



# Clark County Parks Trail Counting Program

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Luke Jensen Sports Park



# Trail Counting Objectives



1. To assess current trail usage
2. To estimate future trail usage and trends
3. To provide data to assist with parks and recreation planning
4. To provide data to assist in the development of grant applications

# Manual Trail Counting

- Pencil and paper required, small initial \$ investment
- Little or no training required
- Provides accurate and comprehensive data on trail usage and classifies users
- Covers a few days a year and does not capture variations over time
- Requires several volunteers at multiple locations
- Good opportunity to engage with the public

# Infrared (IR) trail counters

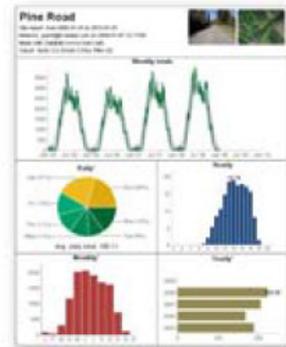
- Requires infrared equipment and computer peripherals, initial \$ investment
- Training required
- Discrete, does not classify trail user
- Provides continuous, visible data throughout the year
- Requires periodic maintenance



TRAFx Counters



TRAFx G3 Dock and  
Field Case



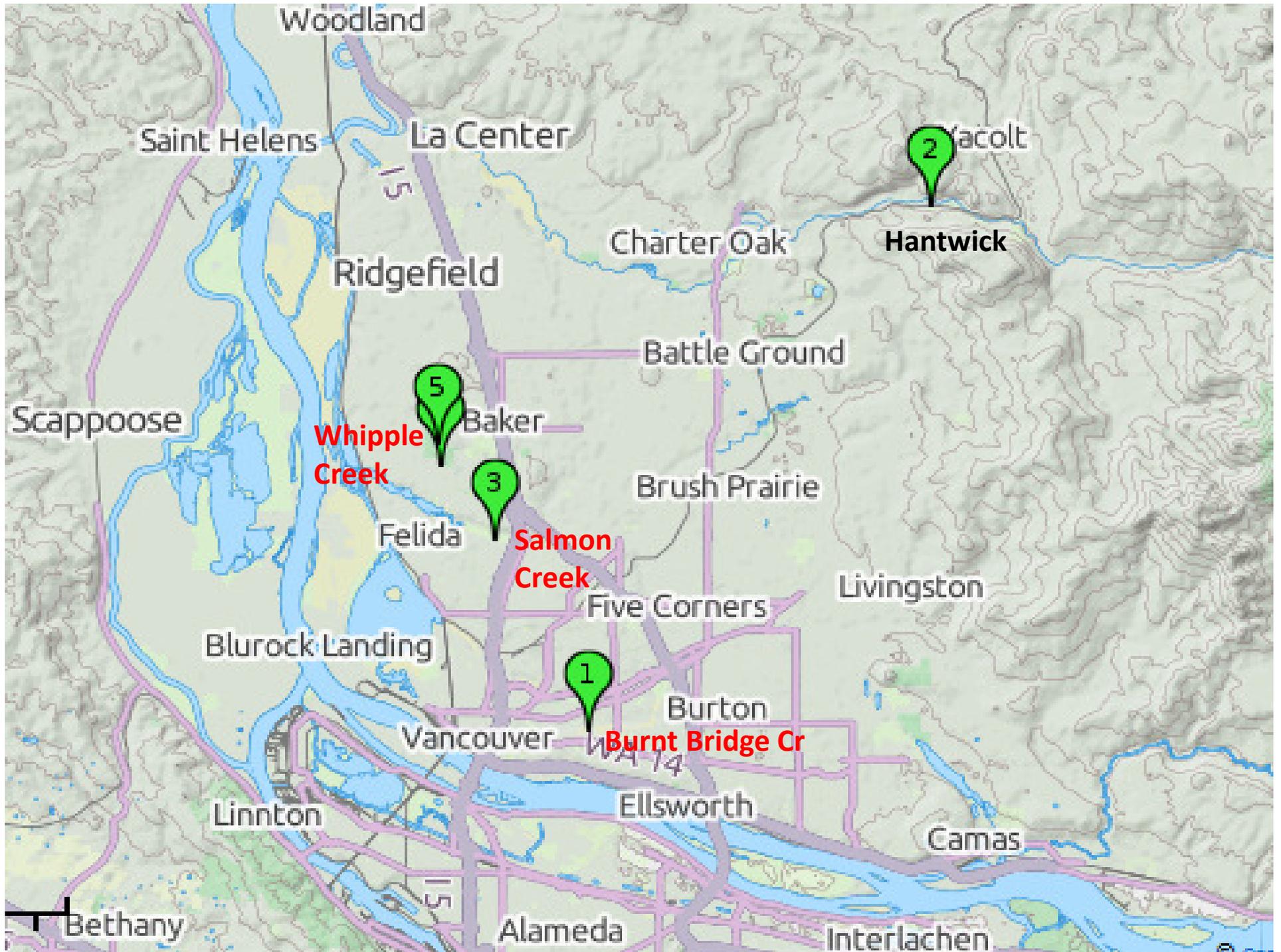
TRAFx DataNet  
--multi-user plan



Cables  
--serial and USB

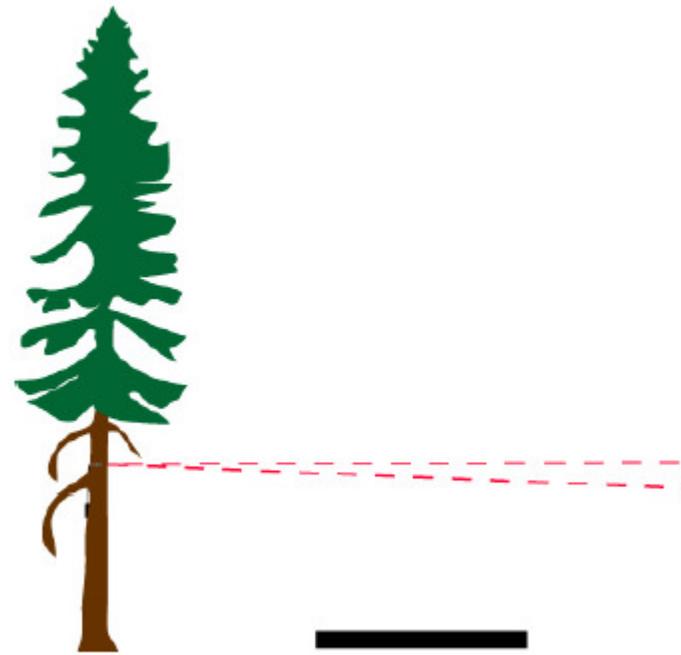
# IR Trail Counter System

| Trail                               | Status  |
|-------------------------------------|---|
| Whipple Creek                       | One counter, North entry<br>One counter, South entry  |
| Salmon Creek                        | One counter, near VGSA field                          |
| Burnt Bridge Creek                  | Two counters near Divine Ave.                         |
| Moulton Park Falls Trail (Hantwick) | Counter removed Dec 2013                              |
| Frenchman's Bar Park                | No counters, prospective location<br>has been scouted |
| Lacamas Park (Round Lake Loop)      | No counters   |
| Captain William Clark Park          | No counters   |



# IR Trail Counter Operation

- Infrared trail counters count walkers, runners, bicyclists and animals
- They are not 100% accurate
- Anomalies:
  - Count two people walking side-by-side as one person
  - Count a person twice: outward bound and return trip
- Can be calibrated to correct for 'anomalies' and determine an adjustment factor



# IR Trail Counter Placement

- Site locations are assessed based on the following attributes:
  - Trail use visibility: the position of the TrafX\* IR counter allows for discrete and accurate trail passage counting of pedestrians and bicyclists
  - Infrared viability: the position of the counter and sign post adequately shields the IR sensor from sunlight and provides stand-off from vegetation
  - Accessibility and Maintainability: the trail counter IR sensor is located to allow ease of access for installation, maintenance and repair or replacement

