



August 26<sup>th</sup>, 2020

Request for Information No. 20-0086  
Regional Imagery Acquisition

**PROPOSALS DUE:**

**September 19<sup>th</sup>, 2020  
on or before 2:00pm**

**SUBMIT PROPOSAL TO:**

County of Imperial  
Attn: Purchasing Agent  
Purchasing Department  
1125 Main Street  
El Centro, CA 92243

## I. SUMMARY

The County of Imperial is soliciting responses in response to Request for Information (RFI) No. 20-0086, Regional Imagery Acquisition.

The RFI is comprised of the following parts presented herein as Attachments:

Attachment 1 – Submittal Information, Organization, and Content

Attachment 2 – Scope of Work

Attachment 3 – Notice Regarding California Public Records Act

Sample Agreement

## II.

<b>TIME LINE</b> <b>(Subject to Change)</b>	<b>DATE</b>	<b>TIME</b> <small>(Pacific Standard)</small>
RFI Released	August 26 <sup>th</sup> , 2020	
Deadline to Submit Questions to the Purchasing Supervisor	September 5 <sup>th</sup> , 2020	5:00 p.m.
Posting of Answers to Questions (if any)	September 11 <sup>th</sup> , 2020	5:00 p.m.
<b>RFI Due Date</b>	September 19 <sup>th</sup> , 2020	<b>2:00 p.m.</b>

## III. SUBMISSION

All interested parties must submit three (3) hard copies (1 original and 2 copies) and 1 USB copy of your response to:

County of Imperial Purchasing Department  
Attn: Purchasing Agent  
1125 W. Main Street  
El Centro CA 92243  
Ref: Regional Imagery Acquisition

Proposals sent by regular, overnight mail, or hand delivered must be postmarked by 2:00 pm Pacific Standard Time (PST) on September 19, 2020, to the address above. Late responses will be deemed ineligible for review. **No faxed or emailed proposals will be accepted.**

All submissions are considered a matter of public record.

Note: “proposer,” “consultant,” and “firm” may be used interchangeably throughout this document.

## IV. CONTACT

Debbie S. Wray  
1125 W Main Street, El Centro CA 92243  
(442) 265-1866

[debbiewray@co.imperial.ca.us](mailto:debbiewray@co.imperial.ca.us)

The County of Imperial Purchasing Agent is the only person to contact for any questions or concerns during this RFI process.

## **V. QUESTIONS AND ANSWERS**

Questions must be submitted in writing to [debbiewray@co.imperial.ca.us](mailto:debbiewray@co.imperial.ca.us) referencing the RFI number. Answers to the questions will be posted on the County of Imperial, Purchasing Department website <https://purchasing.imperialcounty.org/>.

## **VI. COUNTY OF IMPERIAL RIGHTS**

1. This RFI is issued solely for information and planning purposes. It does not constitute a Request for Proposal (RFP) or a promise to issue an RFP in the future. This request for information does not commit the County of Imperial nor any of its partner agencies to contract for any goods or service whatsoever. Further, the County of Imperial is not at this time seeking proposals and will not accept unsolicited proposals. Firms responding with a submittal are advised that the County of Imperial will not pay for any information or administrative costs incurred in response to this RFI; all costs associated with responding to this RFI (including but not limited to parking, printing, postage, travel, etc.) will be solely at the submitting firm's expense, even in the event of RFI cancellation. Not responding to this RFI does not preclude participation in any future RFP, if any is issued.
2. Communication between the vendor and any member of the evaluation team (Proposal Review Committee) during the process is prohibited, except when and in the manner expressly authorized in this RFI. Violation of this restriction is grounds for disqualification or any solicitation process resulting from this RFI.
3. COUNTY OF IMPERIAL reserves the right to:
  - A. Reject any and all submittals that are not in accordance with the required format described in this RFI;
  - B. Reject any and all submittals;
  - C. Request additional information;
  - D. Cancel the entire RFI;
  - E. Issue a subsequent RFI;

## SUBMITTAL INFORMATION, ORGANIZATION, AND CONTENT

All submittals should contain the following information, at a minimum:

### 1. **TITLE PAGE**

Provide the following on the Title Page:

- ✓ RFI Number
- ✓ Title of the Project
- ✓ Name and Address of Firm
- ✓ Phone Number of Firm - **Do not include non-business (personal) phone numbers or address in as this information may become public under the California Public Records Act** (see Attachment 3)
- ✓ Prime Contact Person
- ✓ Email Address of the Prime Contact Person
- ✓ Signature of the Individual Authorized/Obligated to Commit the Firm to this Project

Cover letter should be addressed to the attention of the Purchasing Agent.

### 2. **TABLE OF CONTENTS**

- ✓ A clear identification of the materials by section and page numbers.

