

Summary of NWA Trail Usage Report
November 2, 2015

Summary Findings:

The study showed that Northwest Arkansas (NWA) had relatively high cyclist user counts per capita aggregated across the top three usage sites when compared to cyclist usage aggregated across the top three usage sites in comparison locations¹. In a comparison to cycling levels (when summing the three highest activity sites for each location) per capita (users per 1,000 population), Northwest Arkansas's usage rate (4.45 cyclists/1K population) is very similar to that of San Francisco (4.78 cyclists/1K population), but is below that of Portland (18.89 cyclists/1K population) and of Minneapolis (40.99 cyclists/1K population). Analysis of cyclist counts by time of day when usage is occurring suggested that the trails are primarily being used by cyclists for recreation and not for commuting². Additionally, the study showed that natural surface trails have significantly lower usage rates than multi-use paths. Natural surface trails have similar volumes of cyclists on weekends and weekdays suggesting even levels of use throughout the week. Finally, there were higher levels of activity in low-income regions of NWA than have been observed in low-income regions of other comparison locations across the US.

Northwest Arkansas also compares favorably to other locations when analyzing pedestrian trail usage. For example, Northwest Arkansas's pedestrian trail usage counts (summed across the three highest pedestrian usage sites for each location) per capita (users per 1,000 population) rate (4.40 pedestrians/1K population) is very similar to that of San Diego County (4.54 pedestrians/1K population), but higher than that of Portland (3.31 pedestrians/1K population). Analysis of pedestrian trail usage counts by time of day when usage is occurring suggested patterns of use similar to what was observed in the cyclist analysis; again the trails are being used for primarily recreational purposes. The relationship between low-income areas and greater pedestrian trail usage was consistent with the cycling trends.

Project Overview:

The Walton Family Foundation has invested in a multi-use and a natural surface trail network throughout the Northwest Arkansas region. As of January 2015, over 97 miles of connected multi-use trail and close to 36 miles of natural surface trail have been constructed. A user count was conducted by Chen Ryan Associates between April and June of 2015. WFF Evaluation staff analyzed the data to generate greater understanding of local demand for trails. Analysis focused on absolute levels of usage by trail type and site and placed counts in context through comparison to benchmark locations.

¹ Comparison cities were chosen by Chen Ryan Associates based on two factors: 1) These locations are recognized as having high levels of resident interest in trail use; and 2) Data collection had already occurred in these locations using a similar methodology across multiple sites. Note: Researchers did not report the months of the year when the trail counts were conducted for comparison locations.

² Note: Only 2 count sites (out of 53) in the study were on-street, which may have contributed to the lower cyclist commuting numbers.

Methodology:

Given the budget and objectives associated with the Northwest Arkansas Trail Monitoring project, the research team selected the following technologies:

- 24-hour Continuous Active Infrared counters (or Pyros), and
- 24-hour Continuous Pneumatic Tubes.

24-hour continuous pyro counters were used to count pedestrian and bicycle activity combined without distinction of mode. Additionally, a combination of 24-hour continuous pyro counters and 24-hour continuous pneumatic tubes was used to count bicycle and pedestrian activity (which is calculated by subtracting bicycle counts collected via the pneumatic tubes from all activity collected via the infrared pyro counters).

Key criteria used to guide the siting of bicycle and pedestrian count stations across the Northwest Arkansas region included: 1) presence of existing trail facilities; 2) achieving a representative sample of locations in relation to population density, employment density, and median household income; and 3) an even geographic distribution of count sites across the 133-mile system.

Key Findings:

Cyclists

The findings indicate that Northwest Arkansas has noteworthy cycling levels. Northwest Arkansas compares favorably to other regions, some of which are considered cycling-prominent cities such as Portland and San Francisco. Comparing cycling levels (summing the three highest activity sites by average daily bicycle volume for each location) per capita (users per 1,000 population), Northwest Arkansas (4.45) is very similar to San Francisco (4.78), trailing only Portland (18.89) and Minneapolis (40.99).

