rm = TRUE)

dist <- dist %>%
  mutate(
    d_waste = if_else(dem > rep, dem - total/2, dem),
    r_waste = if_else(rep > dem, rep - total/2, rep)
  )

eg <- (sum(dist$d_waste) - sum(dist$r_waste)) / sum(dist$total)

results_2024 <- tibble(
  districts = nrow(dist),
  mean_share = mean(dist$share),
  median_share = median(dist$share),
  mean_median = mm,
  efficiency_gap = eg
)

results_2024

```

```

# A tibble: 1 × 5
  districts mean_share median_share mean_median efficiency_gap
    <int>      <dbl>      <dbl>      <dbl>      <dbl>
1      53      NaN      NA      NA      NaN

```

## 2024 Election Results and the proposed 2025 District Map

```

df_2025 <- df %>%
  mutate(district = addist)

dist_2025 <- df_2025 %>%
  group_by(district) %>%
  summarise(
    dem = sum(demvote, na.rm = TRUE),
    rep = sum(repvote, na.rm = TRUE)
  ) %>%
  mutate(
    total = dem + rep,
    share = dem / total
  )

mm_2025 <- mean(dist_2025$share, na.rm = TRUE) - median(dist_2025$share, na.rm

```

```

= TRUE)

dist_2025 <- dist_2025 %>%
  mutate(
    d_waste = if_else(dem > rep, dem - total/2, dem),
    r_waste = if_else(rep > dem, rep - total/2, rep)
  )

eg_2025 <- (sum(dist_2025$d_waste) - sum(dist_2025$r_waste)) /
sum(dist_2025$total)

results_2025 <- tibble(
  districts = nrow(dist_2025),
  mean_share = mean(dist_2025$share),
  median_share = median(dist_2025$share),
  mean_median = mm_2025,
  efficiency_gap = eg_2025
)

results_2025

```

```

# A tibble: 1 × 5
  districts mean_share median_share mean_median efficiency_gap
  <int>      <dbl>      <dbl>      <dbl>      <dbl>
1       81       NaN        NA        NA        NaN

```