2016 Multimodal Transportation Count Report

March 2017

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CITY OF BEND

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Chapter 1: Background

BACKGROUND

This chapter provides background on the development of the City's multimodal transportation system users count program and documents key features of the program. Additional information on the history and evolution of the City's count program and best practices for conducting bicycle and pedestrian counts is provided in the technical memorandums in *Appendix A.*

COUNT PROGRAM PURPOSE

The purpose of the City's count program is to provide critical field data to support operations, maintenance, and funding decisions for the City's multimodal transportation system. The program was developed based on a review of current practices within the City, County, BPRD and ODOT and discussions with City staff and project Technical Advisory Committee (TAC). The following sub-sections document the goals of the count program, intended data uses, and considerations for the program.

Count Program Goals

The City of Bend has developed the following goals for its count program:

- The count program should be easy to implement with minimal staff time required for maintenance or data manipulation. Data should be accessible without a field visit.

- The data should provide mode split information.

- Locations for data collection should be selected to allow for corridor trend analysis as well as regional analysis.

- Locations for data collection should supplement locations where ODOT, Deschutes County, and BPRD already collect regular data.

- Locations for data collection should be developed systematically rather than randomly in response to requests.

- The storage system for the counts should allow for incorporating data from other agencies as well as other projects such as Traffic Impact Analyses.

- The storage program should provide some flexibility to allow for future changes to incorporate new data, such as demographics.

Data Uses

In order to meet the goals above and ensure that meaningful data is collected through the count program, a list of potential uses of the data was developed. For the count program to be successful long-term, the data collected needs to be actively used and respond to high-priority needs. The intent is not to collect data randomly or at locations that only support a short term need or single citizen request but to be systematic in collecting data that will support the City's role as the road authority for transportation system development, operations and maintenance. The following data functions

articulate existing data needs or activities the City intends to pursue in the future with the count program data.

- Monitor use and trends
    - Identify trends in the transportation system (coverage counts)
    - Quantify mode split on key corridors
    - Assess changes in mode split on key corridors
    - Quantify the number of people walking and biking
    - Quantify the number of transit riders
- Measure project success
    - Understand traffic changes before and after project implementation (including roadway projects as well as pedestrian/bike projects) – "before" data may also be used for grant applications.
- Plan for the future
    - Understand where transportation issues exist today (congestion, etc.) and system operations to:
        - ✓ Be able to require development to complete appropriate mitigation
        - ✓ Appropriately plan for the future of the transportation network
        - ✓ Prioritize maintenance activities and operations
    - Understand which areas experience the heaviest use (across all modes) to appropriately prioritize maintenance activities
    - Understand the number of users at various times and seasons to appropriately time signals to maximize operations performance
- Improve safety analysis
    - Use volume data in addition to crash data to understand exposure and system influences

Other Considerations for Location Selection

To further inform the selection of count locations, the following were reviewed:

- Locations of counts currently collected by other agencies (ODOT, BPRD) and identification of locations the City would like other agencies to count in the future.
- Locations where volunteers have historically collected counts.
- Bridges which provide key locations for capturing travel patterns across the river.
- Underpasses which provide key locations for capturing travel patterns across a corridor.
- The City's defined opportunity areas which were developed by the Urban Growth Boundary (UGB) Technical Advisory Committees.
- Neighborhood Greenway (bike boulevard) corridors and enhanced crossings.

- The location of parks, schools, and other known destinations attracting high volumes of people walking and biking.
- Locations where counts are regularly collected for updating the City's travel demand model.
- Committed, built and conceptual roadway improvements.

The maps in *Attachment A* of Technical Memorandum 5.3, provided in *Appendix A* illustrate the data reviewed.

COUNTING PROGRAM

Based on the count program purpose and available resources, an iterative process was used to define the count locations, types, priority, and schedule.

