



# **CLACKAMAS COUNTY ACTIVE TRANSPORTATION COUNTERS**

## **FINAL REPORT**

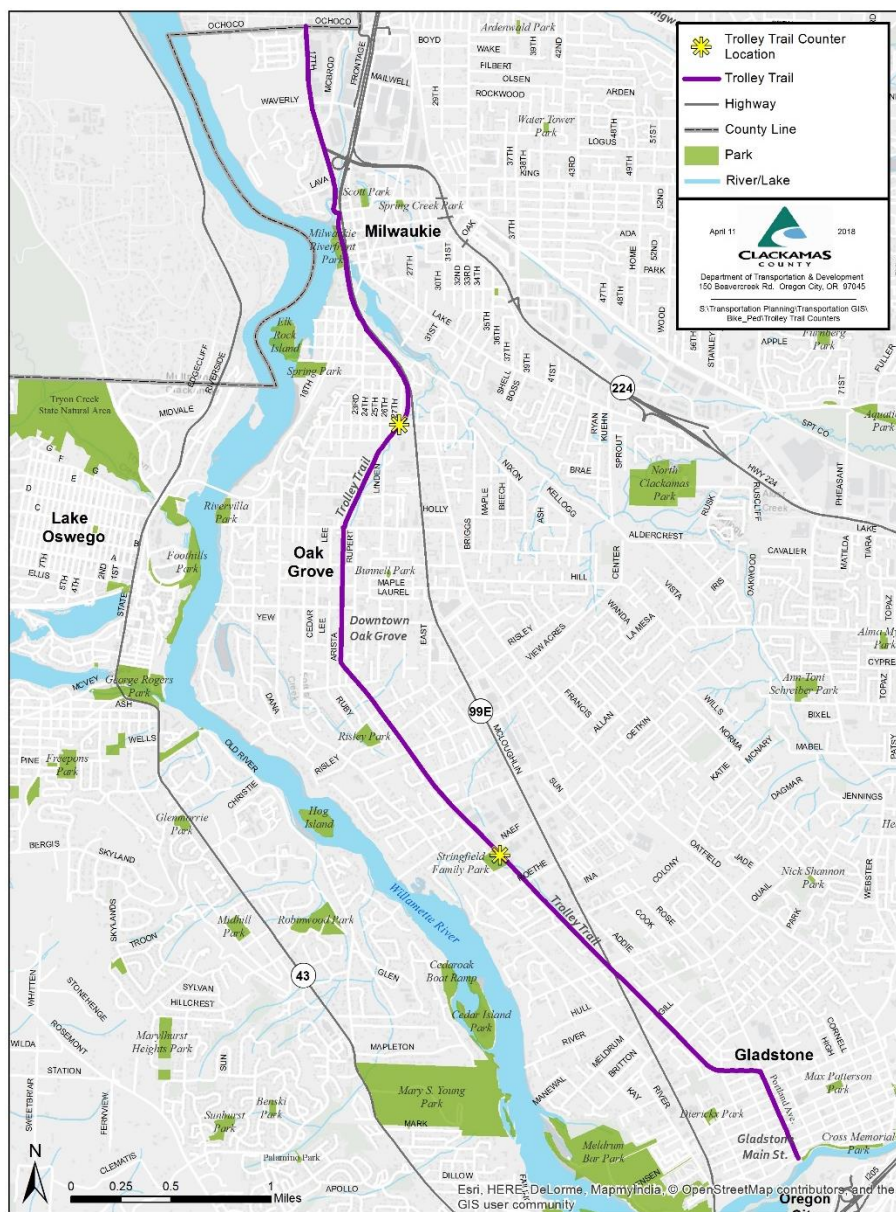
### **METRO RTO GRANT 934631**

Contact: *Scott Hoelscher*  
*Senior Transportation Planner*  
*(503) 742-4533*  
*scotthoe@clackamas.us*

## INTRODUCTION

The purpose of the Clackamas County Active Transportation Counters final report is to summarize the count program established under Regional Travel Options (RTO) Grant 934631. The final report includes information on the types of counters installed; collecting and reporting the data; summary and general findings for six months of collected data; and information on how data will be shared.

Pursuant to the RTO grant award two permanent, fixed location counters have been installed in the Oak Grove neighborhood of Clackamas County. One counter is adjacent to the Trolley Trail just south of the Park Avenue MAX Station (terminus of MAX Orange Line). A second counter is at Stringfield Park, just south of SE Naef Road. Map 1 below shows the counter locations.



The counters from Roadsys, LLC deploy two technologies to individually count both pedestrians and bicyclists. The Infra-red sensors installed in a small pedestal adjacent to the Trolley Trail count pedestrian traffic, while Piezo-electronic sensor technology embedded in the pavement across the trail detect bicyclists in both directions independently of pedestrians. Each technology is connected to a Central Monitoring Unit (CMU) which collects and stores the data and is contained in the base pedestal unit. Both counter sites are connected to a permanent power source located near the counter site, which eliminates the need to replace batteries. Photographs of each site, with the counters circled in red, are shown in the below Figure 1 and Figure 2.



