CONSULTING AND TECHNICAL SERVICES (CATS+)

TASK ORDER REQUEST FOR PROPOSALS (TORFP)

DIGITAL HIGH-RESOLUTION AERIAL PHOTOGRAPHY

(ORTHOPHOTOGRAPHY)

FOR MARYLAND

(CATS+) TORFP
060B4400005

MARYLAND DEPARTMENT OF INFORMATION TECHNOLOGY

ISSUE DATE: OCTOBER 28, 2013

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KEY INFORMATION SUMMARY SHEET

This Consulting and Technical Services (CATS+) Task Order Request for Proposals (TORFP) is issued to obtain the services necessary to satisfy the requirements defined in Section 2 - Scope of Work. All CATS+ Master Contractors approved to perform work in the functional area under which this TORFP is released (Functional Area 4- Geographic Information Systems) are invited to submit a Task Order (TO) Proposal to this TORFP. Master Contractors choosing not to submit a TO Proposal must submit a Master Contractor Feedback form. The form is accessible via your CATS+ Master Contractor login screen and clicking on TORFP Feedback Response Form from the menu. In addition to the requirements of this TORFP, the Master Contractors are subject to all terms and conditions contained in the CATS+ RFP issued by the Maryland Department of Information Technology (DoIT) and subsequent Master Contract Project Number 060B9800035, including any amendments.

TORFP Title:	Digital High-Resolution Aerial Photography for Maryland
Functional Area:	Functional Area 4 - Geographical Information Systems
TORFP Issue Date:	October 28, 2013
Questions Due Date and Time:	11/ 7/ 2013 at 5:00 PM Local Time
Closing Date and Time:	November 18, 2013 @ 2:00 PM Local Time
TORFP Issuing Agency:	DoIT
Send Questions and Proposals to:	Michael Meinl Michael.Meinl@Maryland.Gov
TO Procurement Officer:	Michael Meinl Office Phone Number: 410-260-7179 Office FAX Number: 410.974.5615
TO Manager:	Kenneth M. (Kenny) Miller Ken.Miller@maryland.gov Office Phone Number: 410.260.4044 Office FAX Number: 410.974.5615
TO Project Number:	060B4400005
TO Type:	Fixed price
Period of Performance:	Five (5) years
MBE Goal:	5%
Small Business Reserve (SBR):	No
Primary Place of Performance:	Contractor/vendor site
TO Pre-proposal Conference:	No Pre-proposal conference

SECTION 1 - ADMINISTRATIVE INFORMATION

1.1 RESPONSIBILITY FOR TORFP AND TO AGREEMENT

- TO Procurement Officer – The TO Procurement Officer has the primary responsibility for the management of the TORFP process, for the resolution of TO Agreement scope issues, and for authorizing any changes to the TO Agreement.
- TO Manager - The TO Manager has the primary responsibility for the management of the work performed under the TO Agreement; administration functions, including issuing written directions; ensuring compliance with the terms and conditions of the CATS+ Master Contract; and, in conjunction with the selected Master Contractor, achieving on budget/on time/on target (e.g., within scope) completion of the Scope of Work.

1.2 TO AGREEMENT

Based upon an evaluation of TO Proposals, a Master Contractor will be selected to conduct the work defined in Section 2 - Scope of Work. A specific TO Agreement, the form of which is at Attachment 7, will then be entered into between the State and the selected Master Contractor, which will bind the selected Master Contractor (TO Contractor) to the contents of its TO Proposal.

1.3 TO PROPOSAL SUBMISSIONS

The TO Procurement Officer will not accept submissions after the date and exact time stated in the Key Information Summary Sheet above. The date and time of submission is determined by the date and time of arrival in the TO Procurement Officer's e-mail box.

1.4 ORAL PRESENTATIONS/INTERVIEWS

There will be no oral presentations or interviews.

1.5 MINORITY BUSINESS ENTERPRISE (MBE)

The MBE goal for this TORFP is identified in the Key Information Summary Sheet. MBE participation is strongly encouraged. A Master Contractor that responds to this TORFP shall complete, sign, and submit all required MBE documentation (Attachment 6 - Forms D-1 and D-2) at the time of TO Proposal submission. **Failure of the Master Contractor to complete, sign, and submit all required MBE documentation at the time it submits the TO Proposal will result in the State's rejection of the Master Contractor's TO Proposal.**

1.6 QUESTIONS

All questions must be submitted via email to the Procurement Officer no later than the date and time indicated in the Key Information Summary Sheet. Answers applicable to all Master Contractors will be distributed to all Master Contractors who are known to have received a copy of the TORFP.

Answers can be considered final and binding only when they have been answered in writing by the State.

1.7 CONFLICT OF INTEREST

The TO Contractor awarded the TO Agreement shall provide IT technical and/or consulting services for State agencies or component programs with those agencies, and must do so impartially and without any conflicts of interest. Each Offeror shall complete and include with its TO Proposal a Conflict of Interest Affidavit in the form included as Attachment 8 to this TORFP. If the TO Procurement Officer makes a

determination that facts or circumstances exist that give rise to or could in the future give rise to a conflict of interest within the meaning of COMAR 21.05.08.08A, the TO Procurement Officer may reject a Master Contractor's TO Proposal under COMAR 21.06.02.03B.

Master Contractors should be aware that the State Ethics Law, State Government Article, §15-508, might limit the selected Master Contractor's ability to participate in future related procurements, depending upon specific circumstances.

1.8 NON-DISCLOSURE AGREEMENT

THIS SECTION NOT APPLICABLE TO THIS TORFP.

1.9 LIMITATION OF LIABILITY CEILING

Pursuant to Section 27 (C) of the CATS+ Master Contract, the limitation of liability per claim under this TORFP shall not exceed the total TO Agreement amount.

1.10 CONTRACT MANAGEMENT OVERSIGHT ACTIVITIES

DoIT is responsible for contract management oversight on the CATS+ master contract. As part of that oversight, DoIT has implemented a process for self-reporting contract management activities of CATS+ task orders (TO). This process shall typically apply to active TOs for operations and maintenance services valued at $1 million or greater, but all CATS+ TOs are subject to review.

Attachment 12 is a sample of the TO Contractor Self-Reporting Checklist. DoIT will send initial checklists out to applicable TO Contractors approximately three months after the award date for a TO. The TO Contractor shall complete and return the checklist as instructed on the checklist. Subsequently, at six month intervals from the due date on the initial checklist, the TO Contractor shall update and resend the checklist to DoIT.

1.11 OBLIGATIONS AND RESPONSIBILITIES OF FIRMS RESPONDING TO THE TORFP

By submitting a TO Proposal, the Master Contractor will be held accountable for having informed itself as to the conditions under which the work will be accomplished, the contents of all applicable proposal documents and the provisions of all laws, ordinances, regulations, wage rates, and labor conditions prevailing at the work site. Any failure, omission, or neglect to so inform itself of such items will not relieve the TO Contractor of its obligation to successfully execute and perform completely the work within the time allocated in the subcontract.

1.12 IRANIAN NON-INVESTMENT

A proposal submitted by an Offeror shall be accompanied by a completed Certification Regarding Investments in Iran. A copy of this Certification is included as Attachment 14 of this TORFP.

1.13 CHANGE ORDERS

If the TO Contractor is required to perform work beyond the scope of Section 2 of this TORFP, or there is a work reduction due to unforeseen scope changes, a TO Change Order will be initiated. The TO Contractor and TO Manager shall negotiate a mutually acceptable price modification based on the TO Contractor's proposed rates in the Master Contract and scope of the work change. No scope of work changes shall be performed until a change order is approved by DoIT and executed by the TO Procurement Officer.

1.14 LIVING WAGE AFFIDAVIT OF AGREEMENT

The Master Contractor shall abide by the Living Wage requirements under Title 18, State Finance and Procurement Article, Annotated Code of Maryland and the regulations proposed by the Commissioner of Labor and Industry.

TO Proposals shall be accompanied by a completed Living Wage Affidavit of Agreement. A copy of this Affidavit is included in Attachment 13.

1.15 TO PRE-PROPOSAL CONFERENCE

A Pre-proposal conference will not be held for this TORFP.

1.16 TRAVEL REIMBURSEMENT

Expenses for travel will not be reimbursed.

1.17 ABBREVIATIONS AND DEFINITIONS

ASPRS	- American Society of Photogrammetry and Remote Sensing
CAD	- Computer Aided Dispatch
CCD	- Charged coupled device (digital camera sensor))
DEM	- Digital Elevation Data
GeoTIFF	- Allows georeferencing information to be embedded within a TIFF file
GIS	- Geographic Information Systems
LiDAR	- Light detection and ranging (laser based sensor for collection elevation data)
Near IR	- Uses the near-infrared region of the electromagnetic spectrum
QA/QC	- Quality assurance and quality control
RMSE	- Root Mean Square Error
TIFF	- Tagged Imager File Format
Offeror	- Master Contractor who submits a TO Proposal in response to this TORFP

1.18 WORKS FOR HIRE

The TO Contractor agrees that at all times during the term of the TO Contract and thereafter, the works created and services performed under the TO Contract Contract shall be “works made for hire” as that term is interpreted under U.S. copyright law. To the extent that any products created under the TO Contract are not determined to be works for hire for the Department, the TO Contractor hereby relinquishes, transfers, and assigns to the State all of its rights, title, and interest (including all intellectual property rights) to all such products created under the TO Contract, and shall cooperate with the State in effectuating and registering any necessary assignments.

The TO Contractor shall not affix any restrictive markings upon any data and if such markings are affixed, the Department shall have the right at any time to modify, remove, obliterate, or ignore such warnings.

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SECTION 2 - SCOPE OF WORK

2.1 PURPOSE

Maryland Department of Information Technology, Geographic Information Officer is issuing this CATS+ TORFP to obtain digital, high-resolution aerial imagery for Maryland suitable for use in 9-1-1 call taking systems and Computer Aided Dispatch (CAD) systems located in Emergency 911 centers and in Geographic Information Systems (GIS). The imagery will be orthorectified and made map accurate according to American Society of Photogrammetry and Remote Sensing (ASPRS) map accuracy standards. Two additional tasks will be performed: 1) project management of the imagery project from pre-planning, data collection, processing, quality assurance testing to delivery and status reporting and 2) independent quality assurance testing of the product as submitted to the TO Manager. All three functions will be handled through this TORFP.

The primary intent for the 2014 project is to collect new aerial photography and to develop new statewide digital orthophotography for the 14 counties and Baltimore City last flown in 2011. The State of Maryland intends to complete future statewide orthophotography programs on a regular (3) year cycle. This procurement includes an option for the State to extend the contract to include one additional update cycle for imagery of the entire State (including the Eastern Shore counties). The State or individual counties may also contract for various buy-up options, described below as part of this procurement.

Timetable

An overall project timetable is provided below.

Milestone	Date
Offeror Selection Date	November 2013
Approval by Emergency Systems Numbers Board	November - December, 2013
Contract and Notice to Proceed / Approval	January 2013
Flight / Control Plans Submitted	January 2013
Flight	February 13-April 13 (weather dependent)
Repeat Flight/Control Plans (2014-2017)	January
Flight (2014-2017)	February 13-April 13 (weather dependent)

2.2 OVERVIEW OF REQUIRED SERVICES

There are three (3) primary intents for the 2014 project. They are:

1. Provide a new statewide digital orthophoto base map accurate to the ASPRS Class I Standards for 1”=200’ with a 0.5’ ground pixel resolution. The product shall be 4-band (R, G, B, NIR) and delivered in accordance with the requirements outlined herein. This task includes providing an elevation data set that supports the development of the orthoimagery.

2. Provide project/program management and reporting services for all project phases.
3. Perform independent QA/QC services to ensure high quality data is received in the timely manner.

The Offeror shall propose the recommended solution. Alternative or optional solutions, in addition to the recommended solution are encouraged.

The state has offered local partners the following buy-up option for the orthophoto products:

1. Improve the resolution of the final digital orthophotography. This buy-up option would change the map scale from 1"=200' to 1"=100' and would change the pixel resolution from 0.5' to 0.25'.
2. Provide adjustments in the aerial photography mission and resultant orthophoto production processes to build a near true ortho product over locally designated areas. This will require an adjustment in both forward overlap and sidelap and may also require "spot shots" to be captured over specified structures (buildings and bridges). This would be done for areas no less than 1 square miles in size.

In addition to the orthophoto buy up option, there are several supplemental products for which pricing is requested . These include

1. LiDAR
2. Oblique Imagery
3. Planimetric Mapping
4. Land Cover/Land Use Mapping

More detailed information about the derivative buy ups is described as part of this TORFP. There is no commitment to procure any of these additional services and the selection of aTO Contractor will be based on the technical and cost proposal submitted for the orthoimagery products per Section 4 of this TORFP.

The USGS will be participating as a partner in this program and will be contributing funding to support the NGA 133 Urban Areas for Domestic Preparedness Program. Their support will encompass the Baltimore and Washington, DC Urban Areas.

2.3 PROJECT AREA

The initial (2014) project encompasses the region west of the Chesapeake Bay and covers approximately 6,449 square miles of land area (see table of land area by county below). The actual project area to be captured will be larger to take into account water and buffer areas. A buffer of 1000 feet shall be provided. Note that the Maryland border extends to the Virginia shoreline of the Potomac River. The buffer shall therefore extend 1000' beyond the Virginia shoreline. The border along the Chesapeake Bay shall be buffered beyond the shoreline a minimum distance of 2,500 feet. Full tiles beyond the defined project area as defined by the State <u>are not required</u> for orthophotography or elevation data. White pixels shall be provided to fill out tiles. The overlap distances are required to ensure sufficient imagery and elevation data exists so as to complete the entire project boundary without any concerns about quality or accuracy fall-off at the boundary. Note that inland waterways (Patapsco River, Severn River, Patuxent River, Back River, South River, and other inland waterways) shall be covered in their entirety. Also note that the entire span of the Chesapeake Bay Bridge (US 50), Susquehanna (I-95), Potomac River Bridge (US 301), Francis Scott Key (695) Bridge and the new Woodrow Wilson Bridge (I-495) shall be captured. The contractor shall ensure that full coverage for both shorelines for the Potomac and Susquehanna Rivers is obtained.