Table 1: Daily Volume of Cyclists per 1,000 Population (user counts reflect top three locations combined)

County (Rank)	Population	Daily Cyclists*	Cyclists/1K
Minneapolis ³ (1)	407,207	16,690	40.99
Portland (2)	619,360	11,700	18.89
San Francisco (3)	852,469	4,074	4.78
NWA (4)	491,966	2,191	4.45
Maricopa County (5)	4,087,191	3,292	0.81
San Diego County (6)	3,263,431	1,800	0.55

**Daily cyclists determined by combining the usage of the top three sites with the highest average daily bicycle volume for each location.*

The study estimated that an average of 67,728 annual cyclists per site are anticipated across the Northwest Arkansas system, with a median of 57,859 bicyclists and a standard deviation of 56,382. The Scull Creek Trail showed the highest average daily multi-use path weekend and weekday bicycle counts, at 759 cyclists and 479 cyclists per day, respectively. The Seed Tick Shuffle Trail showed the highest

³ These numbers not seasonally adjusted

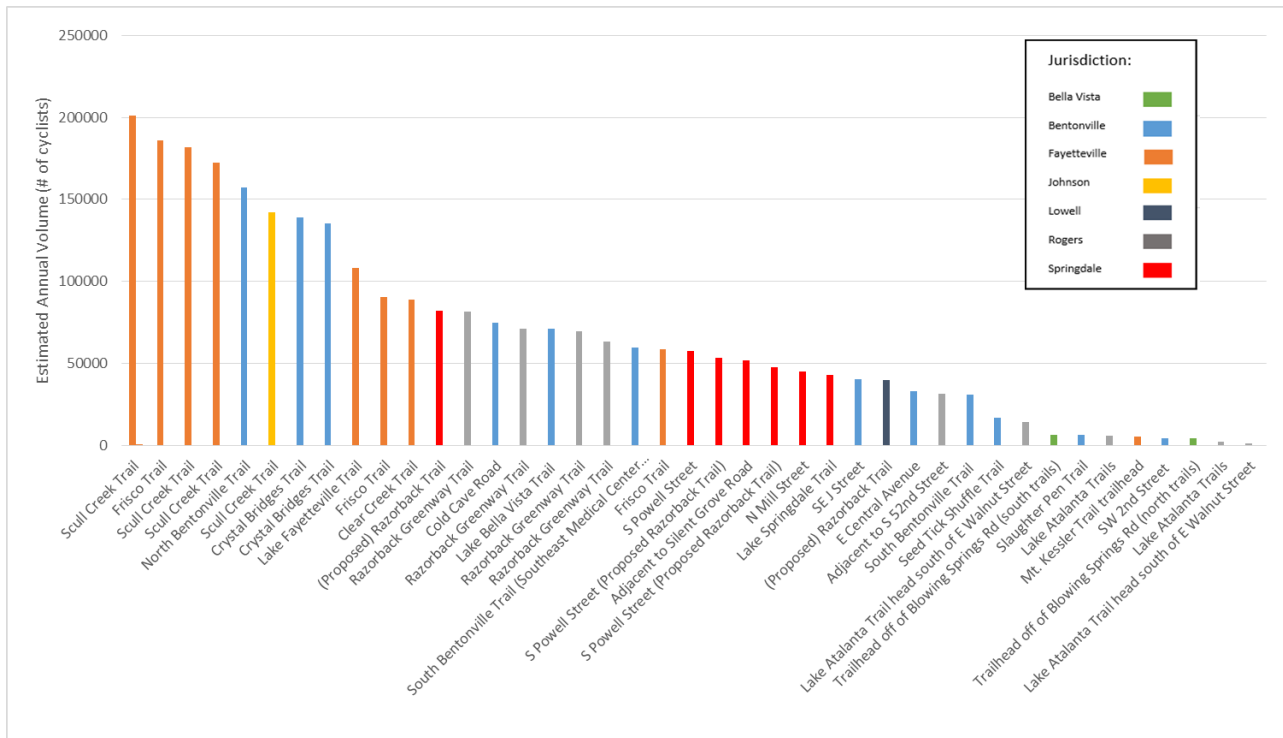
average daily weekend and weekday bicycle counts for natural surface trails, at 39 cyclists and 68 cyclists per day, respectively.

