



# Land Use Land Cover for the Denver Region

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September 11, 2018



## High level look at the opportunity

The Babbitt Center for Land and Water Policy wants to pay the Conservation Innovation Center on our behalf to generate a 1000 square mile Land Use Land Cover pilot data set in our region.

### Value to us

- Leverages our DRAPP imagery to create a new derivative product
- Results in LULC data for a portion of the region and methodology to follow for the remainder of the region

### Our contribution

- Determining classification, accuracy requirements and other specifications
- QAQC of the product so they can train and refine their algorithms



# Detailed agenda

- Introductions
- Intro to DRCOG
- Intro to the Babbitt Center
- Intro to the Conservation Innovation Center
- Small group brainstorming
  - Use cases
  - Classes
  - Accuracy
  - Pilot area location
- Next steps

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# DENVER REGIONAL COUNCIL OF GOVERNMENTS



# DRCOG's mission

**DRCOG is a planning organization**



**Where local governments collaborate to:**

Establish  
guidelines

Set policy

Allocate funding



**In the areas of:**

Transportation and  
personal mobility

Growth and  
development

Aging and disability  
resources





## Facilitator

- a project to acquire high resolution aerial imagery over the Denver Region every two years since 2002 on behalf of ~50 public partners
- a project to collect features of the built environment (buildings, sidewalks, parking lots etc) from the imagery since 2014 on behalf of ~30 public partners

## Data provider

- DRCOG owns and can provide the latest imagery (2018) which is otherwise restricted.

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**BABBITT CENTER FOR LAND AND WATER POLICY**

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# CONSERVATION INNOVATION CENTER





## Detailed objective

- Leverage Denver Regional Aerial Photography Project (DRAPP) and LIDAR data to create land use land cover information by:
  - Creating a pilot area that results in a finished product for ~20% of the region.
  - Create methodology that can be replicated for the remaining ~80% of the region.
- Determine LULC classification, accuracy requirements, and related specifications that suit our region




# Activity

## Activity

1. Get in groups of 3-4
2. Use the post-its to record notes
3. Report out to the group
4. Repeat for each topic (*about 15 minutes each*)

## Topics

1. Use cases
2. Classes
3. Accuracy
4. Pilot area



Are you on the phone? You can chat at us with your suggestions.



# How would you and/or your organization use a high-resolution land cover layer?

*Suggestions might include things like...*

- *Determine canopy cover of urban areas that relates to species diversity and urban heat*
- *Study urban growth and gentrification*
- *Evaluate sustainability of neighborhoods using rooftops gardens and community gardens*
- *Identify natural corridors and connectivity of natural areas*



## Brainstorm - classes

What 5-10 classes would be most important to define in the Denver region?

*Suggestions might include things like...*

- *Structures*
- *Impervious surface*
- *Forest*
- *Plains*
- *Mining*



## Brainstorm -accuracy

What accuracy is required for your use case(s)?

*Think about the minimum mapping unit: the resolution at which a feature can be captured and deliberately classified.*





## Brainstorm – pilot extent

- 1000 square miles (preferably square and contiguous, *but up to 3 sections are doable*)
- Representative of:
  - Urban/Semi-urban (with and without associated planimetric data)
  - Rural mountains
  - Rural plains
- Location is contingent on where QAQC volunteers exist

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# LOGISTICS



# Timeline

- 2018 Q4
  - Finalize scope
  - Data preparation
  - Solidify QC commitments
- 2019 Q1, Q2
  - Processing
  - QAQC
  - Reprocessing
  - Final delivery



# QAQC process

## Training

- Online webinar
- Hands-on workshop looking at different use cases

## Effort

- Review classification in-house and return a shapefile of issues
- Time required depends on factors like *number of classes* and *rural vs. urban* (1 hour likely QC's 1-3 sq mi of urban and 5-10 sq mi of rural)



## Next Steps

- Create a focus group that will:
  - Finalize scope
  - Perform QC
- **To volunteer for the focus group, contact Ashley Summers at [asummers@drcog.org](mailto:asummers@drcog.org).**



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QUESTIONS?