Figure 1: Stringfield Park Bike/Pedestrian Counter



Figure 2: Park Ave Bike/Pedestrian Counter

### **COLLECTING AND REPORTING THE DATA**

The counters provide continuous automated counting 24 hours per day, 365 days per year. Each site is configured to store one year of data. Data collection for both the Park Ave. and Stringfield Park sites began in December of 2018 following device testing and troubleshooting which occurred in the fall of 2018. To test device performance and ensure integrity of the data, accuracy validation was conducted on six separate occasions by Clackamas County staff between August of 2018 and early January 2019. Accuracy validation consisted of county staff visits to each site to compare actual traffic on the trail to data recorded by the counting device. This accuracy verification process involved using “real time” software and connecting to the CMU via Bluetooth. Through this process, staff was able to verify accuracy of data collected as documented in this report.

To collect data, county staff travels to each counter location monthly with a laptop computer and downloads data via Bluetooth technology. Raw data is then converted to daily reporting tables. The reporting tables contain volumes for mode of travel. The table is organized as follows: the site name is indicated at the top left of the page followed by date and mode “class”: “CYCLE” for bicycle and “PED” for pedestrian. The left hand column includes the time of day in military time by hour. Column 2, 3 and 4 list the total volume by speed in 10 mph

increments. The fourth column lists the total for each hour. Day totals are listed at the bottom of each page. An example of a 24 hour pedestrian count table (Table 1) and a 24 bicycle count table (Table 2) is shown below.

Report Date : 05/01/2019		Volume/Speed Band/Time -			
Report Time : 1:39 PM					
Selected Lanes : L1(NSEW), L2(NSEW)					
1 - Stringfield, Tuesday - 09 Apr, 2019, Class PED					
Time of Day	Band 0 (0~9)	Band 1 (10~19)	Band 2 (20~29)	Total	85% ile
00:00~01:00	2	0	0	2	2
01:00~02:00	0	0	0	0	0
02:00~03:00	0	0	0	0	0
03:00~04:00	1	0	0	1	2
04:00~05:00	0	0	0	0	0
05:00~06:00	2	0	0	2	2
06:00~07:00	2	0	0	2	2
07:00~08:00	11	0	0	11	2
08:00~09:00	11	0	0	11	2
09:00~10:00	9	0	0	9	2
10:00~11:00	21	0	0	21	2
11:00~12:00	26	0	0	26	2
12:00~13:00	23	0	0	23	2
13:00~14:00	8	0	0	8	2
14:00~15:00	12	0	0	12	2
15:00~16:00	6	0	0	6	2
16:00~17:00	21	0	0	21	2
17:00~18:00	20	0	0	20	2
18:00~19:00	12	0	0	12	2
19:00~20:00	4	0	0	4	2
20:00~21:00	2	0	0	2	2
21:00~22:00	3	0	0	3	2
22:00~23:00	0	0	0	0	0
23:00~23:59	0	0	0	0	0
Total:	196	0	0	196	2
AM Peak Time	11:00-12:00			11:00-12:00	
AM Peak Vol.	26	0	0	26	
PM Peak Time	12:00-13:00			12:00-13:00	
PM Peak Vol.	23	0	0	23	

Table 1: Pedestrian Count Example (Stringfield Park)

Report Date : 06/04/2019		Volume/Speed Band/Time -			
Report Time : 10:45 AM					
Selected Lanes : L1(NSEW), L2(NSEW)					
2 - Park Ave, Tuesday - 07 May, 2019, Class CYCLE					
Time of Day	Band 0 (0~9)	Band 1 (10~19)	Band 2 (20~29)	Total	85% ile
00:00~01:00	0	2	0	2	11
01:00~02:00	1	0	0	1	4
02:00~03:00	1	0	0	1	4
03:00~04:00	0	0	0	0	0
04:00~05:00	2	1	0	3	10
05:00~06:00	6	6	0	12	11
06:00~07:00	6	9	0	15	12
07:00~08:00	17	15	0	32	12
08:00~09:00	10	9	0	19	13
09:00~10:00	16	10	0	26	11
10:00~11:00	5	1	0	6	9
11:00~12:00	14	5	0	19	10
12:00~13:00	8	11	0	19	11
13:00~14:00	14	7	0	21	12
14:00~15:00	9	5	0	14	12
15:00~16:00	9	13	0	22	12
16:00~17:00	21	7	0	28	11
17:00~18:00	30	17	1	48	12
18:00~19:00	23	10	0	33	11
19:00~20:00	15	8	0	23	11
20:00~21:00	11	5	0	16	11
21:00~22:00	2	1	0	3	11
22:00~23:00	0	1	0	1	14
23:00~23:59	0	0	0	0	0
Total:	220	143	1	364	12
AM Peak Time	07:00-08:00	07:00-08:00		07:00-08:00	
AM Peak Vol.	17	15	0	32	
PM Peak Time	17:00-18:00	17:00-18:00	17:00-18:00	17:00-18:00	
PM Peak Vol.	30	17	1	48	