### 3. **TECHNICAL APPROACH**

- ✓ A statement and discussion of the project objectives, concerns, and key issues.
- ✓ The technical approach for performing the tasks must include a detailed Scope of Work along with the process for executing the requirements and objectives of the project.
- ✓ A discussion of the difficulties expected or anticipated in performing the tasks, along with a discussion of how the firm proposes to overcome or mitigate against those difficulties.
- ✓ An estimated schedule for completion of the work, including performance and delivery schedules indicating phases or segments of the project, milestones, and significant events.
- ✓ A statement of the extent to which the firm's proposed approach and Scope of Work will meet or exceed the stated objectives discussed in this RFI. Furthermore, a discussion of how the firm would modify the project, and/or schedule to better meet these objectives.

### 4. **PRICE SHEET**

- ✓ Submittals must include a Price Sheet (in United States currency). The Price Sheet is only intended for the County of Imperial to estimate potential price ranges at the time of any future contract award.

### 5. **PROFILE OF FIRM**

- ✓ A statement indicating if the firm is local or national and a summary of representative experience relevant to the work described in the Scope of Work for this RFI. Firm must also be prepared to sign a final Agreement such as the sample attached.
- ✓ The location and telephone number of the office from which the work is to be done.
- ✓ Identification of the individuals who will perform the work, including officers, project manager and key staff. State the time commitment and include resumes for key individuals. **Do not include social security numbers, non-business (personal) phone numbers or address in a resume as this information may become public under the California Public Records Act** (see Attachment 3).

**6. REQUIRED FORMS**

- ✓ All firms must fully complete the Notice Regarding California Public Records Act (Attachment 3), regardless of whether the firm is requesting to exempt submittal information from disclosure under the California Public Records Act.

## **1.1 Introduction**

The County of Imperial (COUNTY OF IMPERIAL) and potential subscribing partners are exploring the acquisition of orthogonal imagery with Near Infrared (NIR), obliques images, and building outlines for the COUNTY OF IMPERIAL region. The goals of the regional imagery acquisition are:

1. Obtain high accuracy aerial imagery (and related products) to support local jurisdictions' needs for land use and asset monitoring, planning, pre-engineering design, code enforcement, and geospatial analyses.
2. Unify imagery acquisition to improve communication among COUNTY OF IMPERIAL's local jurisdictions and improve the ability to engage the public.
3. Integrate aerial imagery and related products with COUNTY OF IMPERIAL's databases and other geographic information systems (GIS).
4. Eliminate duplicate acquisitions and leverage economies of scale to obtain more and better products.
5. Save taxpayers money and increase efficiency through collaboration.

The primary purpose of this Request for Information (RFI) is to identify firms that can execute the project and establish a cost estimate for the desired products. Any quantities listed herein are for informational purposes only and represent COUNTY OF IMPERIAL's estimated requirements. COUNTY OF IMPERIAL will be neither obligated nor restricted to the quantities or locations indicated. COUNTY OF IMPERIAL would like to have the imagery flown during the fall of 2020. The geographic area for this RFI covers most of the COUNTY OF IMPERIAL Region. The ultimate project will require aerial imagery at a minimum of three-inch resolution in the urban core and nine-inch resolution in primarily rural areas. COUNTY OF IMPERIAL anticipates updating the orthophotography database every two (2) to four (4) years for the next decade. This RFI aims to describe as much as is currently know about COUNTY OF IMPERIAL's forecasted requirements. We welcome offers for other options better than the base requirements in terms of area coverage and flight frequency.