# IR Trail Counter Placement

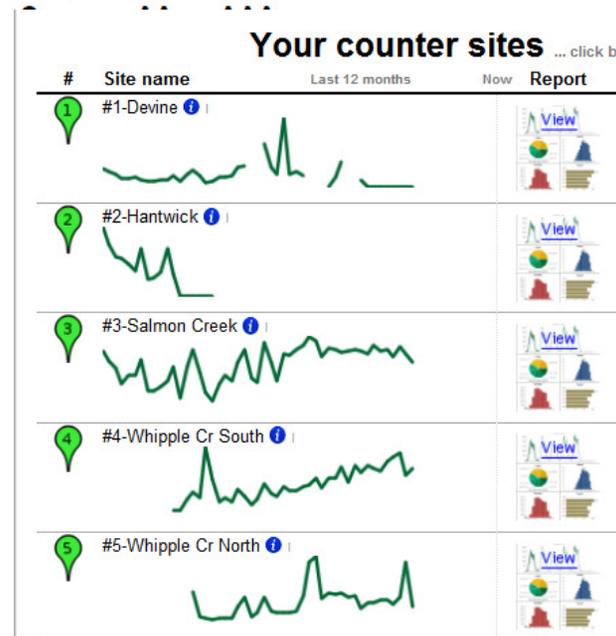
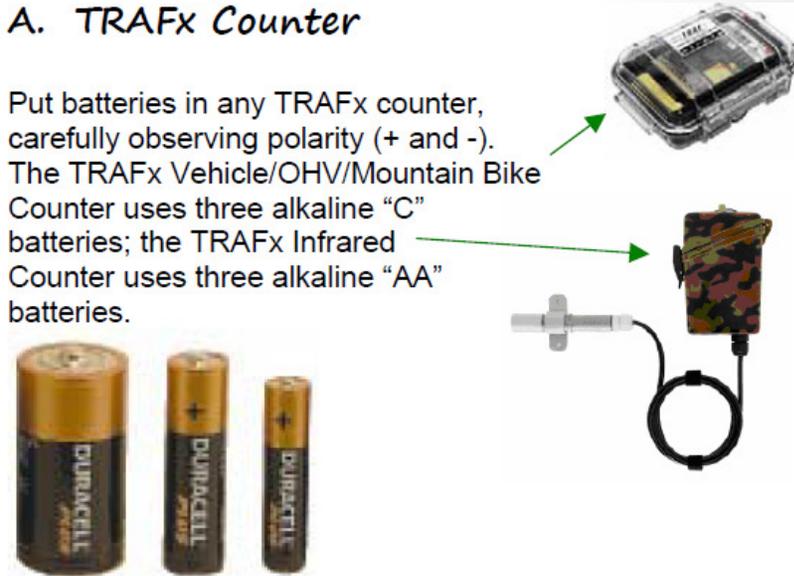


# IR Trail Counter Maintenance

- Counters get their power from batteries which need to be checked periodically
- The data in the counters needs to be downloaded periodically so the data can be made visible and available to others
- The data needs to be analyzed to ensure the counters are working properly (ex: Burnt Bridge Creek)

## A. TRAFx Counter

Put batteries in any TRAFx counter, carefully observing polarity (+ and -). The TRAFx Vehicle/OHV/Mountain Bike Counter uses three alkaline "C" batteries; the TRAFx Infrared Counter uses three alkaline "AA" batteries.



# IR Trail Counter Data Analysis

- Trail counter data needs to be given a context to be meaningful

TRAFx

HOME ANALYZE UPLOAD MANAGE ADMIN ?

Welcome to DataNet!  
A smarter way to analyze, manage, store and share your TRAFx data.

