Program Overview

Automated bicycle and pedestrian count programs have been established in cities across the country and around the world to provide reliable data for transportation practitioners making decisions about the design, location, and enhancement of facilities for people walking and biking. Beginning with the installation of the first permanent automated counter on the western approach to the Bob Kerrey Pedestrian Bridge in November 2016, the City of Omaha Planning Department has managed an automated counter program. Now with five permanent counters and one mobile automated counter, sufficient data has been collected to publish this first annual City of Omaha Automated Bicycle and Pedestrian Count Program Report.

Counters used by the City of Omaha were purchased with funds from the Bob Kerrey Pedestrian Bridge maintenance fund and the City’s Traffic Calming Program, with the exception of one counter purchased and installed as part of the West Papio Trail (Giles to Q) extension project, a project jointly funded by the Papio-Missouri River NRD, the City of Omaha, and the City of La Vista. A sixth permanent counter is planned to be installed on the east end of the Bob Kerrey Bridge in Council Bluffs. The counters are manufactured by EcoCounter and have an infrared sensor to detect passing pedestrians and inductive loops installed in the pavement to detect bicyclists.

Data from permanent automated counters is necessary to reliably extrapolate data from shorter duration counts so that “apples to apples” comparisons can be made between different locations and between counts collected at different times of the year. As additional permanent counters are installed and the volume of data collected grows over time, the reliability and usefulness of count data will increase and serve as a valuable resource for not only the City, but for other agencies and partners, such as MAPA and the NRD, who have an interest in understanding usage patterns along regional pedestrian and bicycle facilities.

Program Objectives

- Use counter data to understand usage patterns and trends at strategic locations along Omaha’s trail system and other non-motorized transportation facilities
- Use data from mobile counter(s) to evaluate effects of new infrastructure (including trails and on-street infrastructure) on pedestrian and bicycle activity
- Use data to support funding requests from public and private sources for expansions of and enhancements to the regional trail system and on-street bicycle and pedestrian facilities
- Follow national best practices for count data collection and analysis
- Regularly report and share data

Program Partners
Counter Locations Map

As of 12/31/2018

Permanent Counter Locations | Install Date | Temporary Counter Locations | Active Dates
---|---|---|---
1. Bob Kerrey Bridge Western Approach | 11/21/16 | 1. Pratt Street Pedestrian Bridge over US 75 | 2/28/18 - 6/18/18
3. Keystone Trail at West Center Road | 7/12/18 | 3. Martin Luther King Jr Ped Bridge | 9/21/18 - 10/15/18
4. Big Papio Trail at 103rd Street | 7/12/18 |  | 
5. West Papio Trail at I-80 | 8/22/18 |  | 

Map Legend:
- Trails
- On-Street Bike Lanes and Bike Routes
- Parks
- Water
Data Summary

This report summarizes data collected at five permanent automated pedestrian and bicycle counter locations on Omaha’s trail system and three temporary automated counter locations. As the automated counter program is relatively new, multiple years of data are only available for two locations.

Travel Patterns by Location

Table 1 below summarizes key statistics for each counter location by year, including a summary of the type of travel pattern at each counter location. Miranda-Moreno et al. (2013) developed a method that is used to classify travel patterns for pedestrian and bicycle facilities. Their method is based upon two indices:

1. Weekend-Weekday Index (WWI) - the ratio of weekend average daily traffic to weekday average daily traffic
2. AM-Midday Index (AMI) - the ratio of weekday morning (7am-9am) traffic to weekday midday (11am-1pm) traffic.

Using these indices, counter locations can be classified into four different travel patterns as outlined below:

1. WWI < 1 and AMI > 1 = Commute, because weekend traffic is less than weekday traffic, and weekday hourly patterns are commute-like
2. WWI < 1 and AMI < 1 = Commute-mixed, because weekend traffic is less than weekday traffic, but weekday hourly patterns do not follow typical commute patterns
3. WWI > 1 and AMI > 1 = Multipurpose-mixed, because weekend traffic is higher, but weekday hourly patterns are commute-like
4. WWI > 1 and AMI < 1 = Multipurpose, because weekend traffic is higher and weekday hourly patterns are not commute-like