## **1.2 Project Objectives**

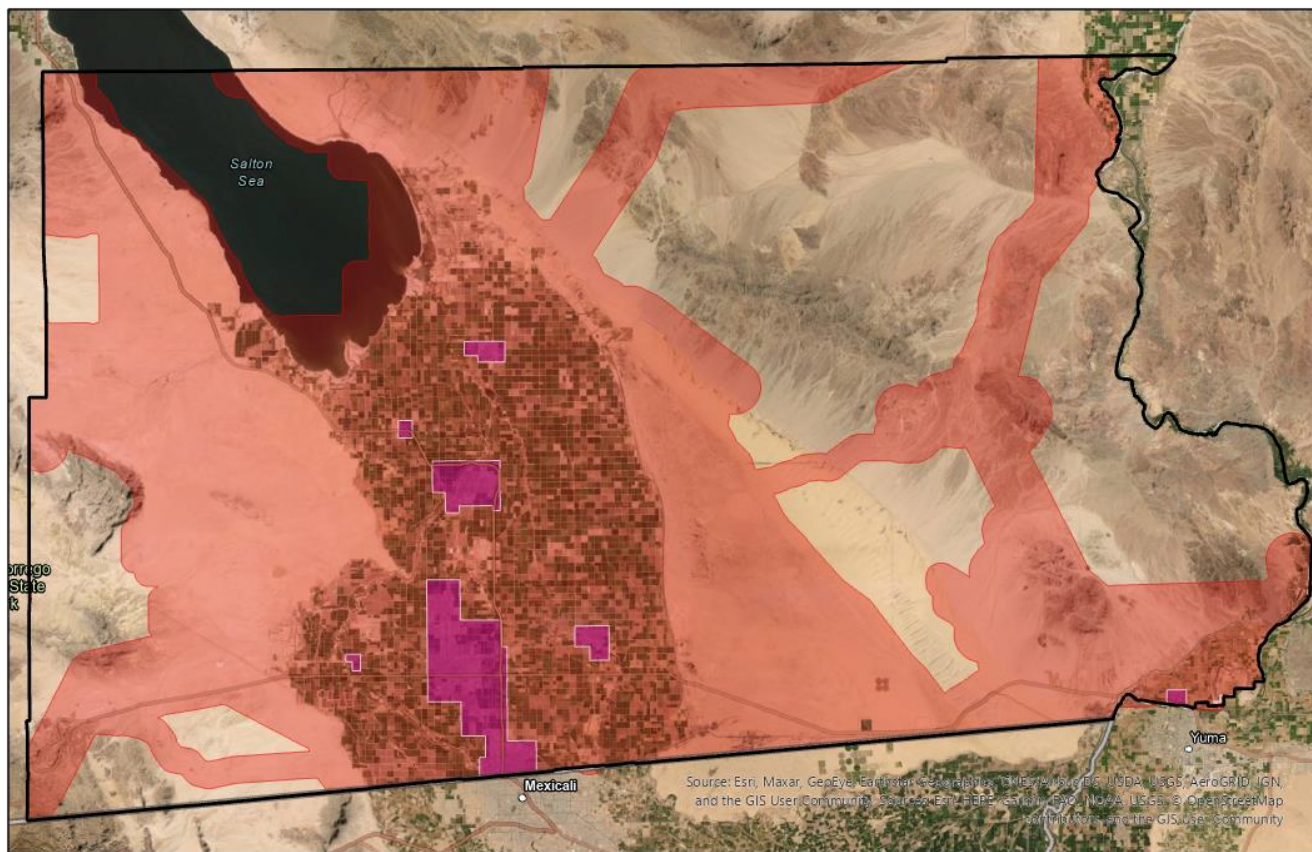
This imagery acquisition project will be color and near infrared, high resolution, and spatially accurate aerial imagery to be used by COUNTY OF IMPERIAL and other stakeholders, such as transportation commission, council of governments, and special districts. The main objectives of this project are:

1. to obtain a seamless digital imagery product for visualization and analytical purposes that can be used in geographic information systems (GIS) and/or computer-aided design (CAD) software;
2. to incorporate data into on-line GIS products for different jurisdictions and stakeholders;
3. to acquire a product to verify and update land use and capital improvement projects. Examples include, but are not limited to, mapping assessor's properties, mapping public streets, public infrastructure (e.g., power lines, water canals, manholes), mapping various land uses, assets, and general vegetation classifications.
4. to acquire a product that will facilitate identification of changes from previous aerial surveys, and will allow analysis in a digital environment;
5. to acquire a mosaic dataset that references the imagery and identifies metadata (to include pixel storage definitions, geo-referencing, processing, format, and so forth);
6. to obtain a product that can be used in conjunction with other digital spatial databases currently stored in ArcGIS (shapefile and geodatabase formats) or CAD;
7. to obtain a product that can be integrated with other available vector and raster data in the study area;

- 8. to obtain a product that will facilitate responding to requests for aerial imagery, and other data that COUNTY OF IMPERIAL intends to provide through interactive web-based applications and enterprise services.
- 9. to acquire a product that will enable photo draping on terrain models and allow for various terrain analyses;
- 10. to obtain building representations (building outlines);
- 11. to obtain oblique images;
- 12. to obtain training for the oblique image software and/or other offered products; and
- 13. to have the option for firm to host the abovementioned data sets.

**1.3 Geographic Extents**

COUNTY OF IMPERIAL has need for orthographic color and near infrared aerial imagery, obliques, and building outlines. Services shall be performed for an area of approximately 2,952.6 square miles. The desired coverage for oblique imagery is approximately 92.5 square miles. The minimum geographical extent of the products requested is as follows:



Map Key  
Imperial County Boundary  
Oblique Imagery Coverage  
Ortho Imagery Coverage

0 10 20 40 Miles



COUNTY OF IMPERIAL requests information for imagery and related products for the COUNTY OF IMPERIAL region that meets the technical specifications in the following pages.

COUNTY OF IMPERIAL and subscribing partners will be funding this project. COUNTY OF IMPERIAL will only pay for data after full quality control and acceptance by COUNTY OF IMPERIAL. Firms should use management methods that shall ensure project schedules are maintained. The successful firm on this project shall use means to identify and resolve production problems early in the project to avoid schedule delays.

