How to calculate daily and monthly factors

Data comes from the continuous bike counter on US 36, north of Boulder City Limits
165,265 bicyclists counted in 2012
22,854 bicyclists counted in July 2012

This table shows the daily totals for each day in July

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1,060	521	578	1,204	405	551	941
735	428	836	704	688	598	1,110
1,028	419	744	606	617	536	1,056
1,355	422	636	605	666	513	1,112
974	448	758				

To calculate daily and monthly factors:

1. Average each of the days of the week

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
average	1030	448	710	780	594	550	1055

(1,060 + 735 + 1,028 + 1,355 + 974) / 5 = 1,030

2. Find the annual average daily bicyclists (AADB) by dividing the number of bicyclists counted in a year by 365
165,265 / 365 = 453

3. Find the monthly average daily bicyclists (MADB) by dividing the monthly total by the number of days in the month
22,854 / 31 = 737

4. Find the monthly factor, in this case for July, by dividing the AADB by the MADB
453 / 737 = 0.614 ← **Monthly Factor**

5. Find the daily factors by dividing the MADB by the daily average for each day of the week.
For Sunday, 737 / 1,030 = 0.716

Doing this for all days of the week, you will create a table like this one:

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
0.716	1.647	1.038	0.945	1.241	1.342	0.699

← **Daily Factors**

When you have a 24 hour count, AADB= 24 hour count * Daily Factor * Monthly Factor
As a check, let's try this for the last Sunday in July
Our known 24 hour count is 974, so: 974 * 0.614 * 0.716 = 428
428, our estimate of the AADB based on a single day of counting, is close to the observed AADB of 453

If you had a 24 count from a Thursday in July, from a location in the same factor group (commute, non-commute, etc), to find the AADB for that location, multiply the count by the daily and monthly factors.

Let's say 500 bicyclists were counted. 500 * 1.241 * 0.715 = 444, so the AADB for that location is 444 bicyclists.
(24hr   (daily   (monthly
count)   factor)   factor)

6. Don't forget to calculate factors for each month of the year. This means you will have a Monday factor for January, a different Monday factor for Febuary, a third Monday factor for March, etc.