Table 1: Summary Statistics by Counter Location and Year

<table>
<thead>
<tr>
<th>Counter Location</th>
<th>Year of Data</th>
<th>Counter Install Date(s)</th>
<th>AADP</th>
<th>AADB</th>
<th>AADNT</th>
<th>WWI</th>
<th>AMI</th>
<th>Travel Pattern Classification</th>
<th>Day of Week with Highest ADNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Counter Locations:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bob Kerrey Western Approach</td>
<td>2018</td>
<td>11/21/16</td>
<td>873</td>
<td>162</td>
<td>1,036</td>
<td>1.67</td>
<td>0.39</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>11/21/16</td>
<td>1,338</td>
<td>202</td>
<td>1,540</td>
<td>1.89</td>
<td>0.32</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td>Field Club Trail at Vinton</td>
<td>2018</td>
<td>9/7/17</td>
<td>227</td>
<td>80</td>
<td>307</td>
<td>0.99</td>
<td>0.87</td>
<td>Commute-mixed</td>
<td>Thursday</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>9/7/17</td>
<td>202</td>
<td>52</td>
<td>254</td>
<td>1.15</td>
<td>0.64</td>
<td>Multipurpose</td>
<td>Sunday</td>
</tr>
<tr>
<td>Keystone Trail at Center</td>
<td>2018</td>
<td>7/12/18</td>
<td>148</td>
<td>193</td>
<td>342</td>
<td>1.34</td>
<td>0.75</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td>Big Papio Trail at Woolworth</td>
<td>2018</td>
<td>7/12/18</td>
<td>140</td>
<td>70</td>
<td>70</td>
<td>2.80</td>
<td>0.79</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td>West Papio Trail at I-80</td>
<td>2018</td>
<td>8/22/18</td>
<td>35</td>
<td>69</td>
<td>96</td>
<td>1.36</td>
<td>0.42</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td>Temporary Counter Locations:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Atlas / Creighton Pedestrian Bridge</td>
<td>2018</td>
<td>8/17/18 - 9/17/18</td>
<td>NA</td>
<td>NA</td>
<td>434</td>
<td>0.48</td>
<td>0.87</td>
<td>Commute-mixed</td>
<td>Wednesday</td>
</tr>
<tr>
<td>Martin Luther King Jr Pedestrian Bridge</td>
<td>2018</td>
<td>9/21/18 - 10/15/18</td>
<td>NA</td>
<td>NA</td>
<td>248</td>
<td>1.53</td>
<td>0.50</td>
<td>Multipurpose</td>
<td>Saturday</td>
</tr>
<tr>
<td>Pratt Street Pedestrian Bridge over US 75</td>
<td>2018</td>
<td>2/28/18 - 6/18/18</td>
<td>NA</td>
<td>NA</td>
<td>68</td>
<td>0.84</td>
<td>0.31</td>
<td>Commute-mixed</td>
<td>Thursday</td>
</tr>
</tbody>
</table>

AADP = Average Annual Daily Pedestrians
AADB = Average Annual Daily Bicycles
AADNT = Average Annual Daily Non-Motorized Traffic
ADNT = Average Daily Non-Motorized Traffic
WWI = Weekend to Weekday Index, or the ratio of average daily weekend traffic to average daily weekday traffic
AMI = AM to Midday Index, or the ratio of weekday morning (7am-9am) traffic to weekday midday (11am-1pm) traffic
NA = Data not Available

1 Although the West Papio at I-80 Counter was installed 8/22/18, the portion of the trail it was located on wasn’t officially opened until 10/2/2018 and the counter was not differentiating between pedestrians and bicycles until 10/11/2018. Summary statistics in this table for the West Papio Counter are only for the period from 10/11/2018 to 12/31/2018.
Bob Kerrey Pedestrian Bridge Western Approach - 2018 Count Summary

873 2018 Annual Average Daily Pedestrians

162 2018 Annual Average Daily Bicycles

3,420 Peak Daily Pedestrian Count (July 28, 2018)

630 Peak Daily Bicycle Count (June 3, 2018)

Count Distribution by Mode and Direction
Bob Kerrey Bridge Western Approach - 2018

Total Count by Week
Bob Kerrey Bridge Western Approach - 2018

Average Count by Day of Week
Bob Kerrey Bridge Western Approach - 2018

Average Count by Hour, Mode, and by Weekday vs Weekend
Bob Kerrey Pedestrian Bridge Western Approach - 2018
Bob Kerrey Pedestrian Bridge Western Approach - 2017 Count Summary

Count Distribution by Mode and Direction
Bob Kerrey Bridge Western Approach - 2017

- 7.3% Pedestrians EB
- 6.1% Pedestrians WB
- 48.8% Bicycles EB
- 37.8% Bicycles WB

1,338 2017 Annual Average Daily Pedestrians
7,176 Peak Daily Pedestrian Count (May 28, 2017)

202 2017 Annual Average Daily Bicycles
788 Peak Daily Bicycle Count (May 28, 2017)

Total Count by Week
Bob Kerrey Bridge Western Approach - 2017

Average Count by Day of Week
Bob Kerrey Bridge Western Approach - 2017

Average Count by Hour, Mode, and by Weekday vs Weekend
Bob Kerrey Pedestrian Bridge Western Approach - 2017
Field Club Trail at Vinton Street - 2018 Count Summary