### **1.4 Professional Standards and Practices**

This RFI is specifically intended to identify aerial photography firms with the necessary equipment, experience, and personnel needed to create quality geo-referenced imagery and other associated derived products in accordance with the requirements outlined in the Project Specifications. The Firm's qualified to compete for the COUNTY OF IMPERIAL 2020 Aerial Acquisition project will be self-contained firms with turnkey services, experience, aircraft, processing equipment and photogrammetric expertise to ensure that the vendor project team can deliver professional quality products in a timely and cost-effective manner.

### **1.5 Imagery Acquisition and Related Products**

This RFI intends to assist the COUNTY OF IMPERIAL with acquiring digital color imagery with a near-infrared (NIR) band for 2020. The geographic area for this RFI is in the COUNTY OF IMPERIAL Region. The aerial imagery will be acquired (at a minimum) at a three-inch (3") resolution in urban areas and six-inch (6") resolution in primarily rural or undeveloped areas. The COUNTY OF IMPERIAL also intends to acquire building representations and oblique images. These products should be itemized separately for the abovementioned area.

### **2.1 Collection Requirements**

The imagery flight should not occur before award of a contract and issuance of a Task. Since cloud free imagery is required, an extension of the flight collection end-date is possible if no cloud-free days occur during the proposed collection period. The imagery shall not be captured when the ground is obscured by other factors such as flooding, excessive haze, excessive heat, smoke, or other obscuring atmospheric conditions. Aerial photography will be conducted between 10:00 AM and 2:00 PM to provide required sun angle to optimize radiometry of imagery (minimum 45 degrees) in order to minimize shadowing. Firms shall use good professional judgment and narrow the collection window, if necessary, to produce optimum results. The flight crew will then acquire the digital images when all the factors are satisfied. All aerial photography conducted for this project will conform to the specifications established by the American Society for Photogrammetry and Remote Sensing (ASPRS) Draft Aerial Photography Standard (1995). Airborne GPS controls will be used in the development of the digital orthophotos.

### **2.2 Flight Plan and Optional Pilot Phase**

#### **2.2.1 Flight Plan**

Firms shall submit to the COUNTY OF IMPERIAL Project Manager the proposed flight plan and shall not obtain imagery until the COUNTY OF IMPERIAL Project Manager approves the flight plan. A minimum of 60% end lap and 30% side lap is required. More conservative end lap (e.g. 70%) and side lap (e.g. 40%) may be proposed by the firm. At that time the successful firm should discuss with the COUNTY OF IMPERIAL's Project Manager the availability of the aircraft to perform the image acquisition. The successful firm shall provide a report (often called a Navigation Report) to the COUNTY OF IMPERIAL Project Manager, showing post-processing results and photo capture points.



The successful firm shall obtain all necessary clearances, including military and government (Air Route Traffic Control Center) clearances to conduct the flights. Reflights shall be performed within 10 days (weather permitting) for the purpose of securing replacement images for all which fail to meet the minimum specifications set forth in the contract. The successful firm will conduct a review within 1 week after the original flight to ensure that the imagery meets contract specifications. The COUNTY OF IMPERIAL Project Manager shall have 15 days to review imagery submitted by the firm to identify imagery deficiencies and to notify the Firm of the deficiencies. The successful firm shall have 15 days to correct the imagery or to recollect imagery and resubmit to the COUNTY OF IMPERIAL Project Manager. The COUNTY OF IMPERIAL Project Manager shall be the sole judge as to what constitutes “imagery deficiencies.” There shall be no additional charge for refights and/or imagery correction. Additional quality review will be conducted by the COUNTY OF IMPERIAL’s Project Manager or, if designated, the project team as the georeferenced imagery is delivered to COUNTY OF IMPERIAL.

### **2.2.2 Optional Pilot Phase and/or Sample Imagery Request**

Each firm shall provide samples of similar imagery, specifically the 3-inch/pixel and 6-inch/pixel or better color and, if available, infrared imagery as well. The COUNTY OF IMPERIAL Project Team will utilize these aerials as a pilot survey to perform quality control (QC) regarding the: a) seamlessness, b) accuracy, and c) true color and color balance across image tiles, and to provide feedback to the vendor.

The sample imagery must be included with your submittal. Note that the file cannot exceed 25 Megabytes. Acceptable formats for the sample imagery include any of the following: geotiff. Compressed formats must be at a ratio of 20 to 1 or less. Projection and datum for each file must be specified.

