

## 3D Elevation Program (3DEP) State and Regional Workshops

### Responses to Questions posed during 2015 Workshops

#### 3DEP Program Direction, Policies

1. *Can USGS National Map Liaisons recommend pre-proposals and proposals that would best support 3DEP success within their areas of responsibility?*

NO. The BAA provides an open and equal opportunity for all to apply for 3DEP funds to support their project work. All projects are scored against the criteria identified within the BAA. By law proposals submitted in response to the BAA are confidential; the contents can only be divulged to those designated in the source selection plan as part of the evaluation team.

2. *Will the attendee lists of individuals or organizations attending public BAA meetings be made public?*

The USGS will not publicize the names of individuals who signed up and /or attended the public meetings.

3. *When will the USGS recognize that other elevation technology may be more realistic for some western states with large land masses?*

The USGS is leading the Emerging 3D Technologies Workgroup (E3DWG). The charge of this group is to explore the potential use and value of other 3D technologies to the 3DEP program. While our ultimate goal would be to identify technologies that would reduce the cost of the acquisition of 3D elevation data to the extent that acquiring 3DEP quality data over large western states would be financially viable, the study may also reveal that modifying the specifications in selected areas may prove to be the best path to take to acquire data considerably better than what currently exists and that would be of great value to the stakeholders in those select areas.

4. *What about employing new lidar gathering technologies, such as Geiger Mode, through 3DEP?*

The USGS is leading the Emerging 3D Technologies Workgroup (E3DWG). The charge of this group is to explore the potential use and value of other 3D technologies to the 3DEP program. Newly-commercialized lidar sensors have become operationalized and available for collections that offer the promise of many more points per square meter at much higher altitudes. This could mean collecting data for the 3D Elevation Program at a dramatically lower cost per square mile, if the data can meet the requirements that have been adopted for 3DEP. The USGS, in collaboration with the private sector, the National Geospatial-Intelligence Administration (NGA), US Fish and Wildlife Service, the National Oceanic and Atmospheric Administration (NOAA), the US Army Corps of Engineers (USACE) and the US Forest Service are evaluating these new Geiger-mode and photon counting instruments to determine if they can collect data that meets 3DEP requirements. Testing these new instruments' data against approved QL2 data, surveyed ground control and survey-grade terrestrial laser scanning (TLS) data will help us determine if these data can meet 3DEP requirements. We also will be offering suggestions to the instrument owners on variables that need to improve if needed, and/or also modify our own requirements if determined that they are too instrument specific.

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5. *Why is the 3DEP not supporting ifsar collection in the lower 48 like it is in Alaska?*

3DEP strives to acquire a nationally consistent dataset to afford equal opportunity to the benefits that can be derived from lidar. While the program acknowledges that achievement of this goal will be more challenging in some locations than others, the initial consideration for these challenging areas is to continue to explore new and different ways to achieve the goal, not to give up on it. Many in Alaska strive for higher resolution data and are not satisfied with the ifsar. The program has noted the financial and technical challenges associated with lidar acquisition over certain areas.

6. *Is it possible to collect imagery at the same time as the 3DEP lidar collection? Are there any plans to use drone in lidar collection?*

The USGS does not dictate the acquisition platform. All applicants are required to provide the USGS with a final set of deliverables as specified in the Lidar Base Specification (Heidemann, Hans Karl, 2014, Lidar base specification (ver. 1.2, November 2014): U.S. Geological Survey Techniques and Methods, book 11, chap. B4, 67 p. with appendixes, <http://dx.doi.org/10.3133/tm11B4>). Applicants requesting financial assistance in the form of a cooperative agreement to complete the work must provide the details of how they plan to accomplish this in the *Technical Approach* section of the pre-proposal and proposal submission tools. The USGS will review the approach and access the approach to assure that the process will result in 3DEP quality lidar data.