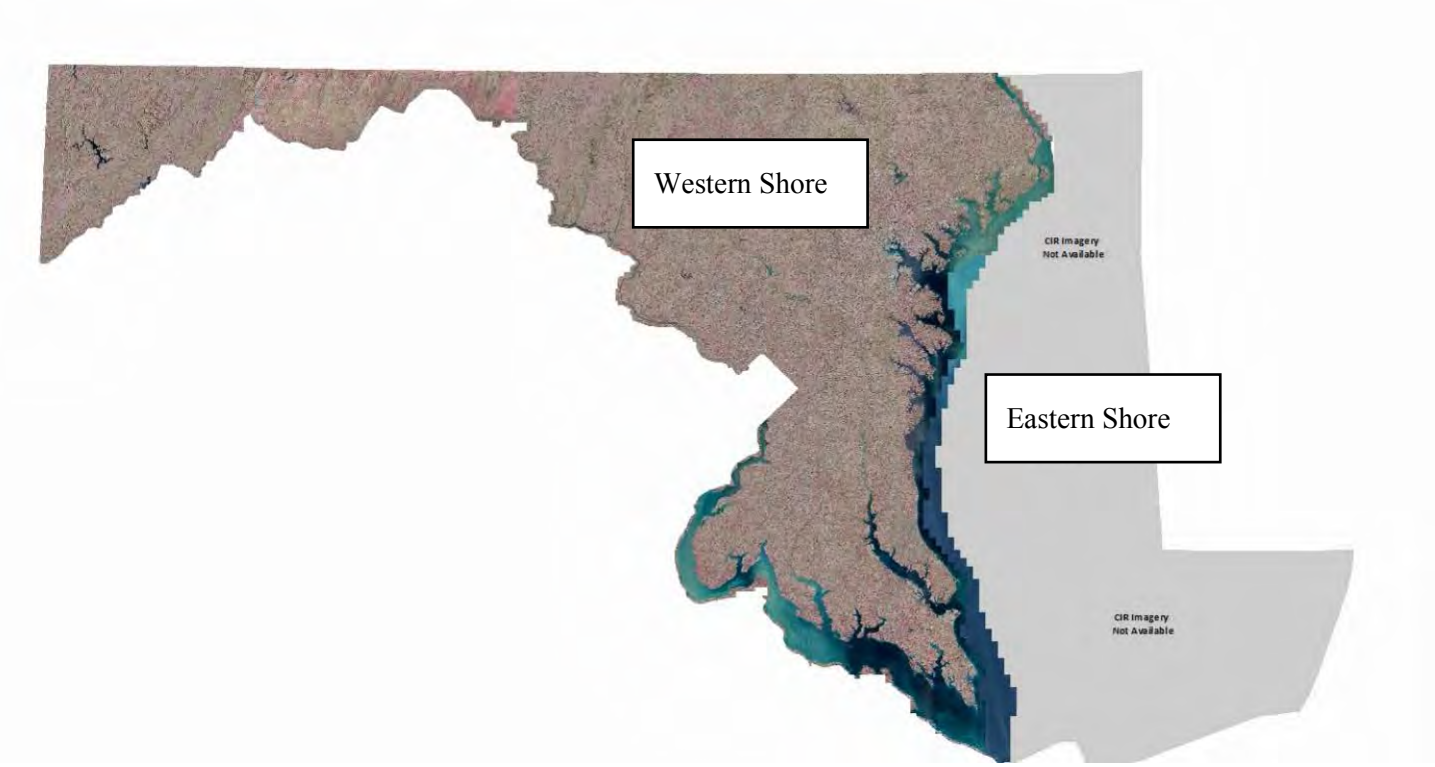
Full coverage shall also be for Pooles Island (Harford County), Hart-Miller Pleasure Island State Park (Baltimore County), and Gibson Island (Anne Arundel County). It is understood that control for these island mapping efforts may rely exclusively on the airborne GPS and IMU data.

See the MD iMAP map service for the extent of the 2014 project area. Shapefiles are also provided.

http://www.mdimap.us/ArcGIS/rest/services/ImageryBaseMapsEarthCover/MD.State.6InchCIRImagery/MapServer?f=jsapi

Area of Maryland to be Flown

West of the Chesapeake Bay (Western Shore)
East of the Chesapeake Bay (Eastern Shore)



Land Area by County - for Estimating Costs

County	Sq. Miles (land area)	Pop.
Eastern Shore		
Caroline	320.1	29,772
Cecil	348.1	99,926
Dorchester	557.5	31,998
Kent	279.4	20,151
Queen Anne's	372.2	47,091
Somerset	327.2	26,119
Talbot	269.1	36,215
Wicomico	377.2	94,046
Worcester	473.2	49,274

TOTAL	**3,324**	**434,592**
Western Shore		
Anne Arundel	415.9	512,790
Baltimore City	80.0	631,366
Baltimore	598.6	785,618
Calvert	215.2	88,698
Carroll	449.1	169,353
Cecil	348.1	99,926
Charles	461.0	140,764
Frederick	662.9	225,721
Garrett	648.0	29,698
Harford	440.4	240,351
Howard	252.0	274,995
Montgomery	495.5	950,680
Prince George's	485.4	820,852
St. Mary's	361.3	101,578
Washington	458.1	145,384
TOTAL	**6,372**	**5,217,774**
TOTAL	**9,512**	**5,652,366**

2.3 SCOPE OF WORK OVERVIEW

The State's desire is to have a single contract for the imagery program, and to have an independent QA/QC process built into this program. The QA/QC services may be provided by the TO Contractor or by a subcontractor to the TO Contractor The State reserves the right to award a separate contract for independent QA/QC services in addition to those provided by the TO Contractor as part of this TO Contract. The State also will establish an internal QC team and will provide an opportunity for its local partners to review the data products provided.

The mandatory Scope of Work ("Work") for this project will include the following services:

- Multi-spectral Aerial Photography Acquisition using either a linear or area array CCD-based digital sensor
- Image Processing for both Color and Near IR Raw TIFF Images
- Survey Control
- Aerial Triangulation
- Development of a DEM to support orthorectification *(Note: The DEM must be able to support orthorectification and is not required to support contour modeling or other DTM applications within the State).* DEM development shall be based on State provided LiDAR. New DEM collection or USGS NED data shall be used to supplement State provided LiDAR as needed.
- Production of 1"=200' Digital Orthophotography in both Color and Near IR at a 0.5' Ground Pixel Resolution that meets or exceeds the ASPRS Class I Accuracy Standards for 1"=200' scale mapping.
- Quality Assurance and Quality Control of all deliverable products
- Development of a Web-based QA/QC application for stakeholder (State and County) data review

- FGDC Compliant metadata
- Project Management including:
    - Preflight Initiation Meeting
    - Pilot Review Meeting
    - Production Meetings (as needed)
    - Weekly Progress Reporting
    - Weekly Coordination Teleconferences
    - Development and maintenance of a project management website

The specifics for each work area plus the required deliverables are outlined throughout this document.

As an optional cost the State is also interested in obtaining a cost estimate for full coverage to the political boundary for each of the counties to be flown. This would include significant "water only" tiles in the Chesapeake Bay. This full coverage area beyond the required areas described above could be flown at a higher altitude (up to 20,000' AMT) to provide continuity of imagery. This area does not need to be flown in "leaf off" conditions.

2.4 REQUESTING AGENCY BACKGROUND

The Maryland Department of Information Technology, Geographic Information Officer is sponsoring this TORFP on behalf of the federal, state, local governments who use these digital data for many purposes, especially for use in Computer Aided Dispatch (CAD) systems located in Emergency 911 centers. These data will be available to the public for use in many applications. The TO Manager will be relying on federal, state and local government agencies to assist in TORFP, project oversight and inspection of deliverables.

2.5 ROLES AND RESPONSIBILITIES

Define personnel roles and responsibilities under the TO.

- TO Manager – State Geographic Information Officer (GIO) will be responsible for project oversight at the state level. See Section 1.1.
- TO Contractor – The CATS+ Master Contractor awarded the TO Agreement. The TO Contractor shall provide human resources as necessary to perform the services described in this TORFP Scope of Work The TO Contractor will be required to meet fully the terms, conditions and requirements of the TO.
- TO Procurement Officer – assigned at DoIT to supervise this procurement (See Section 1.1).
- TO Support Personnel – Any resource provided by the TO Contractor in support of this TORFP over the course of the TORFP period of performance.

2.6 REQUIREMENTS

There are three functional areas that this TORFP is requesting related to collecting, processing and delivering aerial imagery and related optional products:

1. Project Management
2. Aerial Imagery Collection Processing and Delivery
3. Quality Assurance and Quality Control

2.6.1 Project Management

The TO Contractor shall assign an experienced project manager to the project. The project manager shall work with the State's TO Manager to ensure the successful implementation and completion of the project.

The TO Contractor shall follow the Project Management Institute (PMI) methodology for managing projects. The State's expectations for project management include:

- Assignment of experienced project manager (relative to the defined task)
- Attendance at required project meetings
- Weekly status reports and communication
- Managing and updating of project schedule and project web site
- Validation of project deliverables for completeness, accuracy and timeliness
- Proactive identification of any issues effecting schedule, delays and/or quality
- Responsive to client emails and phone calls within one (1) business day
- Project management experience of at least three years
- Successful project management experience on projects of similar scope (orthophotography, LiDAR, etc) and size (in square miles)
- Experience working with multiple prime and sub-contractors on similar projects.

The project manager shall ensure that all task orders are completed on-time, within budget and that a quality product is delivered as defined in the quality control section of this RFP (Section 2.6.13). Changes of project manager resource after selection must be approved by the State.

2.6.2 Aerial Imagery Collection, Processing and Delivery

2.6.2.1 Project Coordinate System

All existing data and any new data produced shall be on the Maryland State Plane Coordinate System in the NAD83 Datum using the (2007) High Accuracy Reference Network (HARN) Adjustment. The Vertical Datum will be NAVD88. The ellipsoid shall be GRS80. Deliverables will be in U.S. feet. Georeferencing files (e.g. tfw, sdw, jwg) will be provided in feet and meters for all deliverables. The meters based deliveries involve a conversion of 0.5'=.1524 meters.

2.6.2.2 Accuracy Standards

All products produced for this project shall meet or exceed the ASPRS Class I Accuracy Standards for 1"=200' maps. The table below interprets that requirement in terms of RMSE (Root Mean Square Error), CE90 (Circular Error at the 90% Confidence Level), $RMSE_r$ (Square Root of $RMSE_x$ + $RMSE_y$) and Accuracy (horizontal radial accuracy at 95% Confidence Level).

Map Scale	$RMSE_{xy}$	CE90	$RMSE_r$	$Accuracy_r$
1"=200'	2.000'	4.292'	2.828'	4.895'

2.6.2.3 Buy-Up Accuracy Standards

A local jurisdiction that has elected to "buy-up" to an improved accuracy will require an improved level of accuracy to be obtained for its localized adjustment.

Map Scale	$RMSE_{xy}$	CE90	$RMSE_r$	$Accuracy_r$
1"=100'	1.000'	2.146'	1.414'	2.448'

The TO Contractor'sA/QC team shall perform a quantitative analysis of the data and shall report the final $RMSE_r$ and Accuracy errors. An independent evaluation of the results may also be performed by the State.

2.6.2.4 Ground Control

Offerors shall propose their approach for controlling the orthophotography including how, if applicable, existing control will be included. Each offeror should outline the number of control points required and should show on the flight plan map the preliminary locations of the required control points. A minimum of 10 control points per county is required. If 10 points exceed the requirements for achieving the required accuracy of the orthophotography, the additional points should be used for validation purposes. The offeror shall be responsible for establishing ground control of sufficient density and accuracy to meet accuracy requirements of the deliverable orthophotography at the resolutions required. Existing control used for the 2011 Western Shore imagery and the 2013 Eastern shore imagery will be made available. Previously used control involved use of photo-identifiable points.

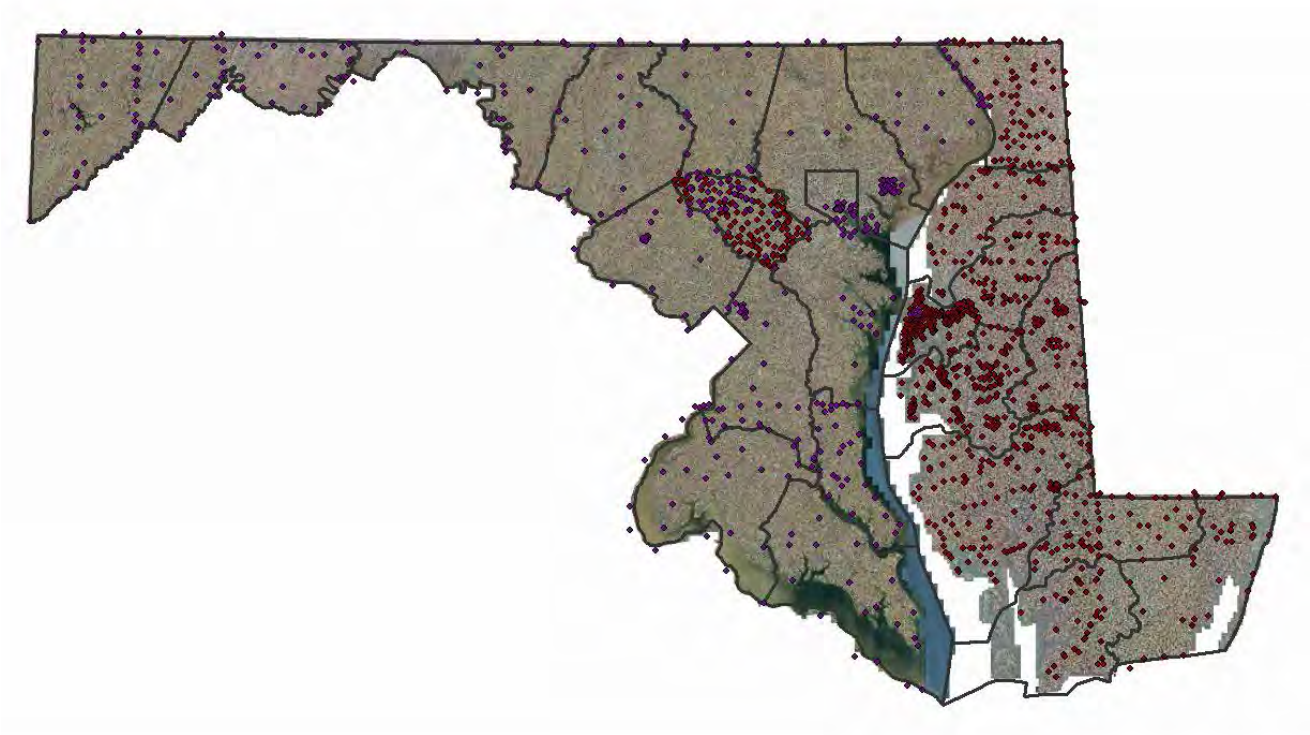
The State's assumption is that the existing control will comprise the majority of the required control and minimal new control will be needed. The map below shows the density and location of control for the 2011 Western Shore and the 2013 Eastern Shore projects.

The control report shall contain the following items:

- Number of control points surveyed and corresponding coordinates, elevation, point description, and datums used
- Description of the procedures followed and equipment used
- Accuracy standard for the control
- Surveyor in Charge with license certification

The report shall be provided in PDF format and the control data shall be provided in shapefile format.

Density and Location of Control Points Used in Previous Projects



Any new ground control established for this project must be tied to the Maryland HARN and must be established by a licensed surveyor in the State of Maryland. All ground control points must be documented as such so that they are easily relocated by other surveyors throughout the duration of the project.

2.6.2.5 Aerial Camera

The Offeror is required to use a large format area or linear array based digital sensor designed specifically for large-scale photogrammetric mapping. Digital sensors proposed shall be recognized by the USGS as capable of providing image data to support civil government mapping and orthophotography product development.

http://calval.cr.usgs.gov/manufacturers_certification.php

Camera calibration reports for the specific sensors proposed for this project shall be provided as a digital file(s) with each respondent's proposal.

The camera must capture simultaneous multi-spectral (RGB and NIR) information. The camera shall utilize Forward Motion Compensation and Airborne GPS/INS system and must also be properly installed on a Gyro-Stabilized Mount.

The digital aerial images shall be clear and sharp in detail and of high radiometric quality. The camera shall capture the images in an uncompressed "lossless" image format. The images shall also be free from image blurs, image artifacts, "cold" or "hot" pixels, color distortion, color balance or tonal problems, or any other type of digital blemish.

If multiple sensor platforms are proposed it must be specifically detailed and advantages associated with a multi-sensor approach should be described. For those cameras that now have multiple versions in the marketplace, it is required that compatible sensors be utilized for the entire mission to ensure that all interim and final products are the same and meet the requirements outlined herein. If an Offeror proposes multiple generations of the same sensor, the Offeror shall clearly address compatibility issues and how those will be overcome in its technical production processes. This is especially true if subsequent iterations allow for a higher flying height or larger image footprint.

2.6.2.6 Flight Specifications

The flying height for this project should be chosen in accordance with the camera manufacturer's recommended flying height to produce digital orthophotography to the accuracy standards noted previously. Offeror's proposal must contain a flight plan map with the chosen altitude for flight clearly labeled. The flight plan map should also, at a minimum, include the number of flight lines, number of exposures and number of flight line miles.