### **3.1 Sensor Specification and Calibration**

#### ***Digital***

The primary imagery to be acquired shall be RGB Color in the form of three-band geotiffs; where color IR is also requested, the deliverable may be either one four-band geotiff or a set of two three-band geotiffs (one color and one color IR). Firms may also offer both color and IR imagery for each geographic extent as long as the two products are priced separately. COUNTY OF IMPERIAL expects the sensor used by a firm to be able to delineate sharp edges and have high spatial resolution. A copy of the most recent (less than 3 years old) calibration certificate must be supplied. The sensor must be able to acquire blur-free imagery at the proposed resolutions through use of a very fast shutter speed (greater than 1/500th second) or through use of a motion-compensation device. The successful firm shall be liable for ensuring that all photography complies with industry standard tolerances for flight altitude, tip, tilt, side lap, end lap, and crab. In particular, the imagery shall be done with the optical axis of the camera as nearly vertical as possible, always kept below 3 degrees. The tilt between two consecutive exposures shall not exceed 4 degrees. The crab angle shall not exceed 3 degrees. The successful firm will also use automated Aerial Triangulation (AT) using professional Automatic Triangulation software. Exterior Orientation (EO) parameters acquired by Airborne GPS/IMU system will be incorporated into the final solution to increase the accuracy of the automated aerial triangulation (AAT). AT will be performed by a Certified Photogrammetrist.

#### **3.2 Digital Sensor**

For each digital camera proposed, COUNTY OF IMPERIAL prefers that a single camera sensor be used to ensure exact band- to-band registration. If a multi-camera sensor is proposed, the submittal should provide specifications regarding the band-to-band registration or discuss how a highly accurate band-to band registration will be ensured. For each digital sensor proposed, the Modulation Transfer Function (MTF) of the sensor should be provided.

#### **3.3 Image Production Process (including Mosaicking and Radiometric Adjustment)**

The COUNTY OF IMPERIAL will examine the tiling scheme proposed by the firm to assess its appropriateness. On acceptance of each image-based tile, seamlines shall be created using a combination of automated and manual tools and then inspected by an operator. The tiles shall be mosaicked together along the seamlines to produce the seamless ortho image required. The orthophoto imagery shall conform to the quality standards detailed.

The mosaicked images created shall be inspected for both image quality and consistent radiometric quality. Adjacent image tiles shall also be inspected to ensure the continuity of roads and other features. The successful firm shall adjust the radiometric values of a block of ortho images to ensure a consistency of tonal range. Building rooflines that could otherwise have been located on the edge of butt-joined ortho tiles with different orientations shall not be disturbed.

The final process shall be to cut the continuous seamless image into the delivery tile format approved by COUNTY OF IMPERIAL. These tiles then shall undergo a final QC review prior to shipment.

### **3.4 Aerial Imagery Specifications – Requirements**

Each imagery specification option will be priced separately with any optional elements that the successful firm desires to present. The COUNTY OF IMPERIAL Project Team will require the following in the scope of services at the time of contract award:

- a. The aerial photography for three-inch (3") pixel (GSD = Ground Sample Distance) (1"=50' mapping scale) imagery will be acquired for urbanized areas for a total of approximately 8,000 square miles. The photo scale of 1"=50', for all geographic extents abovementioned. Specifically, the imagery needs to be with a horizontal accuracy to National Map Standards 1"=50' (+/- 1.6 ft) from true location at 90% confidence level.
- b. The aerial photography for six-inch (6") pixel (GSD = Ground Sample Distance) (1"=100' mapping scale) imagery will be acquired for the urban/rural areas for a total of approximately 16,000 square miles. The photo scale of 1"=100', for all geographic extents abovementioned. Specifically, the imagery needs to be with a horizontal accuracy to National Map Standards 1"=100' (+/- 3.3 ft) from true location at 90% confidence level.
- c. Natural Color Imagery (RGB): 24 bit (3 bands x 8 bits/band) digital camera collections will include collection of multi-spectral imagery. This true color imagery will be required in two raster file formats (GEOTIFF and Mr. SID).
- d. As solely determined by the COUNTY OF IMPERIAL Project Manager, images must be free of significant defects or inconsistencies in tone, contrast or color within an individual tile and/or between adjacent image tiles; color and contrast shall be natural – no bias towards a single shade or color; samples from the same sensor proposed for this project shall be provided; image shall be free of striping, banding, washouts, and hot spots. Some allowance for high reflection over water will be made. Feature extraction should be possible in lightly shaded areas.
- e. Cloud free imagery is required. The imagery shall not be captured when the ground is obscured by other factors such as flooding, excessive haze, smoke, extreme heat, or other obscuring atmospheric conditions. Aerial photography shall be conducted between 10:00 AM and 2:00 PM to provide required sun angle to optimize radiometry of imagery (minimum 45 degrees) in order to minimize shadowing.
- f. The spatial resolution will be three-inch resolution in urban core and six-inch resolution in the rest of the desired areas.
- g. The projection required will be California State Plane Coordinate System, Zone (5 and 6) US feet, Datum NAD83. The vertical datum needed is North American Vertical Datum of 1988 (NAVD88), US Feet.
- h. The COUNTY OF IMPERIAL Project Team will utilize these aerials as a pilot survey to perform quality control (QC) regarding the: a) seamlessness, b) accuracy, and c) true color and color balance across image tiles, and to provide feedback to the vendor. The successful firm shall provide pilot samples of the captured

imagery on an on-going basis at the end of each flight plan phase and based on these pilot samples will be receiving on-going QC feedback from COUNTY OF IMPERIAL. In the case that COUNTY OF IMPERIAL determines that the aerial imagery does not comply with the agreed specifications, the vendor will be required to take immediate action and bring all captured (up to this point) and future imagery up to standards, e.g., by re-flying these areas, upgrading equipment, enhancing post processing etc.

