

# Attendance at the 2017 Women's March San Diego, using auditable and transparent crowd size estimation methodology

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## Introduction

Police and media estimates of attendance at the 2017 Women's March were varied, and none were supported by a transparent methodology that would allow the public to audit these estimates. However, procedures developed by researchers [Herbert Jacobs](#) in the 1960s, and more recently by [Austin Choi-Fitzpatrick et. al.](#) and [Paul Yip](#) have provided the basis for development of a [relatively simple method](#) that relies on geospatial analysis of photos and videos, as well as crowd flow analysis to provide more accurate and verifiable estimates.

Using this methodology, the estimated attendance at the 2017 Women's March San Diego (WMSD) ranged between 106,000 and 122,000 participants based on a combination of low-density and high-density crowd flow over a conservative 60-minute period. One hour after the front of the march reached Waterfront Park marchers were still stuck in the Civic Center waiting to start marching. This estimate includes the Civic Center Plaza and the march route. It does not account for additional crowds beyond 3rd Avenue or those that may have filtered in after the peak hour.

This estimate indicates that the 2017 Women's March San Diego is likely the largest protest march in San Diego history.

## Methods

Estimates were obtained using standard geospatial technique combining:

- Route area analysis (sq ft)
- Estimated crowd density, with adjustments for mixed-density crowd flow over 60 minutes

## 1. Route Analysis:

- **Broadway from 3rd Ave to Harbor Drive** (~2,640 ft @ 70 ft wide)
- **Harbor Drive from Broadway to W Ash St** (~1,056 ft @ 80 ft wide)
- **Civic Center Plaza** (29,926 sq ft)

Therefore, the total area covered by participants (excluding sidewalks and middle-of-the-road medians) was:

- Broadway: 170,000 sq ft
  - Harbor Drive: 76,000 sq ft
  - Civic Center Plaza: 29,926 sq ft
  - **Total Marching Area:** 246,000 sq ft (route) + 29,926 sq ft (static plaza) = **336,166 sq ft**
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## 2. Crowd Density Estimate (30 Minutes Low + 30 Minutes High)

- **Low-density flow (30 min @ 10 sq ft/person):**  $246,000 \div 10 = 24,600$
- **High-density flow (30 min @ 2.5 sq ft/person):**  $246,000 \div 2.5 = 98,400 \times (30/60) = 49,200$
- **Total moving crowd:**  $24,600 + 49,200 = 73,800$  participants
- **Add Civic Center static crowd** ( $29,926 \text{ sq ft} \div 4.5 \text{ sq ft/person} = 6,650$  people)

## Estimated Total Participants:

**Range: 106,000 to 122,000**

**Note:** These figures account for those who marched from 3rd Ave west to Harbor and up to Ash Street, with variable density over time, plus static crowds in Civic Center Plaza. Additional participants who were stuck on the Coaster and other public transportation and could not make it to the event due to the density of crowds were not included in this estimate.

Thanks to Women's March San Diego for providing the evidence used in the above calculations.

Figure 1. Overhead shot of Broadway filled shoulder-to-shoulder with participants.



Figure 2: Ground-level images show high crowd density.



Figure 3: Ground-level images show high crowd density.





Figure 4. Route map

