

# Using Volunteer Geographic Information to Update the City of Colorado Springs Trails

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# Introduction

- Delayed spatial data collection in our parks has resulted trail erosion, deferred maintenance, and higher repair costs
- Illustrate how resource constrained municipalities can use the general public to source data to assist with park and trail maintenance
- Crowdsourcing and, more specifically, its close ally Volunteered Geographic Information (VGI)

# Data and Methods

- Master data contains 500 different hikes or rides with 458,241 data collection points
- Study area data set, Palmer Park, contains over 100 different rides and 140,170 data collection points
- A new file geodatabase was created to hold the study area data points and the trails
- A map was created using 2012 aerial imagery, official city trails, Palmer Park parcels, and the VGI data.

# Findings

- Trails on private property
- Trail Realignment
- Trails seen in the imagery but not in the official trail data
- Trails that are not seen in imagery and are not in the official trail data
- Social Trails

# Palmer Park Overview



# Trail Realignment





# Private Property



# Trail in Imagery, Not in Trail Data





# Hidden Trail



# Social Trail



# Implications of Findings

- Trails on private property could be a concern
- Social trails create issues with erosion on the park trails
- Incorporating VGI can help focus the efforts of the friends/user groups
- Maps of the locations that need work could also be delivered through web-enabled devices

# Future Work

- Engineering Department
- Planning Department



# Conclusion

- Incorporating VGI into the overall strategy of the City of Colorado Springs, Parks, Recreation and Cultural Services Department can help leverage limited resources
- VGI also creates the opportunity for a private/public partnership that can benefit all of the park users.
- VGI leads to excellent information about the actual park trail usage compared to the perceived park trail usage.