



THE APPRAISAL FOUNDATION

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Standards and Appraiser Qualifications*

*An Evaluation and Update to the Independent Review and Analysis of the
Department of the Interior's Valuation Methodologies Plan for the Land
Buy-Back Program for Tribal Nations*

CONTRACT NO. DISPX00196

TO

**US DEPARTMENT OF THE INTERIOR
OFFICE OF VALUATION SERVICES**

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About The Appraisal Foundation

The Appraisal Foundation is the nation’s foremost authority on the valuation profession. The organization sets the Congressionally-authorized standards and qualifications for real estate appraisers, and provides voluntary guidance on recognized valuation methods and techniques for all valuation professionals. This work advances the profession by ensuring appraisals are independent, consistent, and objective. More information on The Appraisal Foundation is available at www.appraisalfoundation.org.



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BACKGROUND AND SCOPE

On June 28, 2013, The Appraisal Foundation (the Foundation) provided a report to the US Department of the Interior (DOI), Office of Appraisal Services (OAS) that was the result of an independent review and analysis of the appraisal and valuation methodologies plan established specifically for valuations related to the Land Buy-Back Program (LPPB) for Tribal Nations. The 2013 review and resulting report focused on an objective evaluation of the Department of the Interior, Office of Appraisal Services valuation methodologies and Valuation Plan developed to value land acquisitions with fractionated interests. The review also included a determination of whether the Plan would produce appraisals in compliance with the *Uniform Standards of Professional Appraisal Practice* (USPAP). A copy of this report can be found in Appendix A of this report.

At the request of the DOI, the Foundation provided a proposal for an evaluation and update on the 2013 report. This review will evaluate the OAS compliance with the 2013 recommendations and also provide guidance on alternative means for completion of the assignment, if appropriate. The following are the results of this review, as contracted with the DOI.

The Foundation Review Team, in completing its external review of the valuation plan for the LBBP determined that the Valuation Plan, as presented by the OAS and the DOI, represents a methodologically sound approach to meeting the requirements of the LPPB. The Foundation recognized the significant magnitude of the valuation challenge with the LPPB, and reviewed the planned methodology, including extensive use of mass appraisal techniques. The Foundation concluded in their 2013 Report to the DOI: "We concur with OAS overall plan as summarized above and agree that mass appraisal methods should be used whenever possible because they would normally accommodate the most properties and thus be most efficient."

The Foundation's team also provided a set of recommendations to further strengthen the program, and support achievement of timely and quality appraised values from which offers can be determined for purposes of the LBBP. The recommendation and the Department's response are provided in the Detailed Summary and Conclusions that follow.

PROCESS/STAFF INTERVIEWED

The Foundation's Review Team (the Team) began by reviewing documentation and models provided by the DOI, OAS. The Team was asked to consider programs relating to mass appraisal and site specific appraisal relative to the LBBP. Two separate site visits were conducted in Albuquerque, New Mexico and interviews (phone and in-person) were held with relevant DOI staff. The Foundation's Team appreciates the open discussion and dialog about the program with LBBP personnel. During the course of this project, the Foundation Team members met with the following individuals, either in person or via conference call, associated with this effort.



Name	Position
John Ross	Director Office of Valuation Services U.S. Department of the Interior
Deborah Dumontier	Deputy Special Trustee Office of Special Trustee for American Indians U.S. Department of the Interior
Eldred Lesensee	Director, Office of Appraisal Services Office of the Special Trustee for American Indians U.S. Department of the Interior
Iris Crisman	Deputy Director, Land Buy-Back Program Valuations Office of Appraisal Services Office of the Special Trustee for American Indians U.S. Department of the Interior
Albert Ugas	Supervisory Review Appraiser Office of the Special Trustee for American Indians LBBP – Mass Appraisal Model Development and Maintenance U.S. Department of the Interior
Jacque Proffit	Detail Supervisory Review Appraiser Office of the Special Trustee for American Indians LBBP Appraisals Review and Approval U.S. Department of the Interior
Eric Griffin	Review Appraiser (Quality Assurance) Office of the Special Trustee for American Indians Office of Appraisal Services U.S. Department of the Interior
Steven Bottemiller	Deputy Director, Regional Operations Office of Appraisal Services Office of the Special Trustee for American Indians U.S. Department of the Interior



EXECUTIVE SUMMARY

Attached in Appendix A is the 2013 report from the Foundation, *Independent Review and Analysis of the Department of the Interior's Valuation Methodologies Plan for the Land Buy-Back Program for Tribal Nations*. The Foundation's Team has provided comments relative to the 2013 actionable items from the report provided in Appendix A. The 2015 review was completed in a two-step process: 1) a review of the mass appraisal process of the DOI/OAS actions and 2) a review conducted for the site specific appraisal process.