Table 2: Bicycle Count Example (Park Ave)

## DATA GENERAL FINDINGS

The counters provide a snapshot of active travel in this part of the county. Six months of data at both count locations has been collected. Data has been aggregated by month to include total trips per month; total weekday; total weekend; average weekday; average weekend and peak day. Six months of data for the two sites for both pedestrian and bicycle counts are displayed in tables 3-6 below. Bar graphs displaying the 6 months of data for both modes are included in figures 3 and 4 on page 6.

Table 3: Park Ave Condensed Bicycle Counts

Park Ave. Bike Counts						
Bicycle Trips by Month	Total Trips	Total Weekday	Total Weekend	Average Weekday	Average Weekend	Peak Day
December	3,276	2,480	796	118	80	198
January	4,046	3,101	945	135	118	212
February	2,269	1,690	579	85	72	171
March	5,498	3,114	2,384	148	238	355
April	5,481	4,100	1,381	186	173	390
May	8,463	6,214	2,249	270	281	404

Park Ave. Pedestrian Counts						
Pedestrian Trips by Month	Total Trips	Total Weekday	Total Weekend	Average Weekday	Average Weekend	Peak Day
December	4,263	2,978	1,285	142	129	210
January	5,093	3,979	1,114	173	139	285
February	4,037	3,016	1,021	151	128	249
March	4,839	3,224	1,835	154	162	220
April	3,832	2,906	926	132	116	183
May	3,637	2,614	1,023	114	128	190

Table 4: Park Ave Condensed Pedestrian Counts

Stringfield Bike Counts						
Bicycle Trips by Month	Total Trips	Total Weekday	Total Weekend	Average Weekday	Average Weekend	Peak Day
December	2,221	1,493	728	71	73	118
January	2,640	1,878	762	82	95	179
February	1,323	908	415	45	52	110
March	4,552	2,243	2,309	107	231	362
April	4,124	2,792	1,332	127	167	332
May	6,472	4,436	2,036	193	255	340

Table 5: Stringfield Park Condensed Bicycle Counts

Stringfield Pedestrian Counts						
Pedestrian Trips by Month	Total Trips	Total Weekday	Total Weekend	Average Weekday	Average Weekend	Peak Day
December	4,525	3,239	1,286	154	129	234
January	5,112	3,809	1,303	166	163	233
February	3,496	2,298	1,198	115	150	233
March	5,822	3,566	2,256	170	226	289
April	6,015	4,425	1,590	201	199	322
May	6,859	5,109	1,750	222	219	299