- i. The successful firm will prepare digital orthophotos set up on the agreed pixel resolutions. The successful firm will then use the COUNTY OF IMPERIAL-provided resolution map to create true digital color orthophotos at the agreed pixel ground resolution over the County of Imperial, with the agreed overlap outside the county boundary.
- j. The successful firm will develop and deliver, together with the aerial imagery, metadata that follows the FGDC metadata standards and describes the: flight date, time, line, area name or grid number, weather conditions, resolution, geographic projection, horizontal and vertical datum accuracy, and photographic equipment that was used for capturing the imagery.
- k. The successful firm will provide the COUNTY OF IMPERIAL Project Manager weekly status reports as detailed below.
  - l. The successful firm will derive building representations for the project's urban areas. Details are provided below in 3.7 Building Representations.
  - m. The successful firm will create oblique images for the desired areas at a minimum. Details are provided below in 3.8 Oblique Images.
  - n. As an optional product to the core deliverable, the successful firm may collect Digital Elevation Data (from LiDAR) for the entire study area. Details are provided below in 3.6 Digital Elevation Model.

### **3.5 Project Reporting, Quality Assurance and Quality Control**

The successful firm shall provide brief weekly email progress reports to the COUNTY OF IMPERIAL Project Manager summarizing the overall status of the project and providing details of the project accomplishments and actions taken for the subject period. The successful firm shall indicate which project milestones have been met and what the next or remaining steps to be taken are. The successful firm shall discuss their quality assurance/quality control plan, outlining the steps taken and the individuals responsible for ensuring the integrity of the final product.

### **3.6 Digital Elevation Model (DEM) - General Requirements**

An optional product. The successful firm shall be responsible for developing a professional, industry standard DEM for the entire study area. The digital elevation data (from LiDAR) or other high-quality options for the study area shall be an optional task order. The deliverable shall be in accordance with the USGS LiDAR Base Specification V1.3, 2018, but other comparable products will be considered. The successful firm shall perform the necessary Ground Survey and other steps necessary to meet the horizontal accuracy and quality of the delivered imagery. Deviations from industry standard procedures must be discussed with the COUNTY OF IMPERIAL Project Team in advance and the successful firm must receive written COUNTY OF IMPERIAL approval for such variations.

**3.7 Building Representations - General Requirements**

Building representations are planimetric features representing buildings that serve as a primary business government, residential function, and so forth. The following outlines general requirements for these features.

- a. Horizontal accuracy shall be consistent with Second Order, Class I, i.e. ninety-five percent (95%) confidence interval of 2 cm base error and 20 parts per million linear errors.
- b. Data creation shall be constrained to American Society for Photogrammetry and Remote Sensing (ASPRS) accuracy standards for large scale class I maps for 1" = 100'.
- c. Vertical datum shall be NAVD88. All vertical stations set will be tied directly to NGS monuments whose orthometric heights were determined by differential leveling and adjustment by the NGS on or after 1995.
- d. Each enclosed building representation will be a polygon and contain a z value (elevation) at the highest point of the building, but exclude flag poles, chimney, and other feature smaller than 4 feet wide. These representations shall have unique IDs and corresponding parcel numbers.
- e. Building representations shall be created for all buildings larger than 20' X 20' (400 sq ft.).
- f. These data sets shall be in an ArcGIS Pro-compatible format and FGDC compliant with full metadata.
- g. All building representation shall conform to accuracy and quality established by the American Society for Photogrammetry and Remote Sensing (ASPRS) for large scale mapping for 1" = 100'.

There are approximately 86,000 parcels in the COUNTY OF IMPERIAL region.

**3.8 Oblique Images - General Requirements**

It shall be the responsibility of the successful firm to obtain low oblique aerial photography in the fall of 2020. Photography shall be acquired when skies are clear, free from turbulence, wind shear, and excessive smoke or haze. The ground shall be free from standing water, and/or snow. Photography shall not be flown during overcast sky conditions, nor shall photography contain objectionable shadows caused by clouds, relief, or low solar altitude. Submittals shall include sun angle, weather conditions, ground conditions and any other parameters that will be used as constraints to ensure high quality data is acquired.