This report will have an executive/recommendations summary with those actions that are actionable from this review. A detailed report follows showing the 2015 review with comments on the prior actions, a detailed report of the site specific appraisal procedures and finally comments and suggestions from the discussions with staff.

Executive Summary with Actionable Items for Mass Appraisal

1. The DOI has done an outstanding job of managing the mass appraisal/site specific appraisal processes and hired an exceptional consultant that is known internationally and is the author of the *Mass Appraisal of Real Estate*. The mass appraisal consultant's availability to work with LBBP was discussed. A good business practice is to have a backup mass appraisal modeler to assist given the ambitious timetable. (number 4)
2. The backgrounds of the mass appraisal modelers will likely determine their preference for windows environment or command language environment to operate SPSS. Those with statistical background may prefer command language, whereas real estate appraisers may find SPSS windows environment easier to learn. When appraisers use the windows environment, they may concentrate on the concepts of analysis with statistical software. OAS should consider a policy that will permit both windows and command-language environments as acceptable methods for use in SPSS. (number 8)
3. Consider using GPS coordinates for locational enhancements. This will reduce the time to develop locational adjustments and eliminate the time needed to annually delineate fixed neighborhood boundaries. (number 10)
4. With sufficient timber sales transaction and timber data, the agency should consider incorporating timber variables in mass appraisal model. (number 15)
5. An update to the *Uniform Appraisal Standards for Federal Land Acquisitions* (Yellow Book) is in process with a project timeline in 2016. The DOI has requested that the US Department of Justice (DOJ) update the Yellow Book. The agency has submitted recommended changes to be considered. Most professional associations have adopted a specific timeframe for their specific appraisal books to be updated. DOI should request a standard timeline for the regular updating the Yellow Book. Also, the USPAP reference should be in general terms and not a specific USPAP edition. (number 16)
6. The agency is committed to ongoing professional development in mass appraisal. An example of this includes:



- The modeling consultant, while creating the models, is teaching the staff appraisers with an open dialog in a classroom setting.
- The agency has hired a mass appraisal consultant to teach International Association of Assessing Officers (IAAO) level 300 mass appraisal courses.
- Some IAAO classes have been offered to the staff.

Recommendation:

- This activity should be advanced to hands-on modeling style of education for the staff appraisers and modelers.
- The agency should continue education in SPSS modeling for real estate for their appraisers. The agency has hired a mass appraisal consultant to teach three sessions of SPSS modeling residential and vacant properties.
- The agency should consider attending the URISA/IAAO GIS/CAMA conference on an annual basis. This joint conference is the premier conference using the mass appraisal and GIS products. Staff should attend and present how the LBBP is using mass appraisal and GIS in this program. (number 17)

URISA: Urban Regional Information Systems Association

IAAO: International Association of Assessing Officers

Executive Summary with Actionable items for Site Specific Appraisals

1. Encourage more participation in bidding process through Federal Business Opportunities (Fed Biz Ops), Interior Business Center (IBC) and other resources.
2. Attempts should be made to assure all concerned that qualified appraisers are aware of the opportunity to quote on the proposals.
3. Continue working with IBC to streamline the bid advertising and award process for private contractors. It is our understanding that this process has already commenced.
4. Designate a staff person to walk potential vendors through the DUNS (Dun and Bradstreet) and SAM (System for Award Management) process in order to facilitate additional bids or quotes on proposals and assign sufficient site specific appraisals to make the government regulations cost effective. Additionally, RFPs for entire reservations should be considered.
5. Use of appraisals (both mass appraisal and site specific appraisal) developed for the Buy-Back Program for other purposes presents potential issues for the Program. The Program should develop a policy on how appraisals can be used to ensure that any use is consistent with the intended use for the Buy-Back Program, i.e., for acquisition purposes. Program Officials should make the decision on use, and concurrence in use outside the program from the appraiser of record is advisable.
6. Consideration might be given to expanding the quality control role so that the process is not dependent on one individual.