Table 2: Descriptive Statistics for Estimated Annual Bicycle Counts Daily per Site

Statistic	System wide	Multi-Use Paths	Natural Surface Trails
Mean Estimated Annual Cyclists per Count Site	67,728	84,807	7,006
Median Estimated Annual Cyclists per Count Site	57,859	70,292	5,706
Standard Deviation (annual per site)	56,382	52,184	5,237
Minimum Estimated Annual Cyclists per Site	1,449	4,634	1,499
Maximum Estimated Annual Cyclists per Site	201,035	201,035	17,142

Source: Chen Ryan Associates, August 2015

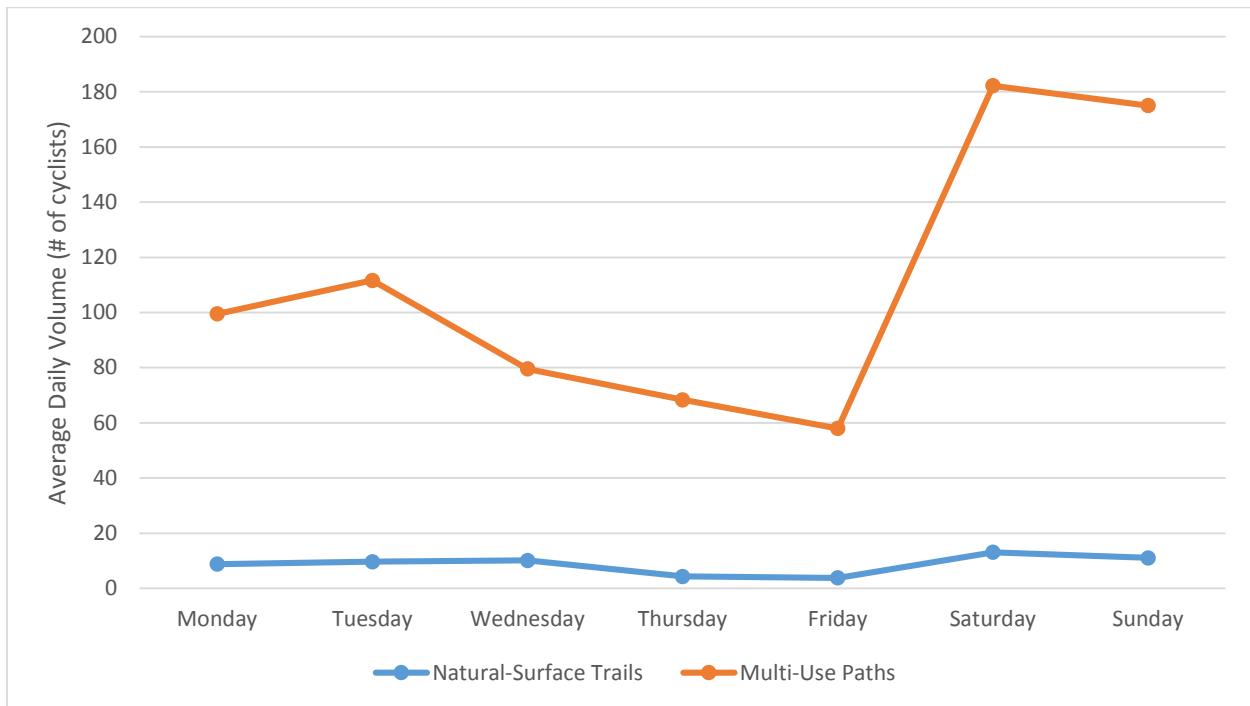
Figure 1: Estimated Annual Bicycle Volumes by Location in Northwest Arkansas