**3.8.1 Flying Height, Camera Angle, and Ground Sample Distance**

Submittals must provide flying heights, camera angle, and ground sample distances (front line, middle line, and back line) that will be used to achieve nominal three-, six-, and nine-inch resolution imagery.

**3.8.2 Aircraft/Camera/Sensor System**

All photography will be acquired using a tested and calibrated strip or frame-based aerial sensor system with direct 4-band image capture capability mounted in a manned aircraft. The aerial sensor system shall be capable of acquiring five images (nadir, north, south, east, and west) at each exposure station or the equivalent if using a strip-based sensor.

## Scope of Work

Attachment 2

Firms must specify, in detail, the brand and specifications of the camera system to be used along with a description of the aircraft, sensor mount, inertial measurement unit (JMU), airborne GPS and antenna, camera/sensor hardware, focal length, the bit depth per color channel captured by the sensor, and a manufacturer's calibration report for the sensor system.

### **3.8.3 Flight Plan**

Flight lines and individual exposure stations shall be spaced to ensure sufficient side and end overlap to provide full coverage of the entire project area. Aircraft operating speeds shall not exceed sensor manufacturer guidelines. Visible image smear is not acceptable.

Firms shall include an Image Collection Plan in their submittal that contains a map of the flight lines and project area and specifies the flying height and speed of the aircraft over the ground, ground sample distance, and image overlap.

### **3.8.4 Re-flights**

Raw imagery shall be reviewed by the successful firm as soon as possible, subsequent to a completed flight mission. Within ten days of a flight mission, the successful firm shall confirm, in written form, compliance with aerial imagery collection specifications in abovementioned section. Imagery that does not meet specifications shall be corrected by the successful firm at no additional cost to COUNTY OF IMPERIAL. Replacement imagery shall be acquired within one week of the original flight (provided environmental conditions exist as specified in Section 3.3), using the same camera/sensor system.

Oblique Images will have clear views of the ground and will be free from obstruction by clouds; however, there may be occasional cloud and other shadows. In controlled airspace, around airports, etc., the image resolutions may vary. Quality of Images will be comparable to image sample provided to COUNTY OF IMPERIAL for approval.

### **3.8.5 Specifications**

Images shall to be delivered with a compression ratio of approximately 6:1 and a per image size of approximately 5-7 MB for Oblique Images. Imagery specifications below are from earlier acquisitions and should be used as guidelines for image capture.

a. Community Oblique

Image sensor: 4,872 x 3,250 pixels

Footprint (Nominal):

Front Line: 4,754 feet/1,447 meters

Back Line: 6,682 feet/2,036 meters

Front to Back: 5,932 feet/1,808 meters

Resolution (Nominal):

Front Line: 0.98 feet/pixel

Back Line: 1.37 feet/pixel

b. Neighborhood Oblique

Image sensor: 4,872 x 3,250 pixels

Footprint (Nominal):

Front Line: 1,600 feet/488 meters

Back Line: 2,254 feet/687meters

Front to Back: 2,000 feet/610 meters

Resolution (Nominal):

Front Line: 0.98 feet/pixel

Back Line: 1.37 feet/pixel

### 2. EXPORT

#### a. Image Export: JPEG

#### b. Geo-data Export: Delineated text files or ESRI shapefiles

Geo-data may be exported as points, lines, poly-lines, or polygons to a delineated text file or ESRI shapefile for import into GIS.

### **3.8.6 Software, Extension, and API**

The successful firm shall provide the latest version of the ESRI ArcGIS Extension Software or equivalent, meeting the specifications so that desktop software accesses oblique imagery meeting the specifications. In addition, the successful firm shall provide software that allows access to the obliques outside ArcGIS and an Application Programming Interface (API), including license, which will allow the stakeholders and/or its agents to access Oblique Images hosted through 3rd party applications. Software shall have the following minimal capabilities:

1. Distance Tool - measure lengths, widths, and perimeters
2. Height Tool - determine the height of any feature
3. Location Tool - obtain geo-coordinates of items in the image
4. Area Tool - Measure acreage or square footage of any area
5. Elevation Tool - Access ground elevation
6. Bearing Tool - Determine directional (from True North) location
7. Select Tool - locate by client-supplied data, such a street address, tax account number, coordinates
8. Link Tool - link an unlimited amount of additional data/text per image
9. Text annotation Tool - describe features within an image
10. Line Drawing Tool - draw straight or free-form lines to highlight a feature
11. Circle Drawing Tool - create circular boundaries/perimeters for specific locations
12. Polygon Tool- create polygon boundaries/perimeters for specific locations
12. Navigate Tool - allows for easy navigation through your image warehouse by opening next adjacent image in approximate scale and same direction
13. Search by Address Tool - ability to search from pre-defined queries of parcel address data
14. Zoom - zoom in and out of all images
15. Search - search GIS data and address information and zoom to features that have been found
16. GIS Data Overlay - display GIS shapefile format data on top of oblique imagery.
17. Swipe tool to view previous epoch data (if data available)
18. Export - export oblique imagery for use for display and other purposes
19. Export to GIS - export orthogonal images with corresponding coordinate mapping files for use with
20. GIS - The successful firm shall make GIS layers provided by COUNTY OF IMPERIAL and Participating stakeholders available in the hosted solution. This will allow participants to view these GIS Layers on top of the Oblique Images hosted by the successful firm. The successful firm shall provide a mechanism for COUNTY OF IMPERIAL and participants to upload and configure their own GIS layers.

