

SCOPE OF WORK

PILOT PROJECT: CROP TYPE MAPPING USING TIME-SERIES LANDSAT IMAGERY FOR COLORADO WATER CONSERVATION BOARD

1. Introduction

The Colorado Water Conservation Board (CWCB) currently uses remote sensing and GIS to delineate agricultural field boundaries and monitor irrigation for crop production. The two largest crop production areas in Colorado are Grand Junction and Olathe (and surrounding areas). NCDC will provide a proof-of-concept analysis by providing crop type classification using time-series Landsat imagery for a pilot area (20 mile radius) in the Grand Junction and Olathe agricultural production area. The crop types that are of interest to CWCB are: alfalfa, corn, grain crops, vegetable crops, soybeans/dry beans, and grass/pasture.

NCDC will coordinate with 3rd party vendors to acquire and pre-process the Landsat imagery. We will also inquire as to the disposition of the free Landsat 5 data through direct sources with the USGS EROS Data Center. The overall accuracy requirement is 80% and it is understood that certain crop types will not have sufficient training samples to ensure a confidence level.

2. Deliverables

All final products will be delivered on an external hard drive in digital format in UTM NAD83 Zone 13N, Meters. All geospatial data will be accompanied by metadata approved by the Federal Geographic Data Committee. Included with this delivery will be the following files:

- 30-meter resolution, Landsat TM or ETM, 1:50000 orthorectified with atmospheric corrections, image mosaic (GeoTIFF or IMG)
Growing Season Acquisition Dates: 4/5/2000, 5/23/2000, 5/31/2000, 6/16/2000, 7/18/2000, 7/26/2000, 9/12/2000 and 10/14/2000
- 6-class crop type classification in ESRI shapefile or Raster format (GeoTIFF or IMG)
- Written report summarizing methodology, accuracy assessment, and satellite image specifications

It is important to observe that the source of higher accuracy for the accuracy assessment and the training data have been provided by CWCB in the form of Quad Maps and an existing crop type product over the same geographic area.

3. Price and Payment Conditions

This is a time and material (T&M) purchase order with a maximum cost of \$5,000.00. NCDC will keep track of billable hours and invoice according to the following schedule:

100% upon receipt of final deliverables by CWCB.

4. Time of Delivery

NCDC will maintain a flexible start and end date due to the effect that the current economic situation has had on the CWCB budget. It is anticipated that the final deliverables will be ready for shipping within 4-6 weeks after contract signing.