Offeror shall clearly state its compliance with these items. The following additional specifications are non-negotiable:

2.6.2.7 Re-Flights

Offeror must correct at no additional fee aerial imagery that does not meet defined specifications. All re-flights must be centered on the plotted flight lines and must be taken with the same camera system. If for any reason the Offeror fails to acquire the entire area, re-flights are required to complete full counties. Partial county deliverables split between multiple acquisition seasons is not acceptable.

2.6.2.8 Flight Restrictions

Offerors should be aware of potential flight restrictions in and around Maryland. For past projects, the areas that had the greatest restrictions included the following:

- Washington D.C. / lower Montgomery County Airspace
- Aberdeen Proving Grounds in Harford County
- Camp David and Fort Detrick in Frederick County
- BWI Airport
- Patuxent Naval Air Station

A detailed list of all restricted areas in and around the project area will be identified and discussed with the TO Contractor at the Pre-flight initiation meeting. The State will work diligently to provide the necessary demarcations and Point of Contact (POC) information to the TO Contractor to ensure restrictions are minimized. In addition, federal contacts at the National Geospatial Agency (NGA) are willing to help with contacting base commanders regarding the DoD support for this project. In its TO Proposal, each Offeror must address the information and support that will be needed to obtain the appropriate flight clearances. Access to these areas will ultimately be the responsibility of the TO Contractor.

For Aberdeen Proving Grounds the TO Contractor should be prepared to employ special data handling restrictions for the imagery and should plan on extra coordination and pickup of APG personnel to support data collection.

2.6.2.9 Optional Near True Ortho and/or Increased Accuracy Resolution Buy-ups

Some local jurisdictions have business requirements that necessitate the acquisition of near true orthophoto imagery in specifically identified portions of their locality. Several counties may also consider countywide acquisition of near true orthos to support in-house updates of planimetric features (specifically buildings and roads). For each of these project options, TO Contractor will be required to adjust the forward overlap from 60% to 80% (not applicable for linear array based digital sensors) and to adjust the sidelap from 30% to 60%. However, each agency may elect for additional "spot shots" or mini-strips to be taken over buildings that have traditionally yielded less than desirable results using the adjusted forward overlap and sidelap approach. Alternative methods of producing near true orthos (such as building modeling) will also be considered.

Several areas will also require increased resolution/accuracy. Currently improved accuracy/resolution buy-ups (100'/0.25' GSD) are planned for:

- BWI Airport
- Martin State Airport
- Seagirt/Dundalk Marine Terminals
- North Locust Point/South Locust Point/Masonville/Fairfield Marine Terminals
- Sparrows Point
- Cox Creek
- Curtis Bay

Other areas may be added to this list depending upon the cost.

2.6.2.10 Aircraft Commitments

The state requires that this project be executed with a multiple sensors dedicated to aerial photography acquisition. Each Offeror should clearly state its plan for acquisition to ensure the following objectives are met:

1. All aerial photography is secured within the requirements outlined in this TORFP
2. All aerial photography is secured within a single flight season
3. A **minimum** of 2 aircraft are committed to be on-site at the beginning of the flying season.

Aircraft information (tail number) data shall be provided prior to initiating flying so that the State can confirm and monitor aircraft assets using software such as Flight Aware or equivalent.

2.6.2.11 Image Post-Processing

Image post-processing shall be performed in accordance with manufacturer's specifications. The TO Contractor will be required to provide samples to the State for review prior to processing each production block. The State will review the samples and make recommendations on any changes, if necessary. Once the changes have been made, the samples will be re-submitted for approval. The approved samples shall provide a baseline for post-processing the remaining imagery.

The final processed RGB and NIR TIFF Images are required deliverables to the State. The TO Contractor is required to deliver this data on a hard drive(s) that will become the property of the State.

Georeferencing information for the processed (unrectified) imagery (tfw files) shall be provided (in U.S. feet only).

A QA/QC report verifying the TO Contractor Imagery QC process for the imagery shall be provided with each processed image delivery.

Imagery will be reviewed by the State and/or its independent QA/QC contractor. The TO Contractor will not be authorized to begin digital orthophoto production until the post-processed images have been thoroughly catalogued, reviewed and approved by the State.

2.6.2.12 Aerial Triangulation (AT)

Aerial triangulation must be used to densify the control solution. Direct geo-referencing is not allowed as a substitute for a fully adjusted AT solution. The TO Contractor must detail its procedures for performing aerial triangulation including the QA/QC steps employed during this process.

It is recognized that AT blocks will not correspond to counties. The TO Contractor as part of the Project Work plan shall identify AT blocks to be established and the criteria for their establishment.

The final aerial triangulation report and digital solution will be delivered to the State for thorough review and analysis. The State will work with the TO Contractor to define a consistent format for the deliverable AT solutions.

The State and/or its independent QA/QC contractor will review the AT reports that are submitted by the TO Contractor and certify that the results support the accuracy standards that are specified. The AT reports shall be signed by a Certified Photogrammetrist ensuring compliance.

2.6.2.13 Digital Elevation Model (DEM)

The State will provide LIDAR bare earth data to be used for orthorectification. Most (but not all) of the data for the State is than 6 years old. Data can be provided as 1 meter bare earth DEM products. LAS files are available for many of the more recent datasets if needed. Although breaklines may be available for some counties it should be assumed they will not be provided. LiDAR was generally acquired to support 2' contours for FEMA floodplain mapping purposes.

Allegany	(2012)	Howard	(2004, 2011)
Anne Arundel	(2011)	Kent	(2004)
Baltimore	(2008)	Montgomery	(2008, Fall 2013 scheduled)
Baltimore City	(2008)		
Calvert	(2003, 2011)	Prince George's	(2008, Fall 2013 scheduled)
Carroll	(2006) included in NED	Queen Anne's	(2004, 2013)
Caroline	(2004, Fall 2013 scheduled)	Somerset	(2004, 2012)
Cecil	(2004)	St. Mary's	(2004, Fall 2013 scheduled)
Charles	(2004, Fall 2013 scheduled)	Talbot	(2004)
Dorchester	(2004, Fall 2013 scheduled)	Washington	(2012)
		Wicomico	(2004, 2012)
Frederick	(2012)	Worcester	(2011)
Garrett	(2005)		

Note that six counties are to be flown by USGS in the Fall of 2013 and it is expected the data will be available in early Spring 2014. The Fall 2013 will be flown to USGS Quality Level 2 specifications.

Table 1. Quality Levels for LiDAR Horizontal Resolution and Vertical Accuracy					
Elevation Quality Levels (QL)	Source	Horizontal Resolution Terms		Vertical Accuracy Terms	
		Point Density	Nominal Pulse Spacing (NPS)	Vertical RMSEz	Equivalent Contour Accuracy
QL 1	LiDAR	8 pts/m2	0.35 m	9.25 cm	1-ft
QL 2	LiDAR	2 pts/m2	0.7 m	9.25 cm	1-ft
QL 3	LiDAR	1 – 0.25 pts/m2	1 – 2 m	≤18.5 cm	2-ft

If full DEM coverage does not exist for the area requiring orthorectification (e.g., areas outside the County boundary and within the mapping limit area) then USGS National Elevation Dataset (NED) data may be approved for use by the State. The TO Contractor should indicate if a lower level of accuracy should be assumed for these perimeter "fill in areas". These areas are expected to be very small and would cover the areas outside the state boundary but within the overall mapping limits.

Much of the existing LiDAR data is currently available for review as an image service from the Eastern Shore Regional GIS Cooperative. Although the latest data may not be available for all Counties it is available for most counties and will be available for all counties in early January 2014. Please see the following site for reference.

http://www.esrgc.org/mapservices/

The Ortho DEM used for this project will be a deliverable. Although other options will be considered for DEM development (e.g., use of propriety DEMs, recompilation, new LIDAR), it is our intent that the existing LIDAR be used as the primary source for orthorectification. Any break line data produced must also be provided as part of the DEM deliverable**.**

The state does expect that some spot updates may be necessary to support orthophoto production in 2014. It is expected that any surface updates will be made only to the requirements necessary to support the orthorectification process. The State does not require the updates be consistent with that of a DTM capable of supporting contour modeling or other engineering applications.

2.6.2.14 Digital Orthophotography

This Section describes the specifications for the production of the digital orthophotography. TO Proposals shall clearly state and explain the compliance, or non-compliance with these requirements.

Tiles will be provided using a 4000' by 6000' tile layout. The previous tile grid has been provided as part of this proposal and should be used again. Note this tile layout reflects the overall grid and not the mapping limits.

Partial tiles or "no data areas" are acceptable at the State mapping boundary as earlier described.

4-Band Resultant Imagery

The primary product requested by the State is a statewide set of 4-band digital orthophotos with a 0.5' ground pixel resolution. All digital orthophotography shall be produced in accordance with the accuracy requirements outlined herewith in. All buy-ups for a 0.25' ground pixel resolution are also required to be a stacked 4-band product.

All image products are required to be 100% compliant with the size, position and naming conventions of the tiling schema that is developed for this project.

The State requires that the spatial reference for each GeoTIFF be established to allow for easy re-projection in ArcGIS.

Compressed Imagery

Once the tiled image products have been accepted, the TO Contractor will be required to produce a complete set of 3 band MrSID and 4 band JPEG files for each tile. Georeferencing files shall be provided in meters and feet for each of these deliverables. Compressed tiled data shall be produced at a 20:1 ratio unless otherwise authorized.

Countywide image mosaics shall also be produced in MrSID and ECW formats. These mosaics shall be produced at a 25:1 ratio. It is expected that a single file will be produced for each County however some Counties may elect to have their mosaics divided into 2 or 4 quadrants. Mosaic requirements will be finalized after the pilot project is complete.

2.6.2.15 Metadata and Reports

Metadata compliant with the Federal Geographic Data Committee's (FGDC) Content Standard for Digital Geospatial Metadata is required in extensible markup language (.xml) format. Metadata should be created on a project level for each product, including the imagery, flight data, AT, DEM and other databases used and delivered to the State. The state does not require tile level metadata to be developed. Metadata from the 2011 and 2013 projects can be provided as templates for use on this project.

Metadata shall include as a minimum the following sections;

- Identification Information
- Data quality information (this section will be updated by the State and/or its independent QA/QC contractor after the quantitative assessment) and must include all process steps.
- Spatial Data Organization Information
- Spatial Reference Information
- Entity and Attribute Information
- Metadata Reference Information

Metadata may also be supplemented with projects reports where the report conveys additional information not suitable for metadata.

2.6.2.16 Media and Data Ownership

All products will be delivered on external hard drives and will become the property of the State. All media and data collected under this contract shall be the sole property and can be freely distributed by the State and its Federal and local government partners. All the delivered data is also to be unlicensed, and releasable to the public without cost or use restrictions. Until final products are received and accepted the TO Contractor shall not sell or distribute any data produced as part of this project without approval from the State.

Media labeling shall include:

- Project Name
- Date of Delivery

- Product Delivered (imagery, DEM, etc.)
- File format

2.6.2.17 Technical Assistance

As part of the fixed price proposal, the TO Contractor shall be prepared to provide up to 150 hours of ad-hoc technical assistance for Orthoimagery and Related Products (Attachment 1). The TO Contractor shall be prepared to provide up to 150 hours annually of ad-hoc technical assistance. This will be performed on a task order basis for specifically defined tasks related to this project. It can be used for supplemental data production or processing activities and/or activities related to integration/loading of data into the MDiMAP, specialized mosaics, additional hard drive distribution. It may also be used for other technical assistance tasks at the State's discretion. The TO Contractor and the State will mutually agree on the tasks to be performed and the level of effort associated with each task.

2.6.2.18 Forward Overlap

The forward overlap applied should be 60% (+/- 3% allowance for deviation). In the case of linear array scanners, this requirement does not exist. In those areas designated for Near True Orthos, the Offeror must increase the forward overlap from 60% to 80%.

2.6.2.19 Sidelap

30% sidelap should be applied except in those areas designated for Near True Orthos. In those areas, the Offeror must increase the sidelap from 30% to 60%.

2.6.2.20 Environmental Conditions

Aerial imagery should be obtained when the sky is clear (cloud cover will not be tolerated); the ground is free from snow, haze, smoke, dust, and cloud shadows; and deciduous trees are sufficiently barren to permit the intended uses of the imagery. Spectral reflectance from water should be minimized and should not obscure shoreline features. The solar angle must be 30-degrees or more above the horizon at the time of exposure. Urban area flights over Baltimore City should be at a 40-degree sun angle. Allowance for 25-degree sun angles may be provided under certain conditions and is subject to State approval prior to any flight.

2.6.2.21 Crab

Crab must not exceed five-degrees between any two consecutive flights, nor more than three degrees on any one flight line. At the earliest opportunity, new imagery must be acquired to replace rejected photographs or flight lines.

2.6.2.22 Bridges and Overpasses

All bridges must be free of distortion and must be corrected to their true position in the final digital orthophoto products. To accommodate this, each Offeror can prescribe their own methodology that could include spot shots, breaklines on bridges, photo correction using photo enhancement software or some combination thereof.

2.6.3 Quality Control

The State requires each Offeror to provide a process workflow of its approach to QA/QC. Of specific interest is when each QA/QC step occurs in the production process. In addition to the process map, each Offeror should discuss its procedures with the TO Manager to ensure data conformance to the requirements outlined herewith in.

The State's desire is to have a single contract for the imagery program, and to have an independent QA/QC process built into this program. The State reserves the right to award a separate contract for independent QA/QC services in addition to those in addition to those provided by the TO Contractor as part of this TO Contract. The State and its County partners also will establish an internal QC team and will provide an opportunity for its local partners to review the data products provided.

The State requires development of a web based QA/QC tool that will allow each locality to review data for its jurisdiction as part of the process without multiple copies of the imagery needing to be distributed to its partners. These tools should enable the QA/QC reporting to be performed in a consistent manner across jurisdictions. Delivery of fixed media products will not occur until after the web based QC is complete by the State/local stakeholders. The TO Contactor will be responsible for creating the map services necessary to support the imagery review process.

2.6.3.1 One Pass QA/QC

In an effort to streamline the quality review and acceptance process, a "One-Pass" review cycle applies to this project. This review cycle is designed to alleviate the production bottleneck that can be caused with iterative cycles of product rejection to resolve minor discrepancies in the digital orthophotography. This approach is a direct result of lessons learned during the previous orthophotography.