The low cyclist volumes observed on weekday mornings, combined with peak use in the late afternoon and early evening (usage counts by time of day when usage is occurring), suggest that the NWA trails are primarily used for recreational purposes rather than utilitarian purposes, such as work or school commute trips. The highest average hourly *weekday* bicycle volume (usage counts by time of day when usage is occurring) occurred at 6:00PM, with 22 cyclists on average (across all sites) per site per hour. The highest average hourly *weekend* bicycle volume (usage counts by time of day when usage is occurring) occurred at 2:00PM, with 36 cyclists on average (across all sites) per site per hour. The times

of day when multi-use paths were used with greater frequency were in the evening hours on weekdays peaking at 7:00PM and peaking at 3:00PM on the weekends. However, natural surface trails usage peaked at 4:00PM on both weekdays and weekends. The research showed the natural surface trails have significantly lower usage rates than multi-use paths. However, natural surface trails have similar volume on weekends and weekdays suggesting even use throughout the week.

Figure 2: Average Northwest Arkansas Daily Bicycle Volume by Day of Week and Trail Surface Type (across all sites)



Bicycle volumes appear to be related to levels of income, population density, and employment density. Count sites located in strata characterized by high population and employment density showed higher rates of cycling than sites located in strata characterized by low population and employment density. High population density sites averaged 341 daily riders while low population density sites averaged 83 riders daily. Count sites situated in high-income strata recorded lower bicycle volumes than those located in low-income strata during both the weekend and weekday periods. High-income sites averaged 97 riders during the week and 187 on the weekend, while sites in low-income strata averaged 213 during the week and 417 on the weekend. In sum, higher bicycle trail usage is associated with higher densities of employment and population; but not with higher income levels.

Pedestrians

Pedestrian use of the trails, much like the cycling usage, was determined by the researchers to be comparable with other notable pedestrian friendly cities around the country. The study estimated that an average of 58,953 annual pedestrians per site are anticipated across the system, with a median of 30,270 pedestrians and a standard deviation of 72,078.

Table 3: Descriptive Statistics for Estimated Annual Pedestrian Counts Daily per Site

Statistic	System wide	Multi-Use Paths	Natural Surface Trails
Mean Estimated Annual Pedestrians per Count Site	58,953	72,420	10,134
Median Estimated Annual Pedestrians per Count Site	30,270	43,807	8,876
Standard Deviation (annual per site)	72,078	76,185	5,163
Minimum Estimated Annual Pedestrians per Site	4,407	5,436	4,407
Maximum Estimated Annual Pedestrians per Site	291,836	291,836	19,593

Source: Chen Ryan Associates, August 2015

Northwest Arkansas compares favorably to other regions (in pedestrian usage of trails), some of which are considered pedestrian-prominent cities such as Portland and San Diego County. Comparing pedestrian trail user rates (summed across the three highest pedestrian usage sites by average daily pedestrian volume) per capita (users per 1,000 population), Northwest Arkansas (4.40) is very similar to San Diego County (4.54) and higher than Portland (3.31).