Comment on Sales information Storage

Staff has stated they maintain two software programs, ArcGIS and AgWare software, for storing sales information. A review of the systems used for storing sales information is now being completed. The use of two separate sales data files caused concern by the reviewers. Over time, trying to maintain two different software programs for the sales information is difficult and may not be the most efficient use of staff time and energy. A systems review is outside the scope of work for this review. We bring the issue forward for the agency to consider resolving in the near future.

DETAILED RECOMMENDATIONS AND CONCLUSIONS

Original Recommendation 1

The agency should clarify and state which properties will be considered in the Buy-Back program. We understand that the program will exclude reservations east of the Mississippi and in Alaska. We also understand that it will focus primarily on the purchase of as many fractional interests as possible. Accordingly, it is important to effective valuation management that the Buy-Back Program establish priorities and focus resources where they can be most effective in using the tools available to achieve program goals. For example, it was stated that 40 reservations have 85% of the fractional interests potentially subject to the program, and presumably the valuation priority will be on these reservations.

Department Response: The LBBP is cognizant of the need for priorities in meeting the goal of reducing fractionation by acquiring as many fractional interests as possible. While the most highly fractionated reservations will be given early attention, this over-riding goal must be balanced with other goals, including Tribal priorities in acquisition of properties. The DOI LBBP has identified the purchasable tracts, established ceiling amounts against which acquisitions can be made, and provided the TAAMS allotment lists to Tribes to enable them to identify the priority properties from the list of purchasable properties. OAS/LBBP division will receive a final priority property list for the top 40 reservations by October 31, 2013, after tribal selection of priorities have been completed.

August 2015 Review

The program developed by the DOI LBBP seems reasonable and has allowed input from the reservations. Also, they have continued to review the parcel list and refined those that should not be included after input from the reservation and from visual review using GIS.

Original Recommendation 2

The agency should review the definition of market value and standardize the definition.

Department Response: The Department agrees and will use the definition of market value established under the Uniform Appraisal Standards for Federal Land Acquisitions, which will be reflected in each property specific appraisal report and also in the Mass Appraisal Report and Mass Appraisal Statement of Value for a Single Property opinion of value.



August 2015 Review

In 2013, the Department had not decided on a definition of market value. They decided on the market definition used by the Department for other appraisals. This was a good decision and prevents any confusion within the Department or public of market value.

Original Recommendation 3

Consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered.

Department Response: The Buy-Back Program is engaging early with several tribes in the Great Plains/Rocky Mountain region, allowing for model testing for accuracy and validation of market consistency on several reservations prior to implementation on a broader scale.

August 2015 Review

There are 153 reservations to potentially be valued under the LBBP and they have identified 42 areas that will have mass appraisal and those areas that will have site specific appraisals. Currently, the project is to have the mass appraisal and site specific appraisals completed by 2020 (unless modified) and the other processes are to be completed within 2 additional years. The projected completion date is November 2022.

Original Recommendation 4

Consider retention of a consultant with expertise in mass appraisal to work with OAS on pilot models or at least review those models before the methodology is applied to other reservations.

Department Response: The Department agrees, and the OAS/LBBP will contract for a Multiple Regression Appraisal specialist for the pilot models to assure credibility and reliability of multiple regression mass appraisals.

August 2015 Review

The team has done an outstanding job managing the mass appraisal/site specific appraisal processes and hired an exceptional consultant that is known internationally and author of the *Mass Appraisal of Real Estate*. The mass appraisal consultant's availability to work with LBBP was discussed. A good business practice is to have a backup modeler to assist given the ambitious timetable.

Original Recommendation 5

In addition to considering confidence intervals as summarized in this report, when confidence intervals cannot be developed due to limited sales or the use of single property appraisal methods, the administration should consider any additional information from the appraisal report and data analysis in determining the offer value.

Department Response: The market value for a site specific appraisal is determined by the appraiser of record and derived in the development, analysis and final conclusion as to the opinion of value, which will be provided to the Buy-Back Program Office for use in determining offer prices. However, where multiple regression analysis is used in mass appraisals, and the data permits development of confidence intervals, the Office of Appraisal Services can also provide confidence intervals upon request for the information of the Buy-Back



Program Office. The LBBP administration will be provided copies of reports for site specific appraisals for use in determining a fair offer price.