The work flow process for the One Pass Review Cycle is as follows:

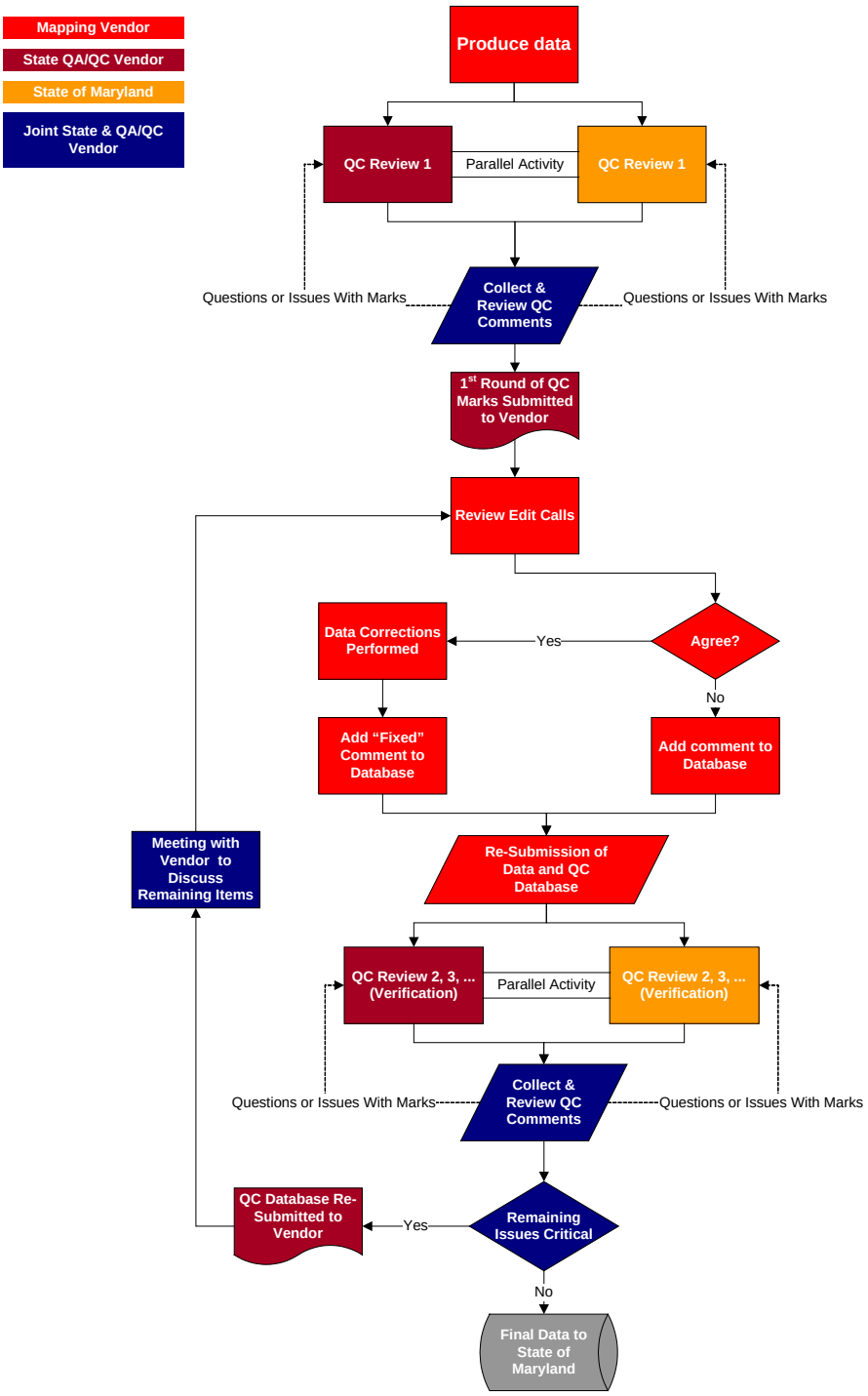
1. The State and its QA/QC team will perform a comprehensive quality evaluation of the initial data delivery from the TO Contractor. This evaluation will identify all failures, discrepancies and systematic errors as defined by the acceptance criteria.
2. The State and its QA/QC team will utilize the online QC application to perform the data assessment. The result is a single database containing pre-defined error calls that will be submitted to the TO Contractor for correction. All valid edit calls will be fixed. The state has the final authority as to whether or not a feature shall be corrected.
3. It is expected that the TO Contractor will examine each One Pass discrepancy(ies) and indicate in the database the action taken regardless of the overall % of acceptance for the data. If there are discrepancies, those will need to be reviewed by the State, TO Contractor and county representative one at a time to reach consensus. Simply marking the database with numerous calls stating "Not an Error" or something similar will not be acceptable to the State.
4. The State and its QA/QC team will perform a second review validating that the original edit calls were addressed and that no new errors have been introduced during this process.

The web based QC application shall contain at a minimum the following functionality:

- Ability to pan, zoom, navigate to tiles or areas of interest
- Ability to mark edit calls for areas or points using menu based tool for standardized error reporting
- Ability to include key reference features (e.g., seam lines, tile numbers, centerlines, tile layout) for orientation purposes
- Ability to track status or feedback regarding the user defined calls (e.g., fixed, not fixed, invalid edit)
- Ability to display RGB and NIR imagery
- Provide access through login/password accounts and shall allow multiple users to use the same account simultaneously.

The benefits to this process is the knowledge that there will be one comprehensive review of the data and the secondary (and beyond) reviews will only be to validate that errors have been corrected properly.
The one-pass review process will include comments from the respective counties that are involved in this project.

The process diagram below illustrates the One Pass review cycle.



2.7 SERVICE LEVEL AGREEMENT

Not applicable to this TORFP.

2.8 BACKUP / DISASTER RECOVERY

The TO Contractor shall be responsible for assuring that all data is retained and available for processing up to and including delivery and acceptance testing. This may include performing backups of the raw, pre-processed and delivery imagery on a regular basis. Backups may be retained at the TO Contractors discretion once the final product has been accepted in writing by the State. The Contractor shall maintain on-site storage for a backup set of final imagery products for a 5 year period commencing after final acceptance.

2.9 HARDWARE, SOFTWARE, AND MATERIALS

The TO Contractor is responsible for providing all hardware, software and materials at its own expense necessary to meet the deliverables and schedule identified in this TORFP.

2.10 DELIVERABLES

2.10.1 DELIVERABLE SUBMISSION PROCESS

Written deliverables defined as draft documents must demonstrate due diligence in meeting the scope and requirements of the associated final written deliverable. A draft written deliverable may contain limited structural errors such as poor grammar, misspellings or incorrect punctuation, but must:

- Be presented in a format appropriate for the subject matter and depth of discussion.
- Be organized in a manner that presents a logical flow of the deliverable's content.
- Present information that is relevant to the Section of the deliverable being discussed.
- Represent a significant level of completeness towards the associated final written deliverable that supports a concise final deliverable acceptance process.

Upon completion of a deliverable, the TO Contractor shall document each deliverable in final form and submit to the TO Manager for acceptance.

Upon receipt of a final deliverable, the TO Manager shall commence a review of the deliverable as required to validate the completeness and quality in meeting requirements. Upon completion of validation, the TO Manager shall issue to the TO Contractor notice of acceptance or rejection of the deliverables in an Agency Acceptance of Deliverable Form (Attachment 11). In the event of rejection, the TO Contractor shall correct the identified deficiencies or non-conformities. Subsequent project tasks may not continue until deficiencies with a deliverable are rectified and accepted by the TO Manager or the TO Manager has specifically issued, in writing, a waiver for conditional continuance of project tasks. Once the State's issues have been addressed and resolutions are accepted by the TO Manager, the TO Contractor will incorporate the resolutions into the deliverable and resubmit the deliverable for acceptance. Accepted deliverables shall be invoiced as provided in Section 2.16 hereof.

A written deliverable defined as a final document must satisfy the scope and requirements of this TORFP for that deliverable. Final written deliverables shall not contain structural errors such as poor grammar, misspellings or incorrect punctuation, and must:

A) Be presented in a format appropriate for the subject matter and depth of discussion.

B) Be organized in a manner that presents a logical flow of the deliverable's content.

C) Represent factual information reasonably expected to have been known at the time of submittal.

D) Present information that is relevant to the Section of the deliverable being discussed.

The State required deliverables are defined below. Within each task, the TO Contractor may suggest other subtasks or deliverables to improve the quality and success of the project.

Project deliverable milestones for the purpose of invoicing:

- Mobilization complete
- Imagery acquisition complete
- Aerial triangulation complete
- Pilot complete
- Production complete
- Final deliverables submitted

2.10.2 DELIVERABLE DESCRIPTIONS / ACCEPTANCE CRITERIA

All deliverables will undergo a detailed review and acceptance testing process prior to acceptance. A complete list of deliverable is described within the document and included as a summary below.

Time frames for deliverables should be proposed by Offerors in their Technical Proposals (See Section listing the deliverables below). Agencies should set overall expected time frames for completing all deliverables, e.g., "within 18 months," but should allow schedule flexibility for individual deliverables.

Project Management Deliverables

- Project Work plan
- Project Meetings and Status reporting
- Project management website using SharePoint or Comparable tools
- QA/QC web mapping application

Ground Control Deliverables

- Shapefile of Ground Control used
- Ground Control report in Word and PDF file format

Aerial Photography Deliverables

- Planned Photo Centers in Shapefile format with attributes including corresponding line and frame (or line scanner equivalent) number
- As Flown Photo Centers in Shapefile format with attributes including corresponding line and frame number that correlates to the final post-processed TIFF Images. It must also include an attribute for the date of photography, and a time stamp for acquisition to be used to verify the correct sun angle.
- Aerial Photography Mission Logs
- Final Processed TIFF Images on an external Hard Drive that will not be returned. The imagery will be georeferenced with the processed airborne GPS information.
- Final processed Airborne GPS and IMU Orientation Data

Aerial Triangulation Deliverables

- AT solution delivered in a format usable by other vendors for planimetric mapping purposes; and
- Copies of a final aerial triangulation report in PDF and Word format with associated data files as excel tables

DEM Deliverables

- DEM file used for orthorectification – by County in ArcGIS format as geodatabase

Orthophotography Deliverables

- One (1) set of countywide statewide 4-band 1”=200’ digital orthophotos with a 0.5’ ground pixel resolution in GeoTIFF format.
- One (1) set of statewide 3-band (color RGB) 1”=200’ digital orthophotos with a 0.5’ ground pixel resolution in MrSID format – 1:20 compression
- One (1) complete set of statewide 4-band (color RGB) 1”=200’ digital orthophotos with a 0.5’ ground pixel resolution in JPEG2000 format – 1:20 compression
- One County-based 3-band (color RGB) 1”=200’ digital orthophotos with a 0.5’ ground pixel resolution in MrSID format – 1:25 compression
- One County-based 3-band (color RGB) 1”=200’ digital orthophotos with a 0.5’ ground pixel resolution in ECW format – 1:25 compression
- One (1) FGDC-Compliant Metadata record for each image set produced
- One (1) FGDC-Compliant Metadata record for each data set produced

2.10.3 Quality Assurance Inspection of the Deliverables

This section provides the acceptance criteria that will be used to evaluate the final products produced for this program. These criteria will be finalized in consultation with the TO Contractor as part of the project initiation phase as identified in 2.6.13.1.

Orthophotography Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
Inventory / Spatial Domain / Metadata Criteria		
1.	Media: External Hard Drive	Media is readable, all files accessible, no files corrupted
2.	Media label	Conforms to Maryland specifications. Section 2.6.11
3.	File organization	Files written in tile sheet order
4.	File name	Conforms to required state tiling index nomenclature – Section 2.14-
5.	GeoTIFF & .tfw format	File reads in ArcGIS, ArcMap, etc.
6.	Geographic Coverage Assessment	Verify extents of GeoTIFF header and tfw file against tile index to ensure no overlap of tiles.
7.	Pixel definition	GeoTIFF reference will be the upper left corner of the upper left-most pixel World file must reference the center of the pixel located in the upper left hand corner of the tile as the point of origin.
8.	Georeferencing	World file has correct coordinates expressed to at least 2 significant digits, and correct pixel size and pixel count

9.	Datum	Maryland State Plane Coordinate System, NAD 83 HARN Adjustment
10.	Units	U.S. Survey Feet & Meters
11.	32 bit (8 per channel) 4 band stacked image	256 levels of value for each band, 0=black, 255=white
12.	Ground Resolution	0.5', or 0.25' for buy-up
13.	Sheet size	Tiles conform to tile grid
14.	Image Compression	Check GeoTIFF header for evidence of image compression (JPEG Compression, Overviews, Tiling, etc…)
15.	Metadata	Conforms to FGDC Metadata Standard- Should run through the USGS Meta Parser tool without error.
Visual Inspection Criteria		
16.	Horizontal Displacement / Mis-Alignment	Horizontal displacement along an apparent seam line or along a tile boundary must be equal to or less than 2 pixels on well-defined ground features (roads, sidewalks, curbs).
17.	Tonal quality	Check entire block for tonal balancing across and between delivery blocks as well as between deliverables with differing resolutions.
18.	Image blemishes and artifacts	Generally acceptable within these limits: If 1 pixel wide, 100 pixels in length. If 2 pixels wide, 60 pixels in length. If 3 pixels wide, 20 pixels in length. If 4 - 12 pixels wide, 12 pixels in length. Artifacts exceeding these limits may be acceptable if ground feature detail is not obscured, or if the brightness value of the pixels in the artifact is fewer than 170. Artifacts within these limits may be rejected if critical ground features are significantly impacted. Critical features shall be defined as features having County, State or National significance (i.e., Courthouses, Capitol Buildings, etc.). Clusters of artifacts that do not individually meet these criteria may be considered unacceptable if more than 12 are visible within a viewing screen at 1:1 zoom (5 or more artifacts within a 200 pixel area preferred).
19.	Image Appearance /Smears	Image contains no extreme color, tone, or contrast variations from approved sample. Smears corrected by adding mass points or break lines to DEM as necessary to

		reflect actual elevation or by image processing where appropriate. Where DEM corrections or image processing will result in reduced horizontal accuracy or misrepresentation of the location or appearance of important features (buildings, roads, etc.), the smear will remain untreated.
20.	Wavy features	99% of distinct linear ground features (such as road markings, and curbs) shall be positionally correct and should not deviate from their apparent path by more than 5 pixels measured perpendicular to the feature within any 100 pixel distance measured along the feature length. On roads, measurements should be taken from centerline of road instead of road edges, shoulder and railings.
21.	Mosaic lines	Mosaic lines through buildings and above ground transportation structures shall be avoided through the greatest extent practical. Mosaic line placement should not result in artificial clipping of features along tile boundaries or missing photo areas anywhere within the project area. As with buildings, other minor elevation structures such as pipelines, private footbridges or boardwalks, are not rectified as elevated roadways are. Distortion of these features is not grounds for rejection of the imagery. Seam lines should not be visible at the viewing scale for which the imagery is produced. Typically they should not be visible at 1.5 times the map scale. Because seam lines are run around buildings and other structures, the orientation of shadows associated with trees, poles, and buildings may fall in different directions on the imagery, or may in some cases result in multiple shadows for a feature. Seam lines will not be edited to reflect shadow orientation.