227 2018 Annual Average Daily Pedestrians
80 2018 Annual Average Daily Bicycles

559 Peak Daily Pedestrian Count (April 23, 2018)
320 Peak Daily Bicycle Count (July 1, 2018)

Total Count by Week
Field Club Trail at Vinton Street - 2018

Average Count by Day of Week
Field Club Trail at Vinton Street - 2018

Average Count by Hour, Mode, and by Weekday vs Weekend
Field Club Trail at Vinton Street - 2018
**Field Club Trail at Vinton Street - 2017 Count Summary**

- **202** 2017 Annual Average Daily Pedestrians*
- **52** 2017 Annual Average Daily Bicycles*

**Count Distribution by Mode and Direction**

- **44.1%** Pedestrians NB
- **35.5%** Bicycles NB
- **11.0%** Pedestrians SB
- **9.5%** Bicycles SB

**Total Count by Week**

Field Club Trail at Vinton Street - 2017

**Average Count by Day of Week**

- **83** Monday
- **53** Tuesday
- **42** Wednesday
- **237** Thursday
- **188** Friday
- **158** Saturday
- **209** Sunday

**Average Count by Hour, Mode, and by Weekday vs Weekend**

Field Club Trail at Vinton Street - 2017

- **Peak Daily Pedestrian Count (Sept 28, 2017)**: **435**
- **Peak Daily Bicycle Count (Oct 7, 2017)**: **185**

*Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)*
Keystone Trail at Center - 2018 Count Summary

2018 Annual Average Daily Pedestrians* 148
2018 Annual Average Daily Bicycles* 193

1,238 Peak Daily Pedestrian Count (Oct 4, 2018)
991 Peak Daily Bicycle Count (Sept 9, 2018)

Total Count by Week
Keystone Trail at Center - 2018

Average Count by Day of Week
Keystone Trail at Center - 7/13/18 to 12/31/18

Average Count by Hour, Mode, and by Weekday vs Weekend
Keystone Trail at Center - 7/13/18 to 12/31/18

* Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)
Big Papio Trail at 103rd Street - 2018 Count Summary

**Count Distribution by Mode and Direction**
Big Papio Trail at 103rd Street - 7/13/18 to 12/31/18

- **22.7%** Pedestrians NB
- **28.5%** Pedestrians SB
- **23.4%** Bicycles NB
- **25.4%** Bicycles SB

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**2018 Annual Average Daily Pedestrians**
- **140**

**2018 Annual Average Daily Bicycles**
- **70**

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**Peak Daily Pedestrian Count (July 31, 2018)**
- **266**

**Peak Daily Bicycle Count (July 21, 2018)**
- **372**

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**Total Count by Week**
Big Papio Trail at 103rd Street - 2018

**Average Count by Day of Week**
Big Papio Trail at 103rd St - 7/13/18 to 12/31/18

**Average Count by Hour, Mode, and by Weekday vs Weekend**
Big Papio Trail at 103rd Street - 7/13/18 to 12/31/18

*Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)*
West Papio Trail at I-80 - 2018 Count Summary

**2018 Annual Average Daily Pedestrians***: 35

**2018 Annual Average Daily Bicycles***: 69

**Peek Daily Pedestrian Count (Oct 11, 2018)**: 191

**Peak Daily Bicycle Count (Oct 27, 2018)**: 375

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* Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)
Pratt Street Pedestrian Bridge over US Hwy 75 (Temporary Counter Location)

Counter Active Dates: 2/28/18 to 6/18/18

**2018 Annual Average Daily Pedestrians & Bicycles***

**147** Peak Daily Pedestrian & Bicycle Count (May 15, 2018)

**68**

*Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)*
The Atlas/Creighton Pedestrian Bridge (Temporary Counter Location)

Counter Active Dates: 8/17/18 to 9/17/18

**Total Count by Day**
The Atlas / Creighton Pedestrian Bridge - 8/17/18 - 9/17/18

**Average Count by Day of Week**
The Atlas / Creighton Pedestrian Bridge - 8/17/18 to 9/17/18

**Average Count by Hour and by Weekday vs Weekend**
The Atlas / Creighton Pedestrian Bridge - 8/17/18 to 9/17/18

*Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)
Martin Luther King Jr Pedestrian Bridge (Temporary Counter Location)

Counter Active Dates: 9/21/18 to 10/15/18

248 2018 Annual Average Daily Pedestrians & Bicycles*

659 Peak Daily Pedestrian & Bicycle Count (Oct 13, 2018)

Total Count by Day
MLK Bridge - 9/21-10/15/18

Average Count by Day of Week
MLK Pedestrian Bridge - 2/28/18 to 6/18/18

Average Count by Hour and by Weekday vs Weekend
Martin Luther King Jr Ped Bridge - 9/21/18 to 10/15/18

* Annual average daily counts are estimated using day-of-year scaling factor methodology from Hankey, Lindsey, and Marshall (2014)
References and Resources