7. *What about the high cost of lidar collection in Hawaii and the Pacific Basin? What was the basis of the estimated elevation costs cited in the HI 3DEP fact sheet?*

Page 56 of the Dewberry, 2012, *Final report of the National Enhanced Elevation Assessment (revised March 29, 2012)*:

<http://www.dewberry.com/services/geospatial/national-enhanced-elevation-assessment> states "Dewberry assumes that the costs for LiDAR on distant islands will be higher than shown in Table 5.2, but actual costs are unknown without a rigorous search for airplanes with camera ports (preferably already located on these islands) and without detailed flight planning. LiDAR acquisition costs per square mile for Puerto Rico and the U.S. Virgin Islands will be moderately higher; costs for Hawaii will be much higher, perhaps doubled; and costs for Guam, American Samoa and the Northern Marianas Islands will be much higher and potentially unaffordable. They go on to estimate costs for Hawaii as stated below:

"Estimated total costs (FY 2011 dollars) by Quality Level for the 50 states are as follows:  
1. QL1 LiDAR: \$1.646B for 48 states; \$7.0M for Hawaii; not feasible for major portions of Alaska.

2. QL2 LiDAR: \$1.006B for 48 states; \$4.3M for Hawaii; not feasible for major portions of Alaska.

3. QL3 LiDAR: \$760M for 48 states; \$3.2M for Hawaii; not feasible for major portions of Alaska.

4. QL4 Image DEMs: \$487.8M for 49 states if and where stereo imagery is already available; N/A for Alaska where stereo airborne imagery is not available.

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5. QL5 IFSAR: \$241M for new data of 49 states; \$53M for new data of the remaining 85% of Alaska. “

It is worth noting that while this 2012 report indicates that the costs for Guam, America Samoa and the Northern Marianas may be “potentially unaffordable”, future space based technologies may open up options for acquisitions in these areas.

The costs included on the 3DEP state based fact sheets are calculated on the national average of \$335 per square mile. When using an average cost it is understood that the costs for some areas of the country will be lower and some will be higher. The deployment costs, unique terrain and dense vegetation over portions of Hawaii will drive up costs.

Applicants interested in lidar acquisition over Hawaii are encouraged to work with a Geospatial Products and Services (GPSC) representative to estimate costs for any potential acquisition project.

8. *Are North Carolina and/or Oregon participating in 3DEP to help fund repeated passes of their statewide coverages?*

Both North Carolina and Oregon are active state participants in the 3DEP program. While NC is on their second round of statewide coverage (the first round does not meet current 3DEP standards), most of the OR acquisitions represent areas that do not have any lidar data. It is important to note that both North Carolina and Oregon have very strong state lidar programs that oversee the acquisitions in their states. While they have applied for 3DEP funding to support those acquisitions, the strength of their programs comes from commitment and leadership within their state programs.

9. *Does the 3DEP program include the acquisition of bathymetric (or combined topo/bathy) lidar?*

The acquisition of bathymetric data is not currently a part of 3DEP. For coastal areas 3DEP works with the Interagency Working Group on Coastal and Ocean Mapping (IWGOCM) to identify areas of mutual interest for combined or coordinated acquisitions. 3DEP has just begun exploring the requirements and available technologies to secure inland bathymetry. However it must be noted that the 3DEP is not currently funded to acquire bathymetric data.

10. *What is the basis for the 8 year refresh cycle for 3DEP?*

3DEP is based on the results of the National Enhanced Elevation Assessment (NEEA) which indicated an optimal benefit to cost ratio for QL2 data collected over 8 years to complete national coverage. The 8 year coverage is funding dependent. 3DEP and our funding partners have not yet reached the funding levels required to achieve this goal.

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*11. Is there still a push for national 3DEP Coverage?*

Yes, the goal of 3DEP is to acquire QL2 data over the conterminous United States and QL5 IFSAR data over Alaska. There is a requirement for higher quality data in selected areas in Alaska. The acquisition strategy for the islands and territories has not yet been fully defined. It is expected that the 3DEP program will continue to evolve as a result of new technologies for data acquisition and the evolution and/or redefinition of requirements.