August 2015 Review

The OAS staff has been able to collect sufficient valid sales transactions within and around the three projects reviewed by the Foundation's Team. OAS/LBBP administration has determined to use mass appraisal/site specific estimates of values and not used confidence intervals for determining offer prices. There are sufficient quality statistics calculated in the mass appraisal process to determine the quality of the estimates of value. OAS continues to study the use of confidence intervals in the LBBP.

Original Recommendation 6

The OAS should try to develop a program for data sharing with Farm Credit. This would help the agency to receive all of the sales available in each area.

Department Response: Farm Credit Services (FCS) has indicated they are not interested in getting the DUNS number and SAM registration necessary for bulk acquisition of data. However, the Department will continue to work with FCS to acquire data on a reservation-by-reservation basis and will encourage a change in policy with FCS.

August 2015 Review

FCS is informally cooperating with the LBBP. They have an appraisal division and sales data shared on a personal relationship basis. This has helped the LBBP. A memorandum of understanding has been executed for FSA data (Farm Services Agency within the US Department of Agriculture). This is not for sales data set but land use maps.

Original Recommendation 7

OAS should consider the use of statistical software such as SPSS to assist in mass appraisal analysis. Such software would also facilitate quality control analysis (sales ratio studies) and development of confidence intervals. Excel can also be used to the same ends, although OAS should understand the limitations of Excel for multiple regression analyses (MRA) and statistical analyses.

Department Response: The Department agrees and OAS/LBBP division has purchased two SPSS licences for use in developing mass appraisals and will further evaluate the SPSS application. Given that mass appraisals may be beneficial at all reservations applying the multiple regression analysis models using SPSS would ensure thorough and sound data analysis.

August 2015 Review

OAS/LBBP division uses ESRI's Geographic Information Systems to store property specific information; delineate market areas (used county boundaries in some mass appraisal models). SPSS statistical software is used to perform data analysis and market analysis of sales transactions/prices. These two systems are stand-alone software systems that permitted OAS to quickly begin this project, perform their analysis and value subject lands within and near six reservations in rapid succession. In the appraisal profession, this is a major accomplishment that should make OAS and the Department very proud.



Original Recommendation 8

Exploratory data analysis should be conducted prior to model development. This would include frequency distributions, graphs, and outlier identification. Outliers should be removed prior to model development and testing. Time trends in sales should also be explored at this point, although final adjustments can be, at the analyst's option, developed during modeling.

Department Response: The Department agrees, and has incorporated this recommendation into the plan in the section relative to Regression Analysis Model Calibration.

August 2015 Review

OAS/LBBP division mass appraisal modelers with the support of their mass appraisal consultant, performed data analysis and market analysis using various charts and graphs to identify outlier sales transactions, which were removed from the modeling files. Time series analysis explored the potential for time trending through graphs, charts and regression models.

The mass appraisal consultant has many years of experience in SPSS and multiple regression analysis. As such the mass appraisal consultant prefers to using SPSS command language to write syntax directly rather than SPSS's windows environment with the recording of the syntax. Windows environment syntax may easily be displayed in SPSS output reports, which may be easily copied and pasted into a syntax file document to record the command language procedures. Both methods are acceptable means of operating SPSS statistical software and will provide documentation of the data analysis and market analysis procedures used by the modelers.

Recommendation:

- The backgrounds of the mass appraisal modelers will likely determine their preference for windows environment or command language environment to operate SPSS. Those with statistical background may prefer command language, whereas real estate appraisers may find SPSS windows environment easier to learn. When appraisers use the windows environment, they may concentrate on the concepts of analysis with statistical software. OAS should consider a policy that will permit both windows and command-language environments as acceptable methods for use in SPSS.**

Original Recommendation 9

OAS should develop documentation and reporting requirements for staff to use in determining which valuation process and reporting procedure to use in different circumstances. The four methods are multiple regression analysis, benchmarks, project appraisal, and property specific appraisal.

Department Response: The Department agrees that the OAS will establish protocols to ensure that OAS Buy-Back Program staff comply with appraisal standards and best practices; those standards require that the appraiser determine the appropriate valuation process. An independent quality assurance review appraiser will oversee all OAS regions involved in the LBBP to ensure compliance with the Uniform Standards for Professional Appraisal Practice.