Orthophoto Horizontal Accuracy Criteria

1”=200’-scale (Standard Product)		
29.	RMSE of known ground points measured on the image *See ASPRS Class I Standards Page 8, Table 16, and NSSDA Part 3, Appendices 3-A and 3-D for explanation of formulas.*	$RMSE_x = RMSE_y = 2.000'$ and $RMSE_r = 2.828'$
30.	Absolute accuracy. $Accuracy_r$ = horizontal (radial) accuracy at 95% confidence level = $RMSE_r$ x 1.7308	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of ≤5.000’
31.	Mismatch of features along mosaic lines and	Equal to or less than 2 pixels at 95 % on well-defined features (roads, sidewalk curbs) for mosaic

	production block boundaries of equal scale	lines
1”=100’ (Buy-Up Resolution to 3” and Accuracy)		
32.	Ground resolution	0.25’ US Survey Feet
33.	RMSE of known ground points measured on the image *See ASPRS Class I Standards Page 8, Table 16, and NSSDA Part 3, Appendices 3-A and 3-D for explanation of formulas.*	$RMSE_x = RMSE_y = 1.000'$ and $RMSE_r = 1.414'$
34.	Absolute accuracy. $Accuracy_r$ = horizontal (radial) accuracy at 95% confidence level = $RMSE_r$ x 1.7308	NSSDA accuracy (20+ points) such that 95% of the points tested shall meet the criteria of ≤2.500’
35.	Mismatch of features along mosaic lines and production block boundaries of equal scale	Equal to or less than 2 pixels at 95 % on well-defined features (roads, sidewalk curbs) for mosaic lines

Digital Elevation Model QA Acceptance Criteria

	Tested Characteristic	Measure of Acceptability
36.	File organization	ESRI File Geodatabase for the entire delivery area
37.	File name	Conforms to required convention
38.	Format	ESRI File Geodatabase, all features have x, y, z values
39.	Breaklines & mass point locations	Sufficient to accurately build elevation to support ortho
41.	Continuity	No spikes or holes, no gaps of sufficient size to affect orthorectification, regardless of perspective center.
42.	Attributes	Conform to DEM standard

Aerial Triangulation Acceptance Criteria

1”=200’ (Standard Product)		
	Tested Characteristic All Scales	**Measure of Acceptability**
43.	Report Format	Conforms to required convention (to be determined with the State in pilot phase). Each block of triangulation shall have a separate report.
44.	Report Completeness	All information complete and readable

45.	Precision of Image Observations	Sigma (0) less than or equal to 5 microns is acceptable.
46.	Horizontal accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/9,000' for individual AT blocks in the X and Y direction. Higher RMSE values are subject to review.
47.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/7,500 of flying height for the 200 scale AT blocks. Higher RMSE values are subject to review.
48.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
49.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
50.	NSSDA analysis [E, N] of 40 QA points	95% within 1.73 * RMSE for that scale

1"=100' (Buy-Up Resolution to 3" and Accuracy)		
	Tested Characteristic All Scales	**Measure of Acceptability**
59.	Report Format	Conforms to required convention (to be determined with the State in pilot phase). Each block of triangulation shall have a separate report.
60.	Report Completeness	All information complete and readable
61.	Precision of Image Observations	Sigma (0) less than or equal to 5 microns is acceptable.
62.	Horizontal accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/10,000' for individual AT blocks in the X and Y direction. Higher RMSE values are subject to review.
63.	Vertical accuracy against ground control check points tested in accordance with 10+ points at NSSDA criteria	RMSE values are acceptable up to 1/9,000 of flying height for the 100 scale AT blocks. Higher RMSE values are subject to review.
64.	Accuracy against image coordinates	RMSE less than or equal to 5 microns is acceptable.
65.	Max. offsets [E, N] to any one blind QA point	3 * RMSE for that scale
66.	NSSDA analysis [E, N] of 40 QA points	95% within 1.73 * RMSE for that scale

2.11 OPTIONAL PRODUCTS

The State has an interest in receiving and technical and cost proposal information for various optional products. There is no commitment to procure any of these optional products and the costs for the optional products will not be included as part of the evaluation process. The costs and methodology described can

be used as a basis to negotiate a scope of work (for these supplemental services) under this CATS+ contract. The State (or the respective counties) also reserves the right to negotiate a scope of work with a firm other than the selected orthoimagery vendor for any or all of the optional services.

All of the options will require a startup and design/work plan phase, a pilot project, production work, independent QA/QC, and one-pass stakeholder QC prior to final product delivery.

2.11.1 Oblique Imagery (Optional)

The State has an interest in receiving and technical and cost proposal information for oblique imagery solutions. Although the acquisition of oblique imagery is not planned at this time, the State and its partnering local government agencies may be interested in procuring oblique imagery as an additional (secondary) value added product. Oblique imagery would be acquired with a digital camera system optimized for acquisition and processing of oblique imagery. It is assumed this would be a separate flight and camera system than what is used for the orthophotography. Oblique imagery would be acquired in leaf off conditions (spring or fall) on a city or County-wide basis. Pricing options for 4", 6", and 12"oblique imagery solutions should be provided. Options may also be presented for licensed and unlicensed products. Oblique imagery procured under this contract vehicle could be procured by the State or may be contracted directly by one or more of the local government agencies throughout the State.

2.11.2 LiDAR (Optional)

The State has an interest in receiving an optional cost to acquire LiDAR data. The majority of the Counties in the State have acquired new LiDAR data in the past 5 years through USGS contract vehicles or State or Local contracts. It is not expected that a significant amount of new LiDAR work will be awarded as part of this contract however we would like to be able to obtain pricing to enable this contract to be used in case there is a requirement and funds are available. It is assumed any new LIDAR would be acquired in accordance with the USGS LIDAR specifications and would involve a minimal collection area of an entire County at one time..

http://pubs.usgs.gov/tm/11b4/TM11-B4.pdf

USGS will be flying 6 Counties in the Fall of 2013 to the quality level 2 standards. It is anticipated that future Countywide LIDAR would be flown to this standard as well. Pricing information in also requested for the additional higher density data (Quality Level 1) and lower density /accuracy data (Quality Level 3) data.

Table 1. Quality Levels for LiDAR Horizontal Resolution and Vertical Accuracy

Elevation Quality Levels (QL)	Source	Horizontal Resolution Terms		Vertical Accuracy Terms	
		Point Density	Nominal Pulse Spacing (NPS)	Vertical RMSEz	Equivalent Contour Accuracy
QL 1	LiDAR	8 pts/m2	0.35 m	9.25 cm	1-ft
QL 2	LiDAR	2 pts/m2	0.7 m	9.25 cm	1-ft
QL 3	LiDAR	1 – 0.25 pts/m2	1 – 2 m	≤18.5 cm	2-ft

It is assumed that any new LiDAR would be flown in leaf off conditions. It is also assumed the contractor would review and finalize the work plan for LIDAR collection and processing for each county to be collected and the final deliverable products would be produced on a countywide basis. Independent QA/QC should be performed on the LIDAR data acquired (the QA/QC Is not to be performed by the contractor that acquired and processed the data) and the QC contractor must certify in writing that it has reviewed the data for compliance with USGS specifications. No tide coordination is required although that may be a separate add-on that is included in the final negotiated contract.

2.11.3 County based Planimetric Data (Optional)

The State has an interest in receiving an optional cost to update or produce new planimetric features. All counties in the State have some planimetric features available. Most of the existing planimetric data was produced at either 100' scale or 200' scale from photogrammetric techniques. Some Counties have performed regular updates since the data was initially compiled. Others have performed selective updates based on digitizing from orthoimagery. There is no detailed inventory of planimetric data that is available. Several Counties have recently completed or have major planimetric update projects underway. Calvert, Charles, Howard, and Anne Arundel have all done updates based on 2011 aerial photography. Montgomery County has performed selected area updates and Prince George's County is planning an update based on newly acquired 2013 photography. Harford County is also performing its own photogrammetric update. Baltimore County was last updated from 2008 photography. Baltimore City was also updated from 2008 aerial photography. Most of the eastern shore and western Maryland counties had planimetric data compiled between 2002 and 2008 as part of E911 mapping efforts.

Listed below is a summary of existing planimetric data based on best available information. It must be noted that many of the Counties do not have all of the level 1 or level 2 features listed below.

Allegany	2005/2006
Anne Arundel	2011
Baltimore	2008
Baltimore City	2008
Calvert	2011
Caroline	2003
Carroll	2006
Cecil	2006
Charles	2011
Dorchester	2006
Frederick	2005
Garrett	2005/2006
Harford	2008
Howard	2011
Kent	2005/06
Montgomery	2008-2011
Prince George's	2009
Queen Anne's	2005
Somerset	2004/05
St. Mary's	2007
Talbot	2006/2010
Washington	2005/2006
Wicomico	2006
Worcester	2006

Each of the Counties also has a unique database design. It is assumed updates or new mapping would be done on a countywide basis. It is also assumed that any planimetric mapping project would involve

development of a detailed project workplan and database design, completion of a pilot project, delivery of data in geodatabase format, and independent QA/QC services.

The Level 1 features below represent the primary impervious surface features and the Level 2 features represent secondary impervious surface features as well as some additional major reference features. Although the assumption is these features would be compiled (or updated) photogrametrically the State is also interested in semi-automated feature extraction approaches. Vendors may propose an alternative approach based on semi-automated feature extraction techniques in addition to the more standard photogrammetric approach to generate this data.

Level 1 Planimetric Features	Paved Road Polygons Unpaved Road Polygons Alleys Buildings (over 100 square feet) Major Paved Parking Areas (Over 10 spaces) Major Unpaved Parking Areas (Over 10 spaces)
Level 2 Planimetric Features	Driveways Sidewalks (public – not private walkways to residences) Minor Paved Parking Areas Paved unpaved Parking Areas Other Paved surfaces over 200 square feet Hydrography (lakes, ponds, reservoirs, streams, rivers, stormwater drainage ponds Major Transmission Towers Cross Country Transmission Lines

Depending on the final project requirements additional features may be included from the list, or features may be excluded.

Ideally any data that is over 6 years old would be replaced instead of updated.

2.11.4 Land Use / Land Cover Option

The State also has an interest in receiving an optional cost to update its existing land use data. Land use / Land cover data was last updated in 2010 based on 2007 imagery and can be found here. Information on mapping standards, classification scheme, and a web application to review the data is also available at this link.

http://planning.maryland.gov/OurWork/landuse.shtml

The LULC mapping standard currently employed by Maryland is based upon 2007 NAIP Aerial photography with a 1 meter resolution.). Maryland's LULC system includes both land use and land cover categories: the way humans use the land is land use (LU), while land cover (LC) refers to the physical

surface of the land. LULC classification evaluates features on the land within the context of the surrounding landscape. Therefore, a grassy or forested area surrounded by residential lots would be classified and mapped as low density residential type using the LULC system; whereas a similar grassy or forested parcel in a Land Cover only system (LC) would be classified grassland or forest.

There are two primary options under consideration for completing the land use updates. The first involves performing an update of the existing data using the latest NAIP imagery. The second is to perform a more comprehensive remap based on the latest 6" resolution imagery. Both approaches shall involve delivery of ArcGIS polygon based data using the current classification scheme.

Irrespective of the approach, production shall start with a preliminary analysis of a small Test Area, to establish rules use of source data. Once these rules are established, they shall be applied to two larger Pilot Areas covering about 10 square miles each and a variety of land use types. The approach to be used could involve manual interpretation of semi-automated procedures. Fully automated approaches are not expected to be acceptable.

In addition to the imagery the Maryland Department of Planning would provide its statewide parcel data point and polygon data that could be used to help identify areas of change by analyzing the assessments data associated with each parcel. MDP would also be able to provide definitions of specific queries to help support this process. High resolution (6") 4 band imagery (the 2014 imagery and the 2013 eastern shore imagery) and NAIP imagery (2013) would both be available to support this analysis.

Level 1: Update the existing statewide data using new imagery

This option would be a manual photo-interpreted update of the 2010 Maryland Land Use dataset. It would follow the same protocols as the previous updates. Existing line work would only be changed where land cover or use changed based on an interpretation of the 2011 and 2013 6' imagery. Line work that was inaccurate or incorrect in the 2007 dataset would remain inaccurate in this dataset. This product would be designed for use and display at a 1:10,000 display level. No minimum mapping unit is defined for the existing data – instead the capture rules define the area definitions.

Level 2: Produce new high resolution LU/LC map using new imagery

This option could include a manual or semi-automated interpretation of Land Use / Land Cover using the existing classification scheme. Under this approach the minimum mapping unit would be one (1) acre in size. In urban area the minimum mapping unit for forest and vegetation areas would be ¼ acre in size. All polygons would be reviewed or recompiled in accordance with the new imagery. This product would be designed for use and display at a 1:2400 display level which is consistent with the large scale imagery.

2.12 REQUIRED PROJECT POLICIES, GUIDELINES AND METHODOLOGIES

The TO Contractor shall be required to comply with all applicable laws, regulations, policies, standards and guidelines affecting information technology projects, which may be created or changed periodically. The TO Contractor shall adhere to and remain abreast of current, new, and revised laws, regulations, policies, standards and guidelines affecting project execution. The following policies, guidelines and methodologies can be found at http://doit.maryland.gov/policies/Pages/ContractPolicies.aspx under "Policies and Guidance." These may include, but are not limited to:

- The State's System Development Life Cycle (SDLC) methodology
- The State Information Technology Security Policy and Standards
- The State of Maryland Enterprise Architecture
- The TO Contractor shall follow the project management methodologies that are consistent with the Project Management Institute's Project Management Body of Knowledge Guide.
- TO Contractor's staff and sub-Contractors are to follow a consistent methodology for all TO

activities.

2.13 MINIMUM QUALIFICATIONS

Only those Master Contractors that fully meet all minimum qualification criteria shall be eligible for TORFP proposal evaluation. The Master Contractor's proposal and references will be used to verify minimum qualifications.

Minimum qualifications are the criteria that determine whether the entire proposal will be evaluated. These entry criteria must be exact, tangible, pass/fail and possible to be met. Any proposal not meeting a minimum qualification will be rejected. In the case where a proposal includes personnel minimum qualifications, ANY ONE individual not meeting a minimum qualification will cause the entire proposal to be rejected. The Master Contractor's proposal shall demonstrate satisfaction of the following minimum requirements:

2.13.1 OFFEROR'S COMPANY MINIMUM QUALIFICATIONS

The TO Contractor shall be capable of furnishing all necessary services required to successfully complete all tasks and work requirements and produce high quality deliverables described herein. The Master Contractor shall demonstrate, in its proposal, that it possesses such expertise in-house or has fostered strategic alliances with other firms for providing such services:

The Master Contractor shall demonstrate experience in each of the following areas, as demonstrated by a minimum of 2 examples of similarly-sized projects (as determined by geographic area) completed successfully within the last three (3) calendar years:

- Digital orthophoto data collection, processing and delivery;
- Project management of digital orthophoto data collection, processing and delivery;
- Deploying, operating and managing the safe operation of the fixed-wing aircraft;
- Obtaining any necessary flight clearances required to access the operational area;
- Managing the large amount of digital data associated with digital orthophoto image collection and processing;
- Acquiring, processing and validating the ground survey, digital surface model, the Inertial Measurement Unit (IMU) and the Differential Global Positioning System (DGPS);
- Color balancing image tiles;
- Generating digital orthophoto imagery;

The Master Contractor shall demonstrate experience in the following areas, as determined by a minimum of 1 example demonstrating the successful execution of similarly-sized projects (as determined by geographic area) completed successfully within the last three (3) calendar years. Success is defined as full lifecycle implementation of the Offeror's proposed Quality assurance and Quality Control processes.

- Provide one or more examples of Quality Assurance and Quality Control processes, including use of web based tools completed successfully within the last three (3) calendar years. Success is considered to be satisfactory performance of the offeror's process. Provide one or more examples of large-scale, orthophoto imagery projects completed successfully within the last three (3) calendar years. Success is considered to be satisfactory performance of the offeror's process.
- Demonstrate experience in providing each of the optional services listed below as described in at least one example:
    - Optional service 1 (See Section 2.11.1)
    - Optional service 2 (See Section 2.11.2)
    - Optional service 3 (See Section 2.11.3)

- Optional service 4 (See Section 2.11.4)

2.13.2 OFFEROR'S PERSONNEL MINIMUM QUALIFICATIONS

Only those Offerors supplying key proposed personnel that fully meet all minimum qualification criteria shall be eligible for TORFP proposal evaluation.

The proposed staff shall meet the following minimum qualification criteria for the Offeror to be eligible for consideration in the evaluation of this TORFP.

Resumes shall clearly outline starting dates and ending dates for each applicable experience or skills.

Project Manager

The TO Contractor Project Manager shall have at least five (5) years of project management experience and be a Certified PMP, GISP, or Certified Photogrammetrist.

Lead Field Surveyor
Lead Field Surveyor shall be licensed in MD.

2.14 GOVERNMENT FURNISHED MATERIALS

The state will provide upon request the following data for the purposes of estimating and project planning:

- Project Boundary shapefiles – land area and political boundaries
- Existing geodetic network shapefile
- LiDAR DEM
- Boundaries of selected local buy-up project areas
- Existing (2011/2013) tile layout with attributes
- Buffer areas used in previous projects

2.15 RETAINAGE

This section does not apply to the TORFP.

2.16 INVOICING

Payment will only be made upon completion and acceptance of the deliverables defined in Section 2.10.