**FY14 FY15 BAA (Previous BAA Cycle)**

*12. Will not yet awarded FY14/FY15 proposals remain in the queue for end of year funds?*

All FY14/15 funds have been allocated. The program is no longer considering any additional proposals submitted under the FY14/15 BAA. Applicants whose proposals did not receive funding in FY14/15 are welcome to submit a new proposal against the FY15/16 BAA.

*13. Will the new 3DEP BAA FAQ include info from the three FAQ's from last year located at the following sites:*

> <https://www.fbo.gov/utills/view?id=17f844f50fc676cb08041d5a83915aa2>  
> <https://www.fbo.gov/utills/view?id=f4e1a3ad915d72d04c5858d6b9b40eb0>  
> <https://www.fbo.gov/utills/view?id=306f3ea04f88ac5501a1cc651a403851?>  
*Can all the FAQ info be consolidated into a single, easy to use location?*

The 3DEP program continues to evolve. As appropriate we will incorporate Q&As from the set of FY14 FAQs, however some may no longer be relevant. Applicants should refer to the current sets of FAQs. Our initial FAQs will be tied to the forum within which they were asked, however the goal will be to consolidate the FAQs into a single set as update as appropriate.

**FY15 FY16 BAA Timeline**

*14. Can the timeline be accelerated? Partners would like to confirm awards in November to allow sufficient time to plan for Spring 2016 acquisitions? Can the timeline be adjusted to better support late fall and early winter acquisitions?*

Full proposals are due on October 25, 2015; we anticipate that the first awards will be announced at the end of November. The deadlines defined in the FY15/FY16 BAA are defined based on the federal budget cycle, centered around the October 1 - September 30th funding cycle. If the USGS begins the FY on a CR, the availability of 3DEP funding may not yet be fully defined nor available to issue awards in support of BAA proposals. As the program continues to evolve the 3DEP program may widen the submission window to include submission dates more in sync with state and local funding cycles.

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**FY15 FY16 BAA Funding**

*15. What kind of funding is available and what are the requirements?*

The FY16 funding will be defined in the federal budget which has not yet been finalized. In FY15, the USGS and our 3DEP funding partners (FEMA, NRCS) contributed over \$10,000,000 in support of BAA projects. Project awards ranged from \$61,000 to \$1,325,000 with an average award of \$355,000. On average 3DEP provided 36% of the cost of a project, the applicants' provided an average cost share of 64%.

*16. Which federal agencies are contributing funds to 3DEP to fund BAA awards?*

USGS, FEMA, and NRCS, are providing funds directly to the USGS to support BAA awards. Other federal agencies have participated as a funding partner in BAA proposals.

*17. Can USGS Science teams contribute funds to 3DEP proposed areas?*

USGS science centers, mission areas and regions can contribute funds to a BAA project, however, they cannot be a part of an actual BAA proposal as acquisition policy prohibits us from "awarding money to ourselves". The USGS National Geospatial Program (NGP) will use internal business practices to make contact with each of the USGS POCs, the USGS mission areas and the regions who have submitted a project AOI to determine if project funding exist. If project funding exist these funds would be added on as part of the 3DEP award.

*18. If a federal agency (e.g., FEMA, NRCS) has funds, and has a specific area of interest for lidar, and has identified state and local partners, should they put the funds into the 3DEP pool and hope that the project wins an award, or should they follow another path to be sure their lidar funds and their partner funds are used for their required area?*

Applicants submit proposals to the BAA to request project funds in support of their area of interest. Federal, state and local partners may collectively submit a proposal to the USGS requesting 3DEP funds. Federal agencies (and their proposed funds) listed as a contribution to a specific project will only be considered as input to that specific project. Federal agencies also have the ability to provide funds to the USGS to apply to any number of projects that overlap with their areas of interest.