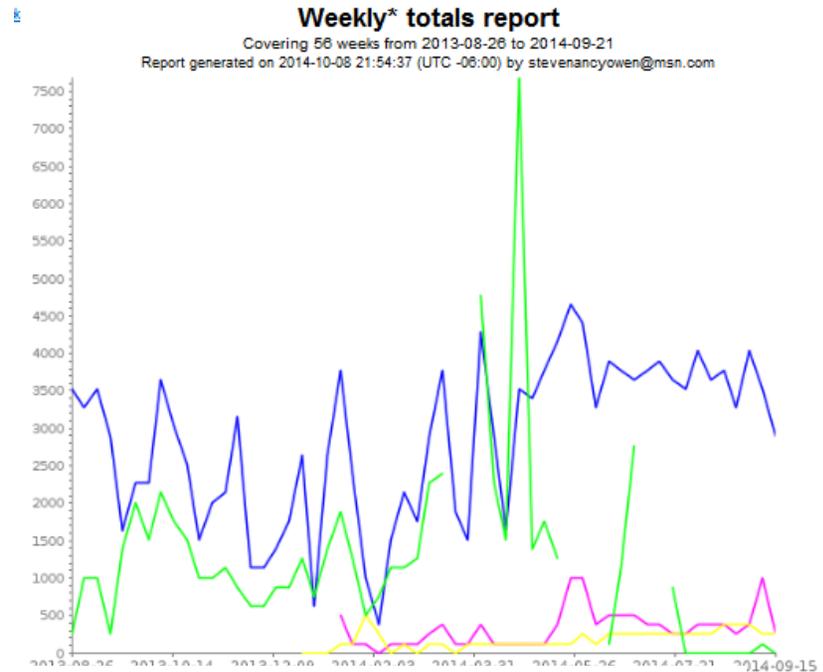
[Click to view](#) [Master Summary](#)

Your counter sites ... click below to explore

| # | Site name           | Last 12 months | Now | Report | Photo             | Image 2 |
|---|---------------------|----------------|-----|--------|-------------------|---------|
| 1 | #1-Devine           |                |     |        |                   |         |
| 2 | #2-Hantwick         |                |     |        | No image Uploaded |         |
| 3 | #3-Salmon Creek     |                |     |        | No image Uploaded |         |
| 4 | #4-Whipple Cr South |                |     |        | No image Uploaded |         |
| 5 | #5-Whipple Cr North |                |     |        | No image Uploaded |         |

**Step 3. Select report type:**

| Counts                      |                            | Patterns                     |                               | Pies                              | Other                              |
|-----------------------------|----------------------------|------------------------------|-------------------------------|-----------------------------------|------------------------------------|
| <a href="#">Daily</a><br>   | <a href="#">Weekly</a><br> | <a href="#">24 hours</a><br> | <a href="#">7 days</a><br>    | <a href="#">Compare sites</a><br> | <a href="#">Master Summary</a><br> |
| <a href="#">Monthly</a><br> | <a href="#">All</a><br>    | <a href="#">52 weeks</a><br> | <a href="#">12 months</a><br> | <a href="#">7 day pie</a><br>     | <a href="#">Yearly trends</a><br>  |



[Totals](#)  
[Totals](#)  
[Totals](#)  
[Totals](#)

# IR Trail Counter Calibration

- Example: Calibration results from Salmon Creek taken in April 2014
- Over a one-hour period, IR counter measured 77 indications
- Over the same period (watch synchronized) the manual count was 103
- Adjustment factor would be:
  - $\text{Adj} = 103/77 = 1.33766$