Invoice payments to the TO Contractor shall be governed by the terms and conditions defined in the CATS+ Master Contract. A proper invoice for payment shall contain the TO Contractor's Federal Tax Identification Number, as well as the information described below, and must be submitted according to the TO Manager's instructions for payment approval.

The TO Contractor shall submit invoices for payment upon acceptance of separately priced deliverables, on or before the 15th day of the month following receipt of the approved notice(s) of acceptance from the TO Manager. A copy of the notice(s) of acceptance shall accompany all invoices submitted for payment.

2.16.1 INVOICE SUBMISSION PROCEDURE

This procedure consists of the following requirements and steps:

- The invoice shall identify the Maryland Department of Information Technology, Geographic Information Officer as the TO Requesting Agency, deliverable description, associated TO Agreement number, date of invoice, period of performance covered by the invoice, and a TO

Contractor point of contact with telephone number.

Unless otherwise designated, the TO Contractor shall send the original of each invoice and supporting documentation (for each deliverable being invoiced) submitted for payment to the Maryland Department of Information Technology, Deputy Geographic Information Officer at the following address: Kenneth M. Miller, Maryland Department of Information Technology, Geographic Information Officer, 45 Calvert Street, Annapolis, MD 21401. Invoices must contain the Emergency Systems Number Board contract reference and once reviewed by the State will be forwarded to the ESNB for payment.

Invoices for final payment shall be clearly marked as "FINAL" and submitted when all work requirements have been completed and no further charges are to be incurred under the TO Agreement. In no event shall any invoice be submitted later than sixty (60) calendar days from the TO Agreement termination date.

2.17 MBE PARTICIPATION REPORTS

Monthly reporting of MBE participation is required in accordance with the terms and conditions of the CATS+ Master Contract by the 15th day of each month. The TO Contractor shall provide a completed MBE Participation form (Attachment 6, Form D-5) to Maryland Department of Information Technology, Geographic Information Officer at the same time the invoice copy is sent. The TO Contractor shall ensure that each MBE Subcontractor provides a completed MBE Participation Form (Attachment 6, Form D-6). Subcontractor reporting shall be sent directly from the subcontractor to Maryland Department of Information Technology, Geographic Information Officer. Maryland Department of Information Technology, Geographic Information Officer will monitor both the TO Contractor's efforts to achieve the MBE participation goal and compliance with reporting requirements. The TO Contractor shall email all completed forms, copies of invoices and checks paid to the MBE directly to the TO Procurement Officer and TO Manager.

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SECTION 3 - TASK ORDER PROPOSAL FORMAT AND SUBMISSION REQUIREMENTS

3.1 REQUIRED RESPONSE

Each Master Contractor receiving this CATS+ TORFP must respond within the submission time designated in the Key Information Summary Sheet. Each Master Contractor is required to submit one of two possible responses: 1) a proposal; or 2) a completed Master Contractor Feedback Form. The feedback form helps the State understand for future contract development why Master Contractors did not submit proposals. The form is accessible via the CATS+ Master Contractor login screen and clicking on TORFP Feedback Response Form from the menu.

3.2 SUBMISSION

The TO Proposal shall be submitted via two e-mails, each not to exceed 10 MB.

The TO Technical Proposal shall be contained in one email, with two attachments. This email shall include:

- Subject line "CATS+ TORFP # 060B4400005 Technical" plus the Master Contractor Name
- One attachment labeled "TORFP 060B4400005 Technical - Attachments" containing all Technical Proposal Attachments (see Section 3.3 below), signed and in PDF format.
- One attachment labeled "TORFP 060B4400005 Technical – Proposal" in MS Word format 2007 or greater

The TO Financial Proposal shall be contained in one email, with one attachment in MS Excel format 2007 or greater and PDF format. This email shall include:

- Subject line "CATS+ TORFP # 060B4400005 Financial" plus the Master Contractor Name
- Two attachments labeled "TORFP 060B4400005 Financial" containing the Financial Proposal contents, signed and in both Excel and in PDF format

3.3 SUMMARY OF ATTACHMENTS

No attachment forms shall be altered. Signatures shall be clearly visible.

The following attachments shall be included with the TO Technical Proposal:

- Attachment 6 – MBE Form D-1 and D-2
- Attachment 8 - Conflict of Interest and Disclosure Affidavit
- Attachment 13– Living Wage Affidavit of Agreement
- Attachment 14 – Certification Regarding Investments in Iran

NOTE: If the email size attachment exceeds the capacity of the email server the files may be posted to a vendor's ftp site and an email should be sent confirming all files are available for download.

The following attachments shall be included with the TO Financial Proposal:

- Attachment 1 – Price Proposal Orthoimagery and Related Products
- Attachment 2 – Price Proposal LiDAR Option
- Attachment 3 – Price Proposal Oblique Imagery Option
- Attachment 4 – Price Proposal Planimetric Mapping Option
- Attachment 5 – Price Proposal Land Use/Land Cover Updating Option

3.4 PROPOSAL FORMAT

If a Master Contractor elects to submit a TO Proposal, the Master Contractor shall do so in conformance with the requirements of this CATS+ TORFP. A TO Proposal shall contain the following sections in order:

3.4.1 TO TECHNICAL PROPOSAL

Letter of Transmittal

The letter of transmittal should be no longer than two pages. It must state the consultant's agreement to the terms and conditions contained in this documentThe letter of transmittal must be signed by a person authorized to bind the consultant.

Firm Overview

This section shall be no longer than 2 pages per firm (prime and subcontractors). At a minimum, this section must include:

- Summary of Consultant Organization
- Duns & Bradstreet Number
- Federal Tax Identification Number
- Ownership Type
- Listing of Consultant Organization Officers
- Production Office (s)
- Management Office, if different

Key Personnel

Offeror shall propose up to four (4) key personnel. Each resume is limited to one (1) page and must include the following information:

- Name
- Title
- Location
- Role Assigned for This Project
- Telephone Number
- E-Mail Address
- Education
- Professional Certifications
- Years with Consultant Organization

The resumes requested shall include the following key personnel:

- Principal in Charge of the Consultant Organization (person with authority to bind)
- Assigned Project Manager, certified PMP or other registration
- Lead Field Surveyor, licensed in MD
- Assigned Quality Control Manager

Key personnel may not be replaced without written permission from the State. Failure to include resumes and/or contact information for any of the individuals listed above may result in disqualification. The Principal in Charge shall have the legal authority to contractually bind the Master Contractor.

Professional qualifications for each of the key personnel proposed for the project should be included and summarized in tabular form in the overview to this section. Professional qualifications include

registrations or certifications in surveying, photogrammetric, GIS, and Project Management related. Our expectation is that key personnel will actually participate and will be actively involved in management and production activities related to the tasks being completed.

Project Management Approach

In this section the Master Contractor shall describe its approach to managing the varied tasks described in the Scope of Work (Section 2). Note: The State expects the vendor to assign an experienced project manager to the project. The project manager will work with the State's project manager to ensure the successful implementation and completion of the project.

Master Contractor and Subcontractor Experience and Capabilities

This section shall be limited to seven (7) successful project reference write-ups to evidence past performance of programs the Master Contractor or Subcontractor has completed that were similar to Section 2 – Scope of Work. At least four (4) of the references must be provided relevant to work completed by the Master Contractor. Success is considered to be satisfactory performance of the offeror's process.

Our expectation is that at least three (3) of the references will be provided for Statewide, or regional (multi-county) multi-participant orthoimagery projects. Each project write-up is limited to one (1) page and must include the following information:

- Name of Organization
- Project Name or task order name
- Location
- Role on Project (prime, sub, etc.)
- Project Description
- Services provided as they relate to Section 2 – Scope of Work
- Project Start
- Project Completion
- Owner Contact Information (name, title, phone and e-mail at a minimum. Contact shall be accessible and knowledgeable regarding experience)
- Current Master Contractor team personnel who participated in the project
- Contract Value
- If the Master Contractor is no longer providing services, explain why not
- Indicate if the contract was terminated before the original expiration date
- Indicate if any renewal options were not exercised

Production Approach

This section is not limited in length and is intended to be the focus of the TO Proposals. Please address all primary and secondary options. At a minimum, the following information must be supplied:

- Type of Digital Sensor(s) proposed for this Project
- Proposed Flight Plan (Including Height, # of Flight Lines, # of Frames (or strip equivalent) and # of Flight Line Miles)
- Number of aircraft available and number to be dedicated during the flying season.
- Number of ground control points required and proposed
- Preference for Targeted or Photo-Identifiable Control
- Image Post-Processing Techniques
- Aerial Triangulation Software and Techniques
- Method for DEM development to support orthorectification

- Digital Orthophoto Software and Techniques
- Techniques for Near True Ortho production
- General Approach for each of the optional items

Note that since the options are unfunded at this time the State is mostly interested that vendors have the capability to perform the optional services rather than a detailed methodology.

QA/QC Approach

The State requires each Offeror to provide a process workflow of its approach to QA/QC. Of specific interest is when each QA/QC step occurs in the production process. In addition to the process map, each consultant should discuss its procedures to ensure data conformance to the requirements outlined herein.

Proposed Schedule

Each Offeror must provide a Gantt chart showing all major work items, proposed milestones and data delivery dates. It should be noted that the State and its partners would rather see a realistic schedule having reliable accuracy rather than an overly aggressive schedule that may be difficult to achieve. Quality and high rates of first-time acceptance have greater value than the schedule. Respondents must also detail other major aerial acquisition and orthophoto projects scheduled for 2014 that are pending or under contract.

MBE Participation

Submit completed MBE documents

State Assistance

Provide an estimate of expectation concerning participation by State personnel.

Confidentiality

A Master Contractor should give specific attention to the identification of those portions of its proposal that it considers confidential, proprietary commercial information or trade secrets, and provide justification why such materials, upon request, should not be disclosed by the State under the Public Information Act, Title 10, Subtitle 6, of the State Government Article of the Annotated Code of Maryland. Contractors are advised that, upon request for this information from a third party, the TO Procurement Officer will be required to make an independent determination regarding whether the information may be disclosed.

3.4.2 TO FINANCIAL PROPOSAL

The Offeror's Financial Proposal should contain the following:

- A description of any assumptions on which the Master Contractor's TO Financial Proposal is based (Assumptions shall not constitute conditions, contingencies, or exceptions to the price proposal);
- Attachment 1 Completed Financial Proposal.

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SECTION 4 – TASK ORDER AWARD PROCESS

4.1 REQUIRED RESPONSE

The TO Contractor will be selected from among all eligible Master Contractors within the appropriate Functional Area responding to the CATS+ TORFP. In making the TO Agreement award determination, the TO Requesting Agency will consider all information submitted in accordance with Section 3.

4.2 TO PROPOSAL EVALUATION CRITERIA

The following are technical criteria for evaluating a TO Proposal in descending order of importance. Failure to meet minimum qualifications shall render a TO Technical Proposal not reasonably susceptible for award and prompt the TO Procurement Officer to notify the Offeror of this determination.

It is the intent of the State of Maryland to select an Offeror that provides the best value for this project. The evaluation criteria shall include the following items listed below in order of importance:

- Technical Approach to Project including Sensor Utilized and Production Techniques for aerial photography, ground control, aerial triangulation, and orthophoto production phases of the project
- Project Management Approach and Reporting Mechanisms
- Quality Assurance and Quality Control Plans and Approach to this Project
- Key Personnel & Past Performance
- Proposed Schedule
- Technical ability to provide optional services

4.3 SELECTION PROCEDURES

TO Technical Proposals that meet minimum qualifications shall be further evaluated and ranked according to the criteria in Section 4.2. TO Proposals will be assessed throughout the evaluation process for compliance with the minimum qualifications listed in Section 2 of this TORFP, and quality of responses to Section 3.4.1 TO Technical Proposal. For TO Technical Proposals deemed technically qualified, the associated TO Financial Proposal will be opened. All others will be deemed not reasonably susceptible to award and will receive e-mail notice from the TO Procurement Officer of not being selected to perform the work.

Qualified TO Financial Proposal responses will be reviewed and ranked from lowest to highest price proposed.

The most advantageous TO Proposal offer considering technical and financial submission shall be selected for TO Award. In making this selection, technical approach will have greater weight than price.

4.4 COMMENCEMENT OF WORK UNDER A TO AGREEMENT

Commencement of work under a TO Agreement shall be initiated only upon issuance of a fully executed TO Agreement (Attachment 7), a Purchase Order, and by a Notice to Proceed authorized by the TO Procurement Officer. See Attachment 10 - Notice to Proceed (sample).

ATTACHMENT 1 – PRICE PROPOSAL
Orthoimagery and Related Products

PRICE PROPOSAL FOR CATS+ TORFP #F40B4400019

For calculation purposes, the number of square miles for Western Shore and the Eastern Shore can be found in Section 2.3

1"=200' ASPRS Class I Orthos / 0.5' GSD)	**$/sq mile Western Shore**	**$/sq mi for Eastern Shore**	**Total Cost Western Shore**	**Total Cost Eastern Shore**
One full set of photo services for State of Maryland, consisting of all of the following:				
Project Management: (Initiation, Planning, Project Workplan and QA/QC Tools	$	$	$	$
Ground Control: Surveying	$	$	$	$
Aerial Photography Acquisition and Processing	$	$	$	$
Aerial Triangulation	$	$	$	$
DEM	$	$	$	$
Digital Ortho Production	$	$	$	$
Pilot Area Production of Color Orthophotography	$	$	$	$
Pilot Area Production of Compressed Deliveries	$	$	$	$
Pilot Area QC and Pilot Review Meetings	$	$	$	$
State-wide Production of Color Orthophotography	$	$	$	$
Statewide Production of Compressed and Meters Deliveries	$	$	$	$
Production Area QC and Pilot Review Meetings	$	$	$	$
SubTotal for Item 1	**NA**	**NA**	**$**	**$**
Total Fixed Price for Item 1 (Eastern Short Subtotal + Western Shore Subtotal)		**$**		

		Cost per hour	**Number of hours (for evaluation purposes)**	**Total Evaluated Price**
2. Technical Assistance (up to 150 hours per calendar year)		$	150	$

Number of hours is established for evaluation purposes only. The number of hours are not to be construed as "guaranteed" hours; the value in this column is an estimate only for purposes of price proposal evaluation.

TOTAL Evaluated Price – Primary State products (Items 1 and 2)		**$**

Optional Imagery Buy-ups (Not used in price evaluation)	**UNIT PRICE**	
100' Scale ASPRS Class I/0.25' GSD for planned buy up areas (see Section 2.6.4)		
100' Scale ASPRS Class I/0.25' GSD for other areas		
Near True Orthos 200' Scale ASPRS Class I/0.25' GSD (minimum 2 square miles – excludes Baltimore City)		
Near True Orthos 200' Scale ASPRS Class I/0.25' GSD (minimum 2 square miles – for Baltimore City)		
100' Scale ASPRS Class I/0.25' GSD		
Near True Orthos 100' Scale ASPRS Class I/0.25' GSD (minimum 1 square mile – excludes Baltimore City)		
Near True Orthos 100' Scale ASPRS Class I/0.25' GSD (minimum 1 square mile – for Baltimore City)		
Optional Coverage of Chesapeake Bay (Section 2.3)		

Authorized Individual Name Company Name

Title Company Tax ID #

Note that the cost proposals will be evaluated based on the pricing for the primary products (orthoimagery products) required by the State.

SUBMIT AS A .PDF AND EXCEL FILE WITH THE TO FINANCIAL PROPOSAL

ATTACHMENT 2 – PRICE PROPOSAL LIDAR DATA OPTION

PRICE PROPOSAL FOR CATS+ TORFP #060B4400005

Optional Products (not used for evaluation)

USGS LiDAR DATA	**$/sq. mile (minimum 250 square miles) Quality Level 1**	**$/sq. mile (minimum 250 square miles) Quality Level 2**	**$/sq. mile (minimum 250 square miles) Quality Level 3**
Project Management and Independent QA/QC	$	$	$
Data Acquisition and Processing	$	$	$
Pilot and Production Deliveries	$	$	$
TOTAL Price – LiDAR products	**$**	**$**	**$**

Authorized Individual Name

Company Name

Title

Company Tax ID #

Note that the costs below are for estimating purposes. There is no contractual requirement to purchase any optional services.