### **3.8.7 Data Hosting**

The successful firm shall prepare a recommended hosting and management platform (IaaS/Cloud) and estimate cost of storage and hosting the regional aerial imagery.

### **3.8.8 Technical Support, Documentation, and Training:**

The successful firm shall provide technical support to COUNTY OF IMPERIAL and stakeholders via telephone and video conference. The successful firm shall furnish the latest documentation for latest versions of the licensed software and shall update it during the term of the base agreement. The successful firm shall conduct training at a minimum:

- 1) Four (4) 4-hour "End-User" orientation sessions (maximum of 25 attendees per session) via on-line tools such as Go To Meeting.
- 2) One (1) 3-hour "Administrator" training to teach COUNTY OF IMPERIAL, Stakeholder and GIS support staff how to install, configure, and support the successful firm's desktop software and hosted solutions via on-line tools such as Go To Meeting.
- 3) Four (4) advanced technical training sessions (maximum of 15 attendees per session), using on-line tools such as GoToMeeting, that will last three (3) hours each.

## **SECTION 4 Pricing & Project Area Map**

### **4.1 Pricing**

COUNTY OF IMPERIAL requires firms to price their major products separately: ortho with Infrared, obliques, building outlines (as well as the data storage and hosting), and elevations (LiDAR and/other; if offered). COUNTY OF IMPERIAL will offer the bundle of products to our partners but wants the flexibility to offer separate products. COUNTY OF IMPERIAL also reserves the right to reduce the Project Area extent (i.e., square miles) for one or all Project Areas (and products) to ensure the project cost falls within budget or not award any contract resulting from the offers submitted.



LINE ITEM BUDGET

**Notice Regarding California Public Records Act**

**Section 1 - Summary**

Information submitted in response to this RFI will be subject to public disclosure pursuant to the California Public Records Act, Cal. Gov. Code section 6250 et. seq., (the "Act"). The Act provides generally that all records relating to a public agency's business are open to public inspection and copying, unless specifically exempt from public disclosure under one of several exemptions set forth in the Act. If you believe that any portion of your submittal is exempt from disclosure under the California Public Records Act, **you must:** 1). **Mark such portion "TRADE SECRET," "CONFIDENTIAL," or "PROPRIETARY," within you submittal;** 2). **Complete Section 2 below, and 3). Include this Attachment 3 in your submittal,** or your submittal will be subject to public disclosure under the Act. Submittals marked "TRADE SECRET," "CONFIDENTIAL," OR "PROPRIETARY" in their entirety will not be honored, and COUNTY OF IMPERIAL will not deny public disclosure of submittals so marked. By submitting any information with specific material marked "TRADE SECRET," "CONFIDENTIAL," or "PROPRIETARY," you represent you have a good faith belief that the material is exempt from disclosure under the Act; however, such designations will not necessarily be conclusive. You may be required to further justify in writing why such material should not, upon request, be disclosed by COUNTY OF IMPERIAL under the Act. Fee and pricing are not considered "TRADE SECRETS", "CONFIDENTIAL", or "PROPRIETARY".

If COUNTY OF IMPERIAL denies disclosure, then by submitting your information you agree to reimburse COUNTY OF IMPERIAL for, and to indemnify, defend, and hold harmless COUNTY OF IMPERIAL, its officers, fiduciaries, employees, and agents from and against any and all claims, damages, losses, liabilities, suits, judgments, fines, penalties, costs, and expenses including, without limitation, attorneys' fees, expenses and court costs of any nature whatsoever (collectively, "Claims") arising from, in connection with, or relating to COUNTY OF IMPERIAL's non-disclosure. By submitting your information, you also agree to defend, indemnify, and hold harmless COUNTY OF IMPERIAL from and against any and all Claims arising from, in connection with, or relating to COUNTY OF IMPERIAL's public disclosure of any such designated portions of your submittal if COUNTY OF IMPERIAL reasonably determines disclosure is deemed required by law, or if disclosure is ordered by a court of competent jurisdiction.

**Section 2 - Exemption Request**

Page Number of Submittal	Brief Explanation for the Exemption Under the Act and any Other Comments

Attach additional pages as necessary

Check here if firm claims no exemption

Signature: \_\_\_\_\_

Date: \_\_\_\_\_