*19. Can a 3DEP award be matched with other federal funds, e.g. if the local NRCS office makes a proposal or if a state or local group uses NRCS funds as part of their proposal?*

The BAA offers two contract options for data acquisition. Applicants may propose to use the USGS Geospatial Products and Services Contracts or they may request financial assistance (by means of a cooperative agreement) to support a contract vehicle that the applicant manages and directly oversees. The matching funds rules differ slightly for these two options. The options and the restrictions are described in the BAA IV. Eligibility Information B. Cost Share, Minimum Non-Federal Match for Cooperative Agreements, Project Scope. Within these guidelines the 3DEP program encourages

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federal agencies to apply directly or to be a part of group of partners pooling their resources in a BAA proposal.

20. *Is it advantageous to partner in an AOI that already has multiple agency contributions or would a better strategy be to propose an area where no potential partnership funds were planned or committed.*

The FY15/16 BAA includes the criteria Project Cost and Cost Share. Preference is given to applicants that offer larger contributions to the total cost of the project. A second criteria is Areal Extent - larger projects better. Pooling resources with other funding partners to maximize the proposed cost share and to maximize the project area will address these project criteria.

21. *Is there an estimated cost for QL1 lidar?*

The cost of QL1 data varies widely between geographic areas. Those interested in receiving an estimate for QL1 data over a specific geographic area should work with a Geospatial Products and Services (GPSC) representative ([gpsc@usgs.gov](mailto:gpsc@usgs.gov)) to define a cost estimate specific to your geographic area of interest.

22. *Can the USGS Geospatial Products and Services Contract (GPSC) be used to contract projects that are outside of the BAA process?*

The GPSC is offered as a service for acquiring elevation data for external organizations who are not seeking additional funding. Information on this service can be found at: ([http://geodatacontracts.er.usgs.gov/gpsc\\_information\\_sheet.html](http://geodatacontracts.er.usgs.gov/gpsc_information_sheet.html))

23. *If a private entity has 2015 lidar in hand that meets 3DEP specs and is willing to share it, is USGS able to include the value of that data as a local "match" in the 3DEP proposal?*

Yes. The 3DEP program will need to work with the applicant to figure out how to represent this in the proposal. A generic example of how to include this type of information within a proposal would then be made available to all. It is important to note that the project will still be evaluated against the full set of criteria included in proposal evaluation and ranked against other submitted proposals.

### **FY15 FY16 BAA Criteria**

24. *When developing an AOI, should we exclude areas that have existing data that is other than QL2 (such as QL 3 or 4)?*

The BAA selection criteria states that areas with no lidar coverage will receive consideration over areas that have recent non-3DEP Quality lidar data. However this is only one of the selection criteria. If an applicant has a requirement for new data over an area where non-3DEP quality data currently exists and has partnership funds to support

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the acquisition they are welcome to submit the proposal. The proposal will be weighed and scored against all criteria included within the BAA and against all other submissions.

25. *How will federal requirements factor into award decisions? Do multiple overlaps rate higher and how much?*

Projects with geographic overlap with 3DEP FY16 Federal Areas of Interest or geographic overlap with the Agency Specific FY16 High Priority Areas of Interest (attachments C or D) are given additional consideration. This criteria is referenced in the BAA VI. A. 3.

26. *Do partner funds need to be committed at the time of proposal submission?*

The FY15/16 BAA includes the criteria "maturity of applicant's proposal and maturity of designated funding sources". Applicant will be asked to identify the current availability of funding sources listed within the application. If the funding source is listed as pending, the applicant must provide a date by when the funding decision will be made. Award decisions may be delayed until such time as funding decisions have been made.

27. *To what degree, if at all, will state-specific elevation strategic plans be used or considered in the selection of FY15 projects?*

While there is no specific criteria (in the FY15/16 BAA) that provides a direct score for states with strategic plans, the plans may figure into the criteria: maturity of applicant's proposal and maturity of designated funding sources if a state strategic plans includes references to funding sources and funding strategies. The 3DEP program wishes to move towards a more strategic approach for national acquisition. In this process the 3DEP program will work with states to determine timeframes and acquisition strategies that would maximize a state's ability to contribute funds towards the acquisition of lidar data in their state.