Count Locations, Types and Priority

The count program was broken up into vehicle count locations and multimodal count locations to more easily select and view high priority locations for data.
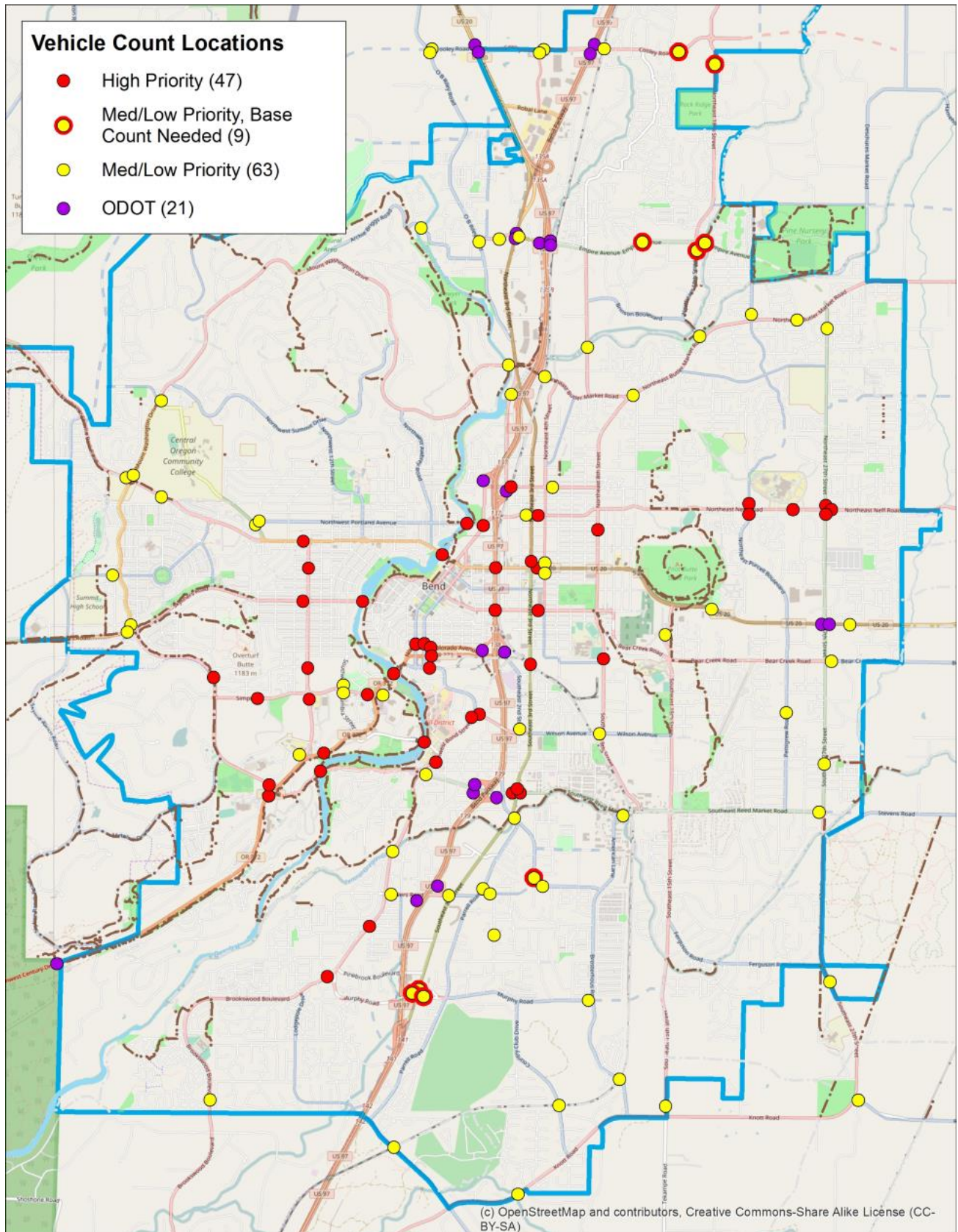
Vehicle Counts

At the vehicle count locations, twenty-four hour link count data will be collected. Link counts were selected over turning movement counts in order to more cost effectively provide corridor volume data while also providing vehicle speed and classification data. Vehicle count locations were prioritized into the following categories:

- **High priority** locations where data will be collected annually (these locations include bridges, high volume roadways, and a representation of the opportunity areas)
- **Medium priority** locations where data will be collected every two years (half of these locations will be counted one year and the other half the next year)
- **Medium priority** locations where **base counts** are needed (at these locations, data will be collected during year one of the data collection program to provide a base count and then during alternating years in the future)
- **ODOT** locations (ODOT collects data at these locations which is available to the City).