SUBMIT AS BOTH A PDF AND EXCEL FILE WITH THE TO FINANCIAL PROPOSAL

ATTACHMENT 3 – PRICE PROPOSAL Oblique Imagery Option

PRICE PROPOSAL FOR CATS+ TORFP #060B4400005

Optional Products (not used for evaluation)

OBLIQUE IMAGERY	**$/sq. mile (minimum 50 square miles) 4" GSD**	**$/sq. mile (minimum 50 square miles) 6" GSD**	**$/sq. mile (minimum 50 square miles) Quality 12" GSD**
Project Management and Independent QA/QC	$	$	$
Data Acquisition and Processing	$	$	$
Pilot Area Production	$	$	$
Production Deliveries	$	$	$

Authorized Individual Name

Company Name

Title

Company Tax ID #

Note that the costs below are for estimating purposes. There is no contractual requirement to purchase any optional services. **Costs assume unlicensed, unlimited use. If a licensed product for oblique imagery is proposed it shall be specifically noted. Vendors may submit pricing for licensed and unlicensed datasets.**

SUBMIT AS BOTH A .PDF AND EXCEL FILE WITH THE TO FINANCIAL PROPOSAL

ATTACHMENT 4 – PRICE PROPOSAL Planimetric Mapping Option

PRICE PROPOSAL FOR CATS+ TORFP #060B4400005

Optional services (not used for evaluation)

	New Planimetric Mapping Level 1 Features OR Updating Existing Data over 6 years old	**Update Planimetric Mapping (Existing Data newer than 6 years old Level 1 Features**	**New Planimetric Mapping Level 1 AND Level 2 Features OR Updating Existing Data over 6 years old**	**Update Planimetric Mapping (Existing Data newer than 6 years old Level 1 AND Level 2 Features**
Allegany	$	$	$	$
Anne Arundel	$	$	$	$
Baltimore City	$	$	$	$
Baltimore	$	$	$	$
Calvert	$	$	$	$
Carroll	$	$	$	$
Charles	$	$	$	$
Frederick	$	$	$	$
Garrett	$	$	$	$
Harford	$	$	$	$
Howard	$	$	$	$
Montgomery	$	$	$	$
Prince George's	$	$	$	$
St. Mary's	$	$	$	$
Washington	$	$	$	$
Cecil	$	$	$	$
Washington	$	$	$	$

Kent	$	$	$	$
Dorchester	$	$	$	$
Somerset	$	$	$	$
Talbot	$	$	$	$
Wicomico	$	$	$	$
Worcester	$	$	$	$
Queen Anne's	$	$	$	$

Authorized Individual Name

Company Name

Title

Company Tax ID #

SUBMIT AS BOTH A PDF AND EXCEL FILE WITH THE TO FINANCIAL PROPOSAL

ATTACHMENT 5 – PRICE PROPOSAL Land Use / Land Cover Updating Option

PRICE PROPOSAL FOR CATS+ TORFP #060B4400005

Optional services (not used for evaluation)

	Level 1 **10 acre minimum mapping unit**	**Level 2** **1 acre minimum mapping unit**
Allegany	$	$
Anne Arundel	$	$
Baltimore City	$	$
Baltimore	$	$
Calvert	$	$
Carroll	$	$
Charles	$	$
Frederick	$	$
Garrett	$	$
Harford	$	$
Howard	$	$
Montgomery	$	$
Prince George's	$	$
St. Mary's	$	$
Washington	$	$
Cecil	$	$
Washington	$	$
Kent	$	$
Dorchester	$	$
Somerset	$	$
Talbot	$	$
Wicomico	$	$

Worcester	$	$
Queen Anne's	$	$

Authorized Individual Name

Company Name

Title

Company Tax ID #

Note that the costs below are for estimating purposes only. Final costs will be based on negotiations with the selected contractor and in the case of update mapping a review of existing data. The costs here can serve as a basis for negotiating final prices with the selected contractor.

SUBMIT AS BOTH A .PDF AND EXCEL FILE WITH THE TO FINANCIAL PROPOSAL

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

TO CONTRACTOR MINORITY BUSINESS ENTERPRISE REPORTING REQUIREMENTS

CATS+ TORFP # 060B4400005

These instructions are meant to accompany the customized reporting forms sent to you by the TO Manager. If, after reading these instructions, you have additional questions or need further clarification, please contact the TO Manager immediately.

1. As the TO Contractor, you have entered into a TO Agreement with the State of Maryland. As such, your company/firm is responsible for successful completion of all deliverables under the contract, including your commitment to making a good faith effort to meet the MBE participation goal(s) established for TORFP. Part of that effort, as outlined in the TORFP, includes submission of monthly reports to the State regarding the previous month's MBE payment activity. Reporting forms D-5 (TO Contractor Paid/Unpaid MBE Invoice Report) and D-6 (Subcontractor Paid/Unpaid MBE Invoice Report) are attached for your use and convenience.

2. The TO Contractor must complete a separate Form D-5 for each MBE subcontractor for each month of the contract and submit one copy to each of the locations indicated at the bottom of the form. The report is due no later than the 15th of the month following the month that is being reported. For example, the report for January's activity is due no later than the 15th of February. With the approval of the TO Manager, the report may be submitted electronically. Note: Reports are required to be submitted each month, regardless of whether there was any MBE payment activity for the reporting month.

3. The TO Contractor is responsible for ensuring that each subcontractor receives a copy (e-copy of and/or hard copy) of Form D-6. The TO Contractor should make sure that the subcontractor receives all the information necessary to complete the form properly, i.e., all of the information located in the upper right corner of the form. It may be wise to customize Form D-6 (upper right corner of the form) for the subcontractor the same as the Form D-5 was customized by the TO Manager for the benefit of the TO Contractor. This will help to minimize any confusion for those who receive and review the reports.

4. It is the responsibility of the TO Contractor to make sure that all subcontractors submit reports no later than the 15th of each month, regardless of whether there was any MBE payment activity for the reporting month. Actual payment data is verified and entered into the State's financial management tracking system from the subcontractor's D-6 report only. Therefore, if the subcontractor(s) do not submit their D-6 payment reports, the TO Contractor cannot and will not be given credit for subcontractor payments, regardless of the TO Contractor's proper submission of Form D-5. The TO Manager will contact the TO Contractor if reports are not received each month from either the prime contractor or any of the identified subcontractors. The TO Contractor must promptly notify the TO Manager if, during the course of the contract, a new MBE subcontractor is utilized. Failure to comply with the MBE contract provisions and reporting requirements may result in sanctions, as provided by COMAR 21.11.03.13.

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 1

CERTIFIED MBE UTILIZATION AND FAIR SOLICITATION AFFIDAVIT

This document shall be included with the submittal of the Offeror's TO Proposal. If the Offeror fails to submit this form with the TO Proposal, the TO Procurement Officer shall determine that the Offeror's TO Proposal is not reasonably susceptible of being selected for award.

In conjunction with the offer submitted in response to TORFP No. 060B4400005, I affirm the following:

1. I acknowledge the overall certified Minority Business Enterprise (MBE) participation goal of ___ percent and, if specified in the TORFP, sub-goals of ____ percent for MBEs classified as African American-owned and ____ percent for MBEs classified as women-owned. I have made a good faith effort to achieve this goal.

   OR

   After having made a good faith effort to achieve the MBE participation goal, I conclude that I am unable to achieve it. Instead, I intend to achieve an MBE goal of _____percent and request a waiver of the remainder of the goal. If I am selected as the apparent TO Agreement awardee, I will submit written waiver documentation that complies with COMAR 21.11.03.11 within 10 business days of receiving notification that our firm is the apparent low bidder or the apparent awardee.

2. I have identified the specific commitment of certified Minority Business Enterprises by completing and submitting an MBE Participation Schedule (Attachment 6 - Form D-2) with the proposal.

3. I acknowledge that the MBE subcontractors/suppliers listed in the MBE Participation Schedule will be used to accomplish the percentage of MBE participation that I intend to achieve.

4. I understand that if I am notified that I am the apparent TO Agreement awardee, I must submit the following documentation within 10 working days of receiving notice of the potential award or from the date of conditional award (per COMAR 21.11.03.10), whichever is earlier.

   (a) Outreach Efforts Compliance Statement (Attachment D-3)

   (b) Subcontractor Project Participation Statement (Attachment D-4)

   (c) MBE Waiver Documentation per COMAR 21.11.03.11 (if applicable)

   (d) Any other documentation required by the TO Procurement Officer to ascertain offeror's responsibility in connection with the certified MBE participation goal.

   If I am the apparent TO Agreement awardee, I acknowledge that if I fail to return each completed document within the required time, the TO Procurement Officer may determine that I am not responsible and therefore not eligible for TO Agreement award. If the TO Agreement has already been awarded, the award is voidable.

5. In the solicitation of subcontract quotations or offers, MBE subcontractors were provided not less than the same information and amount of time to respond as were non-MBE subcontractors.

I solemnly affirm under the penalties of perjury that the contents of this paper are true to the best of my knowledge, information, and belief.

_____	_____
Offeror Name	Signature of Affiant
_____	_____
Address	Printed Name, Title
_____	
_____	
_____	
_____	
Date	

SUBMIT AS A .PDF FILE WITH TO TECHNICAL PROPOSAL

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 2

MINORITY BUSINESS ENTERPRISE PARTICIPATION SCHEDULE

This document shall be included with the submittal of the TO Proposal. If the Offeror fails to submit this form with the TO Proposal, the TO Procurement Officer shall determine that the TO Proposal is not reasonably susceptible of being selected for award.

TO Prime Contractor (Firm Name, Address, Phone)	Task Order Description
Task Order Agreement Number 060B4400005	
List Information For Each Certified MBE Subcontractor On This Project	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	

USE ATTACHMENT D-2 CONTINUATION PAGE AS NEEDED

SUMMARY

TOTAL MBE PARTICIPATION: _____%
TOTAL WOMAN-OWNED MBE PARTICIPATION: _____%
TOTAL AFRICAN AMERICAN-OWNED MBE PARTICIPATION: _____%

Document Prepared By: (please print or type)

Name:_____ Title:_____

SUBMIT AS A .PDF FILE WITH TO TECHNICAL PROPOSAL

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 2

MINORITY BUSINESS ENTERPRISE PARTICIPATION SCHEDULE (CONTINUED)

List Information For Each Certified MBE Subcontractor On This Project	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	
Minority Firm Name	MBE Certification Number
Work To Be Performed/SIC	
Percentage of Total Contract	

SUBMIT AS A .PDF FILE WITH TO TECHNICAL PROPOSAL

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 3

OUTREACH EFFORTS COMPLIANCE STATEMENT

In conjunction with the bid or offer submitted in response to TORFP #060B4400005, I state the following:

1. Offeror identified opportunities to subcontract in these specific work categories:

2. Attached to this form are copies of written solicitations (with bidding instructions) used to solicit certified MBEs for these subcontract opportunities.

3. Offeror made the following attempts to contact personally the solicited MBEs:

4. ☐ Offeror assisted MBEs to fulfill or to seek waiver of bonding requirements.

   (DESCRIBE EFFORTS)

   ☐ This project does not involve bonding requirements.

5. ☐ Offeror did/did not attend the pre-proposal conference

   ☐ No pre-proposal conference was held.

_____	By:	_____
Offeror Name		Name
_____		_____
Address		Title
		_____
		Date

SUBMIT WITHIN 10 WORKING DAYS OF RECEIVING NOTICE OF THE POTENTIAL AWARD

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 4

SUBCONTRACTOR PROJECT PARTICIPATION STATEMENT

SUBMIT ONE FORM FOR EACH CERTIFIED MBE LISTED IN THE MBE PARTICIPATION SCHEDULE

Provided that _____ is awarded the TO Agreement in
(Prime TO Contractor Name)
conjunction with TORFP No. 060B4400005, it and _____,
(Subcontractor Name)
MDOT Certification No._____, intend to enter into a contract by which the subcontractor shall:

(Describe work to be performed by MBE):
_____

_____

_____

_____

_____

☐ No bonds are required of Subcontractor

☐ The following amount and type of bonds are required of Subcontractor:

By:	By:
_____	_____
Prime Contractor Signature	Subcontractor Signature
_____	_____
Name	Name
_____	_____
Title	Title
_____	_____
Date	Date

SUBMIT WITHIN 10 WORKING DAYS OF RECEIVING NOTICE OF THE POTENTIAL AWARD

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 5

MINORITY BUSINESS ENTERPRISE PARTICIPATION TO CONTRACTOR PAID/UNPAID INVOICE REPORT

Report #: _____ Reporting Period (Month/Year): _____ **Report is due by the 15th of the following month.**	CATS+ TORFP # 060B4400005 Contracting Unit _____ Contract Amount_____ MBE Sub Contract Amt_____ Contract Begin Date_____ Contract End Date_____ Services Provided_____

Prime TO Contractor:	Contact Person:	
Address:		
City:	State:	ZIP:
Phone:	FAX:	
Subcontractor Name:	Contact Person:	
Phone:	FAX:	
Subcontractor Services Provided:		
List all unpaid invoices over 30 days old received from the MBE subcontractor named above: **1.** **2.** **3.** **Total Dollars Unpaid: $_____**		

**If more than one MBE subcontractor is used for this contract, please use separate forms.

Return one copy of this form to the following address:

Mr. Kenneth Miller Department of Information Technology 45 Calvert St. Annapolis, MD 21401 Ken.Miller@Maryland.gov	Michael Meinl Department of Information Technology 45 Calvert St. Annapolis, MD 21401 Michael.Meinl@Maryland.gov

Signature:_____ Date:_____

SUBMIT AS REQUIRED IN TO CONTRACTOR MBE REPORTING REQUIREMENTS

ATTACHMENT 6 – MINORITY BUSINESS ENTERPRISE FORMS

FORM D – 6

MINORITY BUSINESS ENTERPRISE PARTICIPATION SUBCONTRACTOR PAID/UNPAID INVOICE REPORT

Report #: _____ Reporting Period (Month/Year): __/_____ **Report Due By the 15th of the following Month.**	CATS+ TORFP # 060B4400005 Contracting Unit _____ Contract Amount_____ MBE Sub Contract Amt_____ Contract Begin Date_____ Contract End Date_____ Services Provided_____

MBE Subcontractor Name:		
MDOT Certification #:		
Contact Person:		
Address:		
City:	State:	ZIP:
Phone:	FAX:	
Subcontractor Services Provided:		

List all payments received from Prime TO Contractor during reporting period indicated above. **1.** **2.** **3.** **Total Dollars Paid:** **$_____**	**List dates and amounts of any unpaid invoices over 30 days old.** **1.** **2.** **3.** **Total Dollars Unpaid:** **$_____**

Prime TO Contractor:	Contact Person:

Return one copy of this form to the following address:

Mr. Kenneth Miller, TO Manager Department of Information Technology 45 Calvert St. Annapolis, MD 21401 Ken.Miller@Maryland.gov	Michael Meinl, Procurement Officer Department of Information Technology 45 Calvert St. Annapolis, MD 21401 Michael.Meinl@Maryland.gov

Signature:_____ Date:_____

Submit as required in TO Contractor MBE Reporting Requirements

ATTACHMENT 7 – TASK ORDER AGREEMENT

CATS+ TORFP# 060B4400005 OF MASTER CONTRACT #060B9800035

This Task Order Agreement ("TO Agreement") is made this day of Month, 200X by and between Task Order Contractor (TO Contractor) and the STATE OF MARYLAND, TO Requesting Agency.