August 2015 Review

GIS stores property characteristics, sales transactions and geographic coordinates/shapes and has the capacity for so much more. AgWare is storing sales information and partial characteristics. For all appraisals, AgWare is the current generator of all agricultural sale index number (developed in early 2000). AgWare has been superseded by GIS in storage and usability. The Foundation's Team has been told by the OAS mass appraisers that GIS has the potential to store all documents and information currently stored in AgWare. Thus, AgWare is a duplication of data storage.

Recommendation:

- OAS should consider using GIS identification as primary number and consider GIS primary depository of data.

August 2015 Review

Site specific appraisals are stored as PDF for a short time before being sent to off-site storage. In the current PDF format, site specific appraisals are not available for statistical analysis.

Recommendation:

- Site specific appraisal information should be stored as property characteristic information in GIS. This would allow greater analysis of site specific appraisal information. Site specific appraisal values and characteristics could be used for future benchmark values (substitutes for sales transactions) for those areas that have limited sales information. A potential for improved efficiency is to permit site specific appraiser to access GIS sales information for their appraisal.

August 2015 Review

In some models OAS is using county boundaries and in others project OAS mass appraisers have delineated market area boundaries. We are impressed with the depth and breadth of the mass appraisal team's use of ESRI's ArcGIS products.

Recommendation:

- Since the mass appraisal team has so much data stored in ESRI's ArcGIS, OAS should consider using GPS coordinates for locational enhancements such as response services.

August 2015 Review

OAS has gathered a great deal of electronic data files from other federal agencies.

Recommendation:

- GIS should store extensive amounts of data and geographic information that is useful to all OAS appraisers. Consider adding Federal Emergency Management Agency (FEMA) digital flood maps and other federal agency's data and geographic files.



August 2015 Review

Quality control is being implemented within the OAS.

Recommendation:

- GIS and SPSS software should be considered for use in improving quality control of both mass appraisals and site specific appraisals.

Original Recommendation 10

OAS should maximize use of ArcGIS for data review, plotting the distribution of sales, defining neighborhoods and plotting estimated values and sales ratios.

Department Response: The Department agrees, and OAS is currently developing and implementing ArcGIS in the distribution of sales and defining neighborhoods. The plotting of estimated values as an analytical tool will be conducted within OAS as a part of the valuation process.

August 2015 Review

The Foundation's Team is impressed with OAS mass appraiser use of ArcGIS to store data and provide geographic maps. Some mass appraisal models are using county boundaries and others use delineated market area boundaries. New fixed boundary lines define current neighborhoods, which is the traditional and good means to develop location values and adjustments. However, fixed neighborhood boundaries always change over time. This requires maintenance to adjust shifting boundary lines. Many mass appraisers do not make the necessary annual changes to their fixed neighborhood boundaries.

Recommendation:

- Consider using GPS coordinates for locational enhancements. This will reduce the time to develop locational adjustments and eliminate the time needed to annually delineate fixed neighborhood boundaries.

Original Recommendation 11

OAS should use sales ratios to review the quality of values generated by mass appraisal methods (MRA or paired sales analysis with benchmark values). OAS should define performance goals based on IAAO ratio standards, e.g., median levels of appraisal of 0.90 to 1.10 and coefficients of dispersion (CODs) of no more than 20% to 30% depending on the homogeneity of markets.

Department Response: The Department agrees and OAS/LBBP division will use sales ratios to review the quality of values generated by mass appraisal methodologies. This recommendation has been incorporated into the Valuation Plan in the Regression Analysis Model Calibration section of the Plan document, including references to the IAAO ratio standards.

August 2015 Review

OAS/LBBP are using quality statistics in mass appraisal modeling that are recommended by the IAAO's Standard on Ratio Studies.



Original Recommendation 12

OAS should validate appraisals using a holdout group. The current plan calls for assigning the last available year of sales to the holdout group. The analyst would run sales ratios both for the model and holdout groups of sales. Assuming results meet required standards, the model would be re-run on the combined model and holdout groups to maximize sample size.

Department Response: The Department agrees. OAS/LBBP will follow this protocol and has incorporated appropriate language into the Valuation Plan.

August 2015 Review

OAS and its mass appraisal consultant decided to take advantage of having the latest sales in its mass appraisal modeling file as the models project forward to valuation date. This is a practical change in the recommendation. The holdout sample is developed from a random sample of all sales with consideration by acreage, time of sale and every 7th or 9th sale, which should make the holdout sample sales file similar to their model file. This requires extra efforts on the part of the mass appraisers that goes beyond the required minimum.