A map of the vehicle count locations is provided in Exhibit 1-1*. Attachment B* of Technical Memorandum 5.3 provides a larger map and list of locations.

Exhibit 1-1.   Vehicle Count Locations

Multimodal Counts

At the multimodal locations, a variety of options are available for collecting bicycle, pedestrian, and/or vehicle data, including:

- **BPRD** currently collects counts at a variety of locations using portable TraffX counters that are installed long-term on select trails around the community and sometimes moved to new locations as needed. Additional locations were identified where the City would also like BPRD to collect data as future resources allow.

- **ODOT** currently collects counts on its facilities using video cameras. The locations are primarily based on requests from the City.

- **Volunteers** currently count several times throughout the year at identified locations. These counts include bicycle turning movement counts at intersections and bicycle and pedestrian screenline counts at roadway segments.

- **Short-term counts** can be collected via video by a data collection firm. These counts can provide whatever data is desired, from intersection turning movement counts to screenline counts.

- **Long-term counts** can be collected via a variety of technologies, including roadway tubes, infrared sensors, and inductive loops. These technologies can be installed permanently or be designed to be portable for shorter installations.

Multimodal count locations were identified to utilize all of the above options. Long-term count locations were selected primarily at bridges or key undercrossings and intended to provide mode split and information about seasonal trends and annual walking and biking trends. The long-term count locations were prioritized to identify locations to install in the near-term (summer 2016) and in the future as funding is available. Short-term count locations were selected to capture information about opportunity areas, existing bicycle routes, key crossings, and trails. The short-term count locations are intended to be counted by a data collection firm in the spring, with volunteers counting the highest priority locations again in the fall.

A map of the multimodal count locations is provided in Exhibit 1-2. *Attachment C* of Technical Memorandum 5.3 provides a larger map and list of locations.