# Future IR Counting Sites



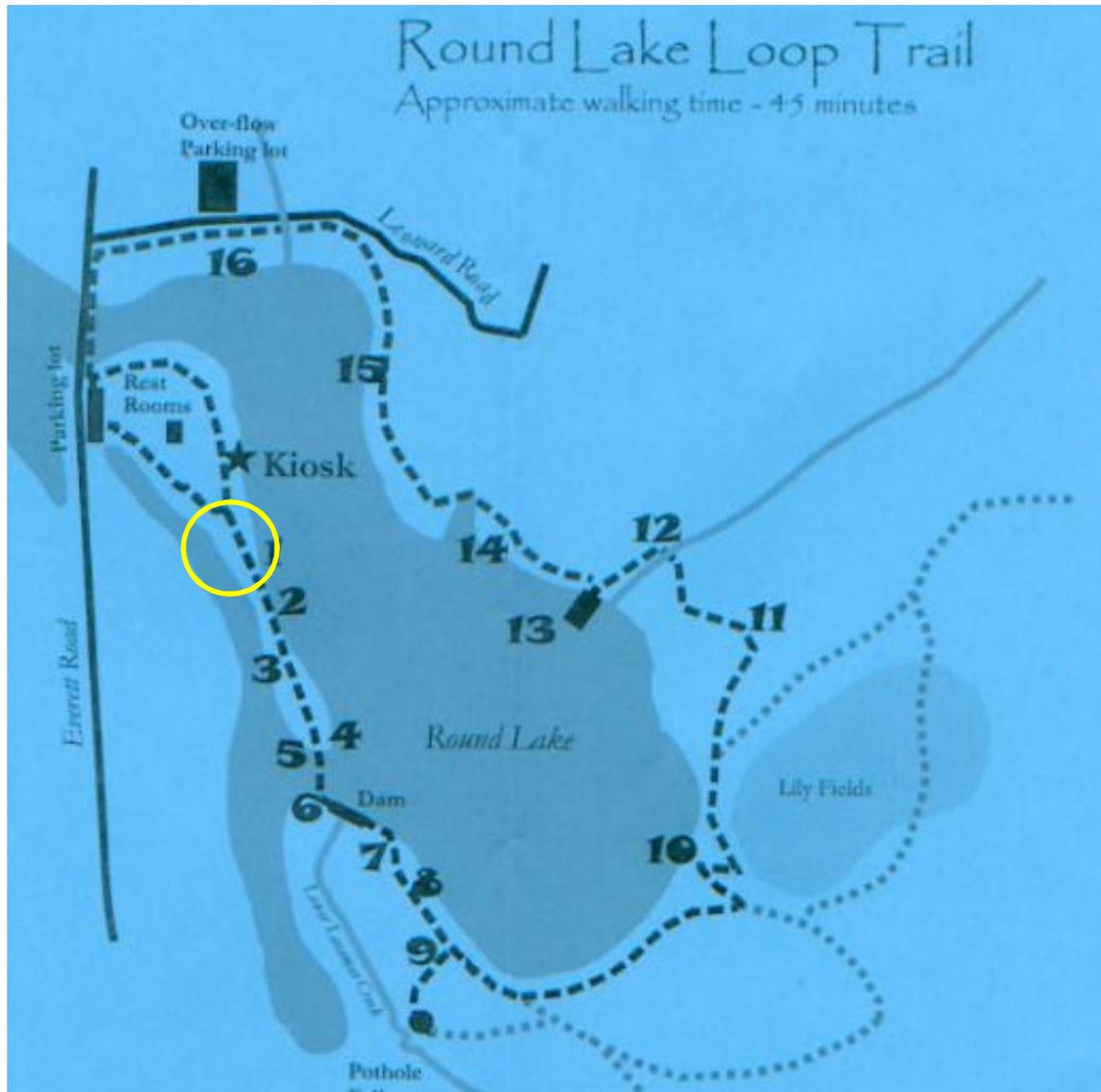
**Frenchman's Bar**

**Captain William Clark Park**



# Future IR Counting Sites

## Round Lake



# Summary

- Infrared trail counting provides useful information for parks planning
- Trail counting program includes both manual and IR counting methods
- Trail counters require periodic maintenance to gather information and keep them operating
- IR trail counting system is being monitored and managed by parks personnel and a volunteer effort
- There are plans to expand the network of IR trail counters