Original Recommendation 13

If there are a lack of sales and static market conditions, the agency should consider using a longer time period of sales (up to 10 years).

Department Response: The Department agrees. The OAS/LBBP will follow this protocol and has incorporated appropriate language into the Valuation Plan. OAS has been using longer time periods for sales in the regular work when necessary.

August 2015 Review

The table below shows the sales period and they have not had to reach the 10 year period. However, there could be specific reservations where the time period may have to reach the 10 year period. If there is a lack of sales, the agency should consider site specific appraisals as substitute in lieu of extending the time period. The site specific data would have to be input into the sales file being used with an appraisal value field being used as a sale data and sales price.

Project	Effective date of value	Time period of sales	Number of sales collected
Pine Ridge/Rosebud	11/15/13	1/2008 to 8/2013	381
Coeur d' Alene	8/1/14	1/2008 to 2/2014	316
Crow/ Northern Cheyenne	8/15/14	1/2008 to 12/2013	305
Sisseton	9/14	11/2008 to 5/2014	471
Standing Rock/ Cheyenne River	3/15	1/2009 to 12/2014	419
Fort Peck/Fort Belknap	4/15	1/2008 to 9/2014	239



Original Recommendation 14

OAS should standardize the definitions of recreation, open space, and agricultural use for each region based on highest and best use analyses.

Department Response: The Department agrees. The Office of Appraisal Services has developed data dictionaries reflecting the definitions and has incorporated appropriate language into the Valuation Plan.

August 2015 Review

The agency needs to develop standardized definitions for the various data inputs used in the system. If there are regional variations of the nomenclature, the agency needs to develop a “Rosetta Stone” so the definitions can be used locally but there is a standard definition in agency and computer system.

Original Recommendation 15

When value estimates incorporate the contribution of mineral values or timber values, Standards 1 and 2 will apply. Incorporating the values from a timber and or mineral value would not be applicable to a mass appraisal process, except when such contributions are nominal.

Department Response: The Department agrees; the OAS Valuation Plan reflects that B and S tracts with \$0 resource value can be used in mass appraisal, but where there is a contributory value from minerals or timber, another methodology will be employed.

August 2015 Review

Mineral values will be developed using site specific appraisal methods. Given the forestry agency extensive database and the forestry agency’s cooperation with OAS, OAS has amassed an extensive data file. OAS has its own timber consultant. As such, OAS has sufficient information for mass appraisal application.

Recommendation:

- **With sufficient timber sales transaction and timber data, the agency should consider incorporating timber variables in the mass appraisal model.**

Original Recommendation 16

The *Uniform Appraisal Standards for Federal Land Acquisitions* was last updated in 2000 and the current USPAP is the 2012-2013 version. There could be some inconsistency with the Yellow Book versus the current USPAP versions and the agency personnel involved with the group that established the Yellow Book should call for a review and possible update to the Yellow Book.

Department Response: The Department will bring The Appraisal Foundation’s recommendation to the attention of the Interagency group responsible for the Yellow Book.

August 2015 Review

An update to the *Uniform Appraisal Standards for Federal Land Acquisitions* (Yellow Book) is in process with a project timeline in 2016. The DOI has requested the US Department of Justice (DOJ) update the



Yellow Book. The agency has submitted recommended changes to be considered. Most professional associations have adopted a specific timeframe for their specific appraisal books to be updated. DOI should request a standard timeline for updating the Yellow Book. Also, the USPAP reference should be in general terms and not a specific USPAP edition.

Recommendation:

- **DOI should request a standard timeline for updating the Yellow Book. Also, the USPAP reference should be in general terms and not a specific USPAP edition.**

Original Recommendation 17

The staff should attend educational offerings from recognized mass appraisal programs.

Department Response: The Department is committed to ongoing professional development and the Office of Appraisal Services will handle this recommendation through including mass appraisal classes in the Individual development Plans for OAS/LBBP division staff.