Exhibit 1-2.   Multimodal Count Locations
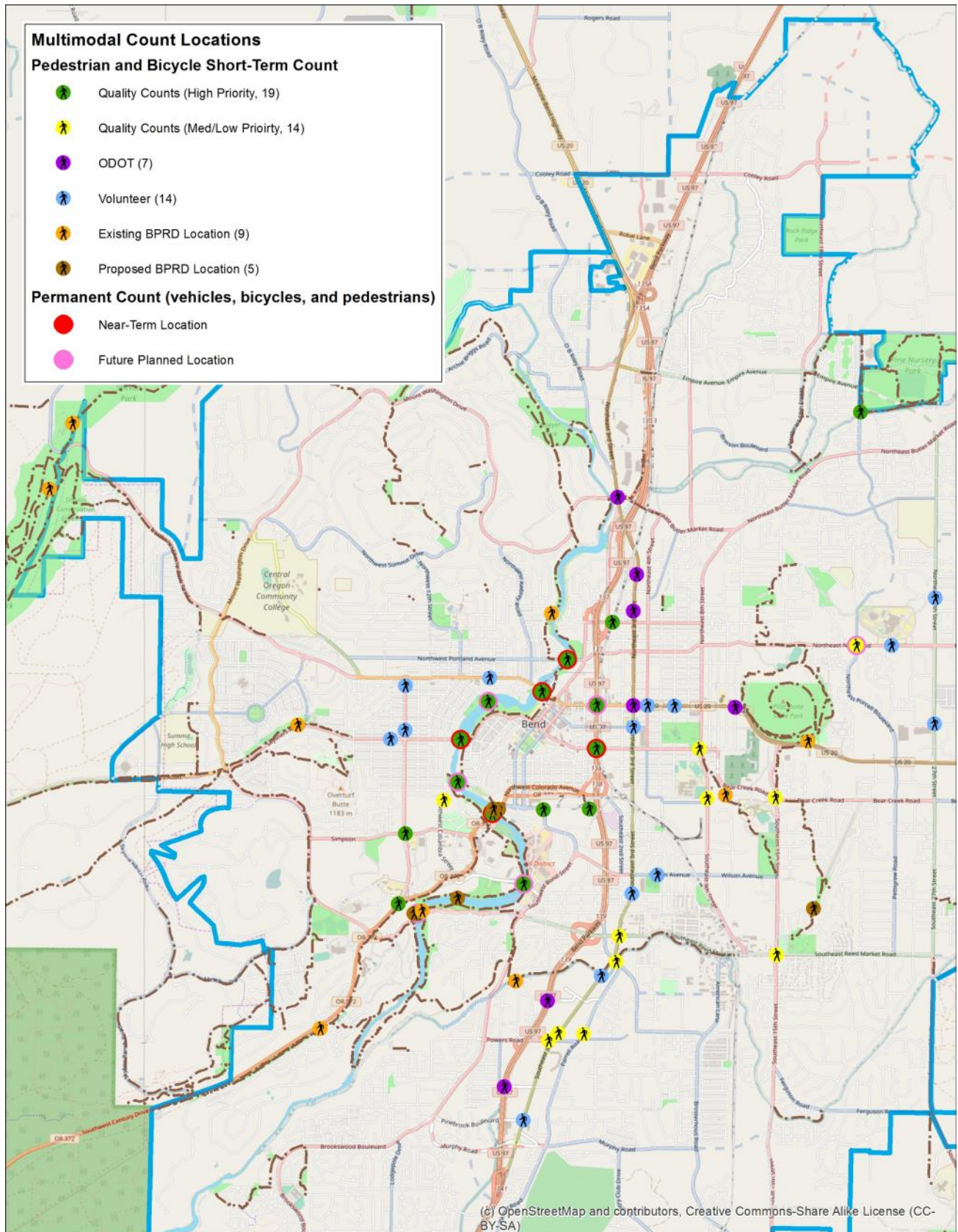
Count Schedule

The schedule for the count program is shown in Table 1-1. The schedule is intended to be followed each year with changes made as needed.

Table 1-1. Count Program Schedule

	Month											
	J	F	M	A	M	J	J	A	S	O	N	D
Reassess count locations, types and priorities based on past report	◊	◊										
Collect spring counts at annual locations					◊							
Collect summer counts at select locations							◊					
Collect fall bicycle and pedestrian counts with volunteers plus any annual locations not collected in spring									◊			
Produce annual report summarizing data collection from past year (spring, summer and fall counts, plus permanent counts)											◊	◊

Notes:
- Contact data collection firm three months in advance of data collection to schedule counts.
- Check construction schedule two weeks in advance of data collection to assess any conflicts with count locations.

COUNT STORAGE AND SHARING

In the future, the City's count data will be available online via the City's new online mapping program. Counts conducted as part of the City's annual data collection effort will be available, as well as:

- Historical data collected before the program was updated;
- Data collected by BPRD on trails;
- ODOT data collected at Automatic Traffic Record (ATR) stations and 48-hour counts collected on a rotating cycle every three years within the City.

REPORT ORGANIZATION AND PURPOSE

This report is intended to provide a yearly update on the City's count program, including changes in counting locations, frequency, or timeframe. In addition, it provides a summary of the data collected within the year. In future reports, trends over-time will also be assessed to determine overall changes in vehicle, bicycle and pedestrian volumes at key locations. This report is organized into the following chapters:

1. Twenty-Four Hour Vehicle Counts
2. Short-Term Bike and Pedestrian Counts
3. Turning Movement Counts
4. Continuous Multimodal Counts
5. Mode Split
6. *Historical Trends (to be added in the future)*