IN CONSIDERATION of the mutual premises and the covenants herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Definitions. In this TO Agreement, the following words have the meanings indicated:
    a. "Agency" means the TO Requesting Agency, as identified in the CATS+ TORFP # ADPICS PO.
    b. "CATS+ TORFP" means the Task Order Request for Proposals # ADPICS PO, dated MONTH DAY, YEAR, including any addenda.
    c. "Master Contract" means the CATS+ Master Contract between the Maryland Department of Information Technology and TO Contractor dated _____.
    d. "TO Procurement Officer" means TO Procurement Officer. The Agency may change the TO Procurement Officer at any time by written notice to the TO Contractor.
    e. "TO Agreement" means this signed TO Agreement between TO Requesting Agency and TO Contractor.
    f. "TO Contractor" means the CATS+ Master Contractor awarded this TO Agreement, whose principal business address is _____.
    g. "TO Manager" means TO Manager of the Agency. The Agency may change the TO Manager at any time by written notice to the TO Contractor.
    h. "TO Technical Proposal" means the TO Contractor's technical response to the CATS+ TORFP dated date of TO Technical Proposal.
    i. "TO Financial Proposal" means the TO Contractor's financial response to the CATS+ TORFP dated date of TO Financial Proposal.
    j. "TO Proposal" collectively refers to the TO Technical Proposal and TO Financial Proposal.

2. Scope of Work

2.1 This TO Agreement incorporates all of the terms and conditions of the Master Contract and shall not in any way amend conflict with or supersede the Master Contract.

2.2 The TO Contractor shall, in full satisfaction of the specific requirements of this TO Agreement, provide the services set forth in Section 2 of the CATS+ TORFP. These services shall be provided in accordance with the Master Contract, this TO Agreement, and the following Exhibits, which are attached and incorporated herein by reference. If there is any conflict among the Master Contract, this TO Agreement, and these Exhibits, the terms of the Master Contract shall govern. If there is any conflict between this TO Agreement and any of these Exhibits, the following order of precedence shall determine the prevailing provision:

    a. The TO Agreement,

b. Exhibit A – CATS+ TORFP

c. Exhibit B – TO Technical Proposal

d. Exhibit C – TO Financial Proposal

2.3 The TO Procurement Officer may, at any time, by written order, make changes in the work within the general scope of the TO Agreement. No other order, statement or conduct of the TO Procurement Officer or any other person shall be treated as a change or entitle the TO Contractor to an equitable adjustment under this Section. Except as otherwise provided in this TO Agreement, if any change under this Section causes an increase or decrease in the TO Contractor's cost of, or the time required for, the performance of any part of the work, whether or not changed by the order, an equitable adjustment in the TO Agreement price shall be made and the TO Agreement modified in writing accordingly. The TO Contractor must assert in writing its right to an adjustment under this Section within thirty (30) days of receipt of written change order and shall include a written statement setting forth the nature and cost of such claim. No claim by the TO Contractor shall be allowed if asserted after final payment under this TO Agreement. Failure to agree to an adjustment under this Section shall be a dispute under the Disputes clause of the Master Contract. Nothing in this Section shall excuse the TO Contractor from proceeding with the TO Agreement as changed.

3. Time for Performance

Unless terminated earlier as provided in the Master Contract, the TO Contractor shall provide the services described in the TO Proposal and in accordance with the CATS+ TORFP on receipt of a Notice to Proceed from the TO Manager. The term of this TO Agreement is for a period of five (5) years, commencing on the date of Notice to Proceed and terminating on Month Day, Year.

4. Consideration and Payment

4.1 The consideration to be paid the TO Contractor shall be done so in accordance with the CATS+ TORFP and shall not exceed the total amount of the task order. Any work performed by the TO Contractor in excess of the not-to-exceed ceiling amount of the TO Agreement without the prior written approval of the TO Manager is at the TO Contractor's risk of non-payment.

4.2 Payments to the TO Contractor shall be made as outlined Section 2 of the CATS+ TORFP, but no later than thirty (30) days after the Agency's receipt of an invoice for services provided by the TO Contractor, acceptance by the Agency of services provided by the TO Contractor, and pursuant to the conditions outlined in Section 4 of this Agreement.

4.3 Each invoice for services rendered must include the TO Contractor's Federal Tax Identification Number which is _____. Charges for late payment of invoices other than as prescribed by Title 15, Subtitle 1, of the State Finance and Procurement Article, Annotated Code of Maryland, as from time-to-time amended, are prohibited. Invoices must be submitted to the Agency TO Manager unless otherwise specified herein.

4.4 In addition to any other available remedies, if, in the opinion of the TO Procurement Officer, the TO Contractor fails to perform in a satisfactory and timely manner, the TO Procurement Officer may refuse or limit approval of any invoice for payment, and may cause payments to the TO Contractor to be reduced or withheld until such time as the TO Contractor meets performance standards as established by the TO Procurement Officer.

IN WITNESS THEREOF, the parties have executed this TO Agreement as of the date hereinabove set forth.

TO Contractor Name

_____ _____

By: Type or Print TO Contractor POC Date

Witness: _____

STATE OF MARYLAND, TO Requesting Agency

_____ _____

By: Isabel FitzGerald, Secretary Date

Witness: _____

ATTACHMENT 8 – CONFLICT OF INTEREST AFFIDAVIT AND DISCLOSURE

A) "Conflict of interest" means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the State, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

B) "Person" has the meaning stated in COMAR 21.01.02.01B (64) and includes a bidder, Offeror, Contractor, offeror, or subcontractor or subofferor at any tier, and also includes an employee or agent of any of them if the employee or agent has or will have the authority to control or supervise all or a portion of the work for which a bid or offer is made.

C) The bidder or Offeror warrants that, except as disclosed in §D, below, there are no relevant facts or circumstances now giving rise or which could, in the future, give rise to a conflict of interest.

D) The following facts or circumstances give rise or could in the future give rise to a conflict of interest (explain in detail—attach additional sheets if necessary):

E) The bidder or Offeror agrees that if an actual or potential conflict of interest arises after the date of this affidavit, the bidder or Offeror shall immediately make a full disclosure in writing to the procurement officer of all relevant facts and circumstances. This disclosure shall include a description of actions which the bidder or Offeror has taken and proposes to take to avoid, mitigate, or neutralize the actual or potential conflict of interest. If the contract has been awarded and performance of the contract has begun, the Contractor shall continue performance until notified by the procurement officer of any contrary action to be taken.

I DO SOLEMNLY DECLARE AND AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE CONTENTS OF THIS AFFIDAVIT ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF.

Date:_____ By:_____

(Authorized Representative and Affiant)

SUBMIT AS A .PDF FILE WITH TO TECHNICAL PROPOSAL

ATTACHMENT 9 – NOTICE TO PROCEED

Month Day, Year

TO Contractor Name

TO Contractor Mailing Address

Re: CATS+ Task Order Agreement # 060B4400005

Dear TO Contractor Contact:

This letter is your official Notice to Proceed as of Month Day, Year, for the above-referenced Task Order Agreement. TO Manager of the TO Requesting Agency will serve as your contact person on this Task Order. TO Manager can be reached at telephone # and email address.

Enclosed is an original, fully executed Task Order Agreement and purchase order.

Sincerely,

TO Procurement Officer

Task Order Procurement Officer

Enclosures (2)

cc: TO Manager

Procurement Liaison Office, Department of Information Technology

Project Management Office, Department of Information Technology

ATTACHMENT 10 – AGENCY RECEIPT OF DELIVERABLE FORM

NOT APPLICABLE FOR THIS TORFP

ATTACHMENT 11 – AGENCY ACCEPTANCE OF DELIVERABLE FORM

Agency Name: TO Requesting Agency

TORFP Title: TORFP Project Name

TO Manager: TO Manager and Phone Number

To:

The following deliverable, as required by TO Agreement # 060B4400005, has been received and reviewed in accordance with the TORFP.

Title of deliverable: _____

TORFP Contract Reference Number: Section # _____

Deliverable Reference ID # _____

This deliverable:

☐ Is accepted as delivered.

☐ Is rejected for the reason(s) indicated below.

REASON(S) FOR REJECTING DELIVERABLE:

OTHER COMMENTS:

_____ _____

TO Manager Signature Date Signed

ISSUED BY THE TO MANAGER AS REQUIRED IN THE TORFP.

ATTACHMENT 12 – TO CONTRACTOR SELF-REPORTING CHECKLIST

The purpose of this checklist is for CATS+ Master Contractors to self-report on adherence to procedures for task orders (TO) awarded under the CATS+ master contract. Requirements for TO management can be found in the CATS+ master contract RFP and at the TORFP level. The Master Contractor is requested to complete and return this form by the ***Checklist Due Date*** *below. Master Contractors may attach supporting documentation as needed. Please send the completed checklist and direct any related questions to contractoversight@doit.state.md.us with the TO number in the subject line.*

Master Contractor:	
Master Contractor Contact / Phone:	
Procuring State Agency Name:	
TO Title:	
TO Number:	
TO Type (Fixed Price, T&M, or Both):	
Checklist Issue Date:	
Checklist Due Date:	

Section 1 – Task Orders with Invoices Linked to Deliverables
A) Was the original TORFP (Task Order Request for Proposals) structured to link invoice payments to distinct deliverables with specific acceptance criteria? **Yes** ☐ **No** ☐ **(If no, skip to Section 2.)**
B) Do TO invoices match corresponding deliverable prices shown in the accepted Financial Proposal? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
C) Is the deliverable acceptance process being adhered to as defined in the TORFP? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
Section 2 – Task Orders with Invoices Linked to Time, Labor Rates and Materials
A) If the TO involves material costs, are material costs passed to the agency without markup by the Master Contractor? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
B) Are labor rates the same or less than the rates proposed in the accepted Financial Proposal? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
C) Is the Master Contractor providing timesheets or other appropriate documentation to support invoices? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
Section 3 – Substitution of Personnel
A) Has there been any substitution of personnel? **Yes** ☐ **No** ☐ **(If no, skip to Section 4.)**

B) Did the Master Contractor request each personnel substitution in writing? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
C) Does each accepted substitution possess equivalent or better education, experience and qualifications than incumbent personnel? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
D) Was the substitute approved by the agency in writing? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
Section 4 – MBE Participation
A) What is the MBE goal as a percentage of the TO value? **(If there is no MBE goal, skip to Section 5)** **%**
B) Are MBE reports D-5 and D-6 submitted monthly? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
C) What is the actual MBE percentage to date? (divide the dollar amount paid to date to the MBE by the total amount paid to date on the TO) **%** **(Example - $3,000 was paid to date to the MBE sub-contractor; $10,000 was paid to date on the TO; the MBE percentage is 30% (3,000 ÷ 10,000 = 0.30))**
D) Is this consistent with the planned MBE percentage at this stage of the project? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
E) Has the Master Contractor expressed difficulty with meeting the MBE goal? **Yes** ☐ **No** ☐ **(If yes, explain the circumstances and any planned corrective actions)** _____
Section 5 – TO Change Management
A) Is there a written change management procedure applicable to this TO? **Yes** ☐ **No** ☐ **(If no, explain why)** _____
B) Does the change management procedure include the following? **Yes** ☐ **No** ☐ Sections for change description, justification, and sign-off **Yes** ☐ **No** ☐ Sections for impact on cost, scope, schedule, risk and quality (i.e., the impact of change on satisfying TO requirements) **Yes** ☐ **No** ☐ A formal group charged with reviewing / approving / declining changes (e.g., change control board, steering committee, or management team)
C) Have any change orders been executed? **Yes** ☐ **No** ☐ **(If yes, explain expected or actual impact on TO cost, scope, schedule, risk and quality)** _____

D) Is the change management procedure being followed?

Yes ☐ **No** ☐ **(If no, explain why)** _____

ATTACHMENT 13 – LIVING WAGE AFFIDAVIT OF AGREEMENT

Contract No. _____

Name of Contractor _____

Address_____

City_____ State_____ Zip Code_____

If the Contract is Exempt from the Living Wage Law

The Undersigned, being an authorized representative of the above named Contractor, hereby affirms that the Contract is exempt from Maryland's Living Wage Law for the following reasons: (check all that apply)

__ Bidder/Offeror is a nonprofit organization

__ Bidder/Offeror is a public service company

__ Bidder/Offeror employs 10 or fewer employees and the proposed contract value is less than $500,000

__ Bidder/Offeror employs more than 10 employees and the proposed contract value is less than $100,000

If the Contract is a Living Wage Contract

A. The Undersigned, being an authorized representative of the above named Contractor, hereby affirms our commitment to comply with Title 18, State Finance and Procurement Article, Annotated Code of Maryland and, if required, to submit all payroll reports to the Commissioner of Labor and Industry with regard to the above stated contract. The Bidder/Offeror agrees to pay covered employees who are subject to living wage at least the living wage rate in effect at the time service is provided for hours spent on State contract activities, and to ensure that its Subcontractors who are not exempt also pay the required living wage rate to their covered employees who are subject to the living wage for hours spent on a State contract for services. The Contractor agrees to comply with, and ensure its Subcontractors comply with, the rate requirements during the initial term of the contract and all subsequent renewal periods, including any increases in the wage rate established by the Commissioner of Labor and Industry, automatically upon the effective date of the revised wage rate.

B. _____(initial here if applicable) The Bidder/Offeror affirms it has no covered employees for the following reasons (check all that apply):

__ All employee(s) proposed to work on the State contract will spend less than one-half of the employee's time during every work week on the State contract;

__ All employee(s) proposed to work on the State contract will be 17 years of age or younger during the duration of the State contract; or

__ All employee(s) proposed to work on the State contract will work less than 13 consecutive weeks on the State contract.

The Commissioner of Labor and Industry reserves the right to request payroll records and other data that the Commissioner deems sufficient to confirm these affirmations at any time.

Name of Authorized Representative: _____

Signature of Authorized Representative: _____

Date: _____ Title: _____

Witness Name (Typed or Printed): _____
Witness Signature & Date: _____

ATTACHMENT 14 - CERTIFICATION REGARDING INVESTMENTS IN IRAN

Authority: State Finance & Procurement, §§17-701 – 17-707, Annotated Code of Maryland [Chapter 447, Laws of 2012].

List: The Investment Activities in Iran list identifies companies that the Board of Public Works has found to engage in investment activities in Iran; those companies may not participate in procurements with a public body in the State. "Engaging in investment activities in Iran" means:

- Providing goods or services of at least $20 million in the energy sector of Iran; or
- For financial institutions, extending credit of at least $20 million to another person for at least 45 days if the person is on the Investment Activities In Iran list and will use the credit to provide goods or services in the energy of Iran.

The Investment Activities in Iran list is located at: www.bpw.state.md.us

Rule: A company listed on the Investment Activities In Iran list is ineligible to bid on, submit a proposal for, or renew a contract for goods and services with a State Agency or any public body of the State. Also ineligible are any parent, successor, subunit, direct or indirect subsidiary of, or any entity under common ownership or control of, any listed company.

NOTE: This law applies only to new contracts and to contract renewals. The law does not require an Agency to terminate an existing contract with a listed company.

CERTIFICATION REGARDING INVESTMENTS IN IRAN

The undersigned certifies that, in accordance with State Finance & Procurement Article, §17-705:

(i) it is not identified on the list created by the Board of Public Works as a person engaging in investment activities in Iran as described in §17-702 of State Finance & Procurement; and

(ii) it is not engaging in investment activities in Iran as described in State Finance & Procurement Article, §17-702.

The undersigned is unable make the above certification regarding its investment activities in Iran due to the following activities:

Name of Authorized Representative: _____

Signature of Authorized Representative: _____

Date: _____Title: _____

Witness Name (Typed or Printed): _____

Witness Signature and Date: _____