28. *What type of feedback will be provided by the 3DEP program on pre-proposal submissions?*

The 3DEP program will provide feedback to those who submit pre-proposals. The competitive nature of the BAA requires that we provide equal feedback to all. All applicants will receive feedback on how your proposal rates against the predefined criteria.

### **FY15 FY16 Seasketch Viewer / Project Collector Tool**

29. *Is it possible to download a shapefile of the proposed "Areas Of Interest" that are viewable on Seasketch?*

Shapefiles for the federal areas of interest can be downloaded from the BAA resources page: <http://nationalmap.gov/3DEP/BAARReferenceMaterials.html>. There is no direct way to download shapefiles for public AOs. If an applicant is interested in a public area of

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interest, the 3DEP program suggests that you make use of the POC information within the project metadata to contact the owner of the project AOI to discuss. The status or geographic extent of the AOI may have changes since it was originally submitted.

*30. When is the deadline for submitting an AOI via the Project Collector Tool?*

There is no deadline for submitting information into Seasketch. Seasketch is a viewer designed to facilitate discussion among potential partners with similar areas of interest. The Seasketch viewer is a dynamic system. HOWEVER keep in mind that most interested partners will enter their information into Seasketch prior to the FY15 /FY16 deadlines for submitting either a pre-proposal or proposal to the BAA.

*31. Is submitting an AOI via the Project Collector Tool a requirement for submitting a proposal later?*

NO. The Project Collector Tool is designed as a tool to allow potential applicants to enter areas of interest into the Seasketch viewer that may help to identify others with similar areas of interest and may help identify funding partners with whom you can collaborate to submit a proposal. Applicants must follow the instructions included within the BAA to submit a proposal in response to the solicitation. Selected information is extracted from Seasketch and included within the BAA however the evaluation team does not refer to not pull any information directly from Seasketch during the evaluation of the proposals.

*32. Can any entity, e.g., towns, non-profits etc., also use this tool to get their Areas of Interest "on the map" to facilitate partnering?*

Participation is welcome from all levels of government, the private sector and nonprofit agencies.

*33. How do you upload a BAA related project AOI into Seasketch?*

Anyone can upload a project using the project collector tool (<https://www.geoplatform.gov/elevation/3DEP/Propose3DEPAOI>). It is important to note that Seasketch is a viewer used to identify other partners who may share your area of interest. If you wish to submit a request for funds you must apply to the BAA using the procedures outlined within the published solicitation.

*34. Is Seasketch updated in real or near-real time? If not how often are updates made (ie daily, weekly, etc.)?*

There are a number of ways that data is entered into Seasketch. Many federal agencies manage their own services, these services feed into the Seasketch viewer. Projects submitted through the public project collector tool require a minimal level of manual processing prior to being entered into the public service (maintained by the USGS) which is then viewable through the Seasketch viewer. Resource availability dictates how quickly the entry can be processed and made available.

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35. *Can federal requirements in SeaSketch be categorized better into*  
*(a) Have funds and will be flying*  
*(b) Strong interest but not yet confirmed*  
*(c) Good interest within next two or three years?*

Changes to the manner that the federal requirements are represented within Seasketch will not be made for the current BAA cycle. However, these are good suggestions and will be noted for future consideration in both the Seasketch viewer and the proposed replacement for Seasketch. The viewer will continue to evolve. User input is critical to defining system requirements.

36. *Is the 3DEP program open to feedback on improving the visualization of AOI's in Seasketch and what is the best medium for those suggestions? Can the SeaSketch tool add a background basemap with darker and more prominent county boundaries and even darker state boundaries? Can there be a basemap with watershed boundaries?*

The SeaSketch site has the following reference: For more information about this project, please contact Ashley Chappell, NOAA Integrated Ocean and Coastal Mapping Coordinator, at [ashley.chappell@noaa.gov](mailto:ashley.chappell@noaa.gov). The 3DEP program works directly with NOAA to continue to enhance the system to better serve the community of users.