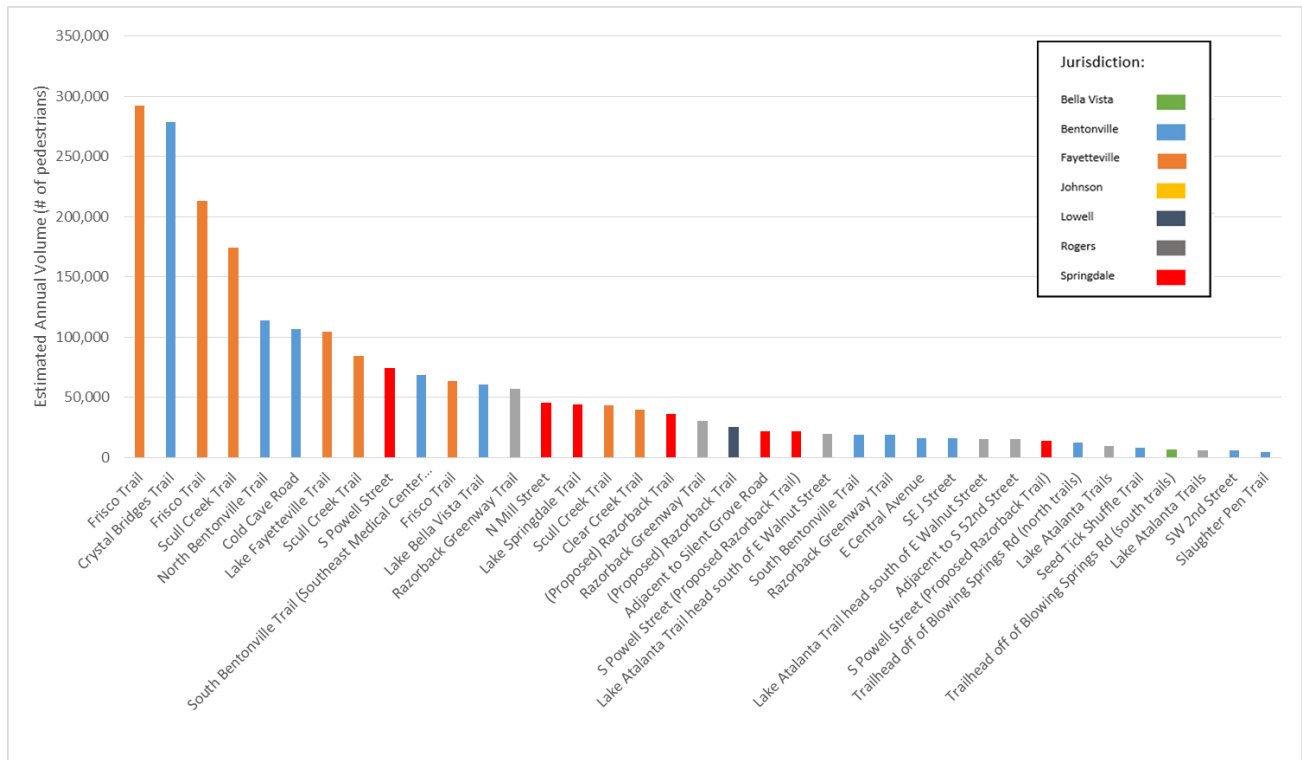
Table 4: Daily Volume of Pedestrians per 1,000 Population (user counts reflect top three locations combined)

County (Rank)	Population	Daily Pedestrians*	Pedestrians/1K
Minneapolis ⁴ (1)	407,207	60,020	147.39
San Francisco (2)	852,469	17,209	20.19
San Diego County (3)	3,236,431	14,807	4.54
NWA (4)	491,966	2,164	4.40
Portland (5)	619,360	2,048	3.31

*Daily pedestrians determined by combining the usage of the top three sites with the highest average daily bicycle volume for each location.

⁴ These numbers not seasonally adjusted.

Figure 3: Estimated Annual Pedestrian Volumes by Location in Northwest Arkansas



The Frisco Trail showed the highest average daily weekday pedestrian count (833), and the Crystal Bridges Trail showed the second highest average daily weekday pedestrian count (738). The Crystal Bridges Trail saw the highest average daily weekend pedestrian count of all trails (826).

The highest average weekday pedestrian volume (usage counts by time of day when usage is occurring) was found to be at 6:00PM (35 pedestrians on average per site per hour). The highest weekend pedestrian volume (usage counts by time of day when usage is occurring) occurred at 2:00PM (43 pedestrians on average per site per hour). Similarly to the cycling patterns, the low volumes during weekday mornings, as well as the high volumes in late afternoon and evening suggest use is primarily recreational.

The Trail Usage Monitoring project established a best practice bicycle and pedestrian data collection program for the Northwest Arkansas region. The research team recommended that Northwest Arkansas continue tracking cycling and pedestrian trends over time to support improved understandings of the benefits of cycling and pedestrian infrastructure and programmatic investments.