Table 6: Stringfield Park Condensed Pedestrian Counts



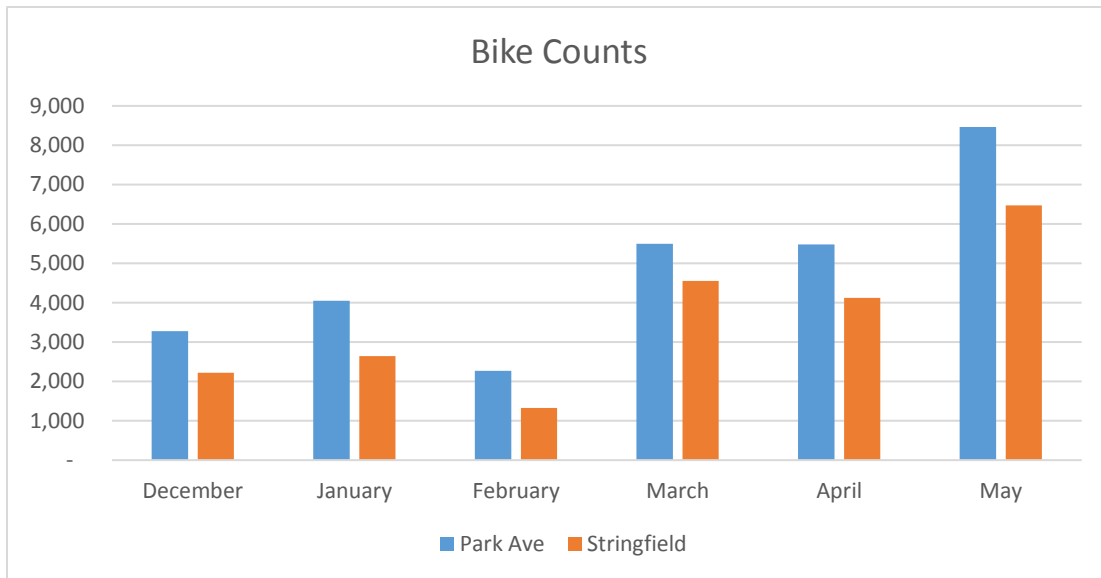


Figure 3: Bike Counts at Trolley Trail Counter Sites

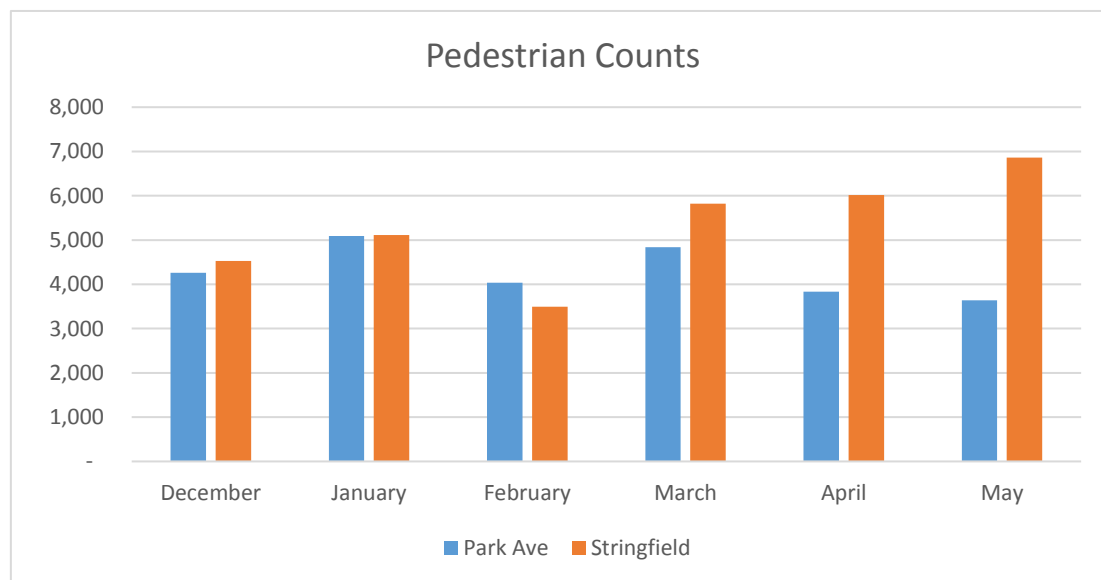


Figure 4: Pedestrian Counts at Trolley Trail Counter Sites

General findings and conclusions for the six month period from December 2018 through May 2019 are as follows:

- The average daily number of bicyclists at Park Ave. was 160
- The average daily number of bicyclists at Stringfield Park was 117
- Average number of pedestrians at Park Ave. was 141 per day
- Average number of pedestrians at Stringfield Park was 175 per day
- Bike traffic was higher at the Park Ave site perhaps reflecting the proximity to transit (the end of the MAX Orange Line) and multi-modal trips combining cycling with transit.

- Park Ave. saw both bike and pedestrian numbers spike during weekday commute times (morning and afternoon rush hours), indicating commuter usage of the trail near the end of the MAX Orange Line and several bus lines on McLoughlin Blvd.
- Pedestrian traffic was higher at the Stringfield Park site, generally peaking around midday and late afternoon/early evening, perhaps indicating more recreational users.
- Trips at both sites showed gradual increases each month except for February, which has substantial declines most likely related to temperature drops and winter storms hitting particularly hard that month.

### **SHARING THE DATA**

Data from the two active transportation counters locations will be shared as follows:

- **North Clackamas Parks and Recreations District (NCPRD).** NCPRD owns and maintains the Trolley Trail multi-use path; counter installation was performed in conjunction with NCPRD. Data will be shared with NCPRD for future trail planning and funding request purposes.
- **Clackamas County Health Housing and Human Services (H3S).** H3S consist of seven different divisions, each dedicated to ensuring healthy families and strong communities. Active transportation count data will be shared with H3S.
- **Portland State University Bike-Ped Portal.** The PSU portal is a national archive for bicycle and pedestrian count data. This archive supports data collected on road and path segments, recorded by hand as well as machines. The initial set of data from the Clackamas County program has been shared with the PSU Bike-Ped Portal. Data collected in the future will also be shared with PSU.
- **General Public.** Data will be published on county website. As data is collected, monthly totals will be uploaded to the “Bike and Pedestrians” page on the county website.

The two counters installed in the Oak Grove neighborhood is the start of the Clackamas County count program. As funding becomes available, it is expected that future sites will be added to the count program. Potential future sites include the I-205 path near the Clackamas Town Center and the Springwater Corridor just north of Boring Station Park.