Changes to the manner that the federal requirements and public areas of interest are represented within Seasketch will not be made for the current BAA cycle, however suggestions are always welcome and encouraged and will be noted for future consideration in both the Seasketch viewer and the proposed replacement for Seasketch. The Viewer will continue to evolve. User input is critical to defining system requirements.

37. *Where do we find POC information for project AOI entered in the Seasketch Viewer?*

Each area of interest entered into Seasketch included a request for POC information. While the POC information does maximize the value of the system and is critical to making connections with potential partners who share your area of interest, entry of areas of interest into this system is voluntary and we cannot require that POC information be entered.

38. *What about input into SeaSketch from Department of Defense agencies (including NGA)?*

The 3DEP program primarily works with federal civilian agencies. However we acknowledge that selected DOD agencies do have the requirement to acquire data over military installations as well as having a requirement to support domestic programs (such as HSIP, urban areas). The 3DEP program will reach out to these agencies to determine if / how they wish to interact with the 3DEP program. Many state agencies have established relationships with the military installations within their states and are familiar with their desire to engage in local acquisitions.

39. *Can federal agencies enter multiple polygons over the same or similar areas? Such as headquarter entries versus field or regional entries?*

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Internal federal coordination of project AOIs varied by agency. Some agencies had a single point of contact that reviewed all agency entries, deleted duplicates and in some cases pared down the request to the high priority areas of interest. Other agencies allowed any interested party to submit requirements, no coordination, no review. The 3DEP program did not review nor question federal agency entries. As a result some overlap of project AOIs between regional and national offices may have occurred.

*40. Is FEMA still participating in QL3 projects?*

FEMA is a BAA partner and as such any BAA award that FEMA funds will meet QL2 specs. FEMA documentation now specifies the USGS Base Lidar Specification as their minimum content standard for lidar acquisition.

*41. Can Seasketch be modified to show and highlight the FY2014 BAA projects, for example awarded projects showing metadata (value, POC, etc) and also the proposed AOIs that were not awarded for FY2014?*

The FY14 BAA projects selected for award are included on the 3DEP Status Graphics and in the "Existing Data" layer in Seasketch. The FY14 projects that did not receive awards were not made public.

*42. Can contractors or vendors provide input on collections that have already been made by vendors, making people aware of those collections?*

The goal of 3DEP is to acquire data where no publically available data currently exist. It would be a benefit to all to be aware of current data. If the data exist and is not in the current 3DEP holdings, the 3DEP program might be interested in securing the data for public consumption. Seasketch is not designed to host footprints of restricted data. The United States Interagency Elevation Inventory (USIEI) (<http://www.coast.noaa.gov/digitalcoast/tools/inventory>) does include and reference some restricted data.

### **3DEP Standards and Specifications, Products and Services**

*43. What specification does any new lidar acquired through 3DEP need to adhere to?*

All 3DEP projects must adhere to the current Lidar Base Specification V1.2, November 2014. This document can be viewed and downloaded from <http://pubs.usgs.gov/tm/11b4/>.

*44. When will the USGS Lidar Specification v-2.0 be released?*

The release of V-2 is scheduled for the summer of 2016.

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*45. Is intensity a 3DEP product available from National Map?*

The intensity image is not a product available from The National Map (TNM). However the lidar point cloud data is available and the Intensity Image can be derived from this data.

*46. What 3DEP products are made available through The National Map (TNM)?*

Please refer to: [http://nationalmap.gov/3dep\\_prodserv.html](http://nationalmap.gov/3dep_prodserv.html) for a list of the 3DEP Products and Services. Keep in mind that the USGS does make the source data available from which you can generate additional products.

**The National Map (TNM) Data Archive, Data Distribution, Products and Services**

*47. For data acquisitions funded through the BAA, who owns the data?*

3DEP BAA projects result in public domain data. The USGS will distribute all data through The National Map (TNM). Each funding partner will also receive a copy of the data and may archive and distribute the data as they see fit.

*48. Will somebody host the data related to 3DEP?*

USGS will host all 3DEP data and derivatives via *The National Map Viewer* and Download Platform (<http://nationalmap.gov/viewer.html>).