August 2015 Review

The agency is committed to ongoing professional development in mass appraisal. An example of this includes:

- **The modeling consultant, while creating the models, is teaching the staff appraisers with an open dialog in a classroom setting.**
- **The agency has hired a mass appraisal consultant to teach International Association of Assessing Officers (IAAO) level 300 mass appraisal courses.**
- **Some IAAO classes have been offered to the staff.**

Recommendation:

- **This activity should be advanced to hands-on modeling style of education for the staff appraisers and modelers.**
- **The agency should continue education in SPSS modeling for real estate for their appraisers. The agency has hired a mass appraisal consultant to teach three sessions of SPSS modeling residential and vacant properties.**
- **The agency should consider attending the URISA/IAAO GIS/CAMA conference on an annual basis. This joint conference is the premier conference using the mass appraisal and GIS products. Staff should attend and present how the LBBP is using mass appraisal and GIS in this program.**

URISA: Urban Regional Information Systems Association

IAAO: International Association of Assessing Officers



Original Recommendation 18

The Agency should clarify and state which properties will be considered in the Buy-Back Program. Also they should make a decision on which reservations the mass appraisal process would not be beneficial.

Department Response: The Department agrees and is working through the Buy-Back Program Office to specify properties to be considered. Further, in consultations with OAS, decisions on where mass appraisal is appropriate will be considered as the land analysis is completed for each reservation.

August 2015 Review

A list has been provided to the Foundation's Team that indicates the appraisal process to be performed by reservation. The LBBP has published an implementation plan.

Original Recommendation 19

The Agency should consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered where adequate sales information exists.

Department Response: The Department agrees. See response to number 3.

Original Recommendation 20

OAS should report most probable market values based on the definition of market value established for the program, but should also consider providing additional information for use by the Buy-Back Program administration in establishing the offer amounts for fractional interests to be acquired. For example, confidence intervals developed during statistical analysis could provide guidance in setting offer amounts consistent with the program goals.

Department Response: The Department agrees. See response to number 5.

Additional Comments:

August 2015 Review

Most of the existing mass appraisal models are using binary variables, which is an acceptable format of regression modeling. There are other types of transformation for use in regression.

Recommendations:

- **For more control over the model coefficients, consider use of categorical variables with related percentage for sub-categorical variables.**
- **Example: In the early models, OAS mass appraisers uses several binary variables for pasture poor, fair, good and blank (assumed to be average). Categorical would use one variable for Pasture Quality with sub-categories of poor, fair, average and good. Percentage adjustments are initially applied by appraisers to these sub-categories and regression provides the market adjustment to the totality of these variables. Review of each models' results may indicate the adjustment of the sub-category starting values. This provides better control of the variable; may improve the significance of the**



variable; keeps the relative value of the sub-categories in place and avoids unexpected coefficients of some pasture quality binaries.

August 2015 Review

OAS's mass appraisers and their mass appraisal consultant have been using additive and multiplicative techniques in backward elimination regression. Linear regression has been around for many years, but is a very different conceptually from appraisal professionals' educational training.

Recommendation:

- OAS should study the IAAO's hybrid model formula that is supported by SPSS's non-linear regression program. These hybrid formulas has been used in mass appraisal for over twenty-five years and may be formulated to better support the appraisal background and training of OAS's appraisers. This may increase the understanding and acceptance of statistical models within the OAS's appraisal staff (site specific and mass appraisers).

August 2015 Review

Currently OAS mass appraisers and site specific appraisers are separate vertical operations that do not fully leverage the advantage of both appraiser groups.

Recommendation:

- Site Specific appraisal information may be added to GIS to provide benchmark value to support mass appraisal models. Mass appraisal database and model statistics may provide statistical support for all types of appraisals and provide the adjustment for site specific comparable sales reports. Statistical models may be used to identify valid sales transactions and support site specific appraisals with automated comparable sales grids. GIS may provide additional maps and aerials maps for appraisals

August 2015 Review

Usually there is a divide between appraisal disciplines: site specific appraisers and mass appraisers. OAS suffers from this same split.

Recommendation:

- With each reservation LBBP project, consider preliminary meeting between LBBP mass appraisers and regional supervisory appraisers to discuss model specifications and glean regional competency about the market area. This will help to reduce the divide between two appraisal disciplines within OAS. When results are available and before the release of the values, a preliminary meeting within OAS between RSA and LBBP may be useful to promote understanding between OAS two appraisal disciplines.



August 2015 Review

OAS mass appraisal modelers have been quickly learning statistical models developed by OAS mass appraisal consultant. OAS mass appraisers have completed several mass appraisal models on various reservations. Going from very limited information to sufficient information to create mass appraisal models with credible values is a great accomplishment. Early models did not keep the SPSS output reports as part of its model documentation. More recently, OAS mass appraisers are saving the SPSS output reports as part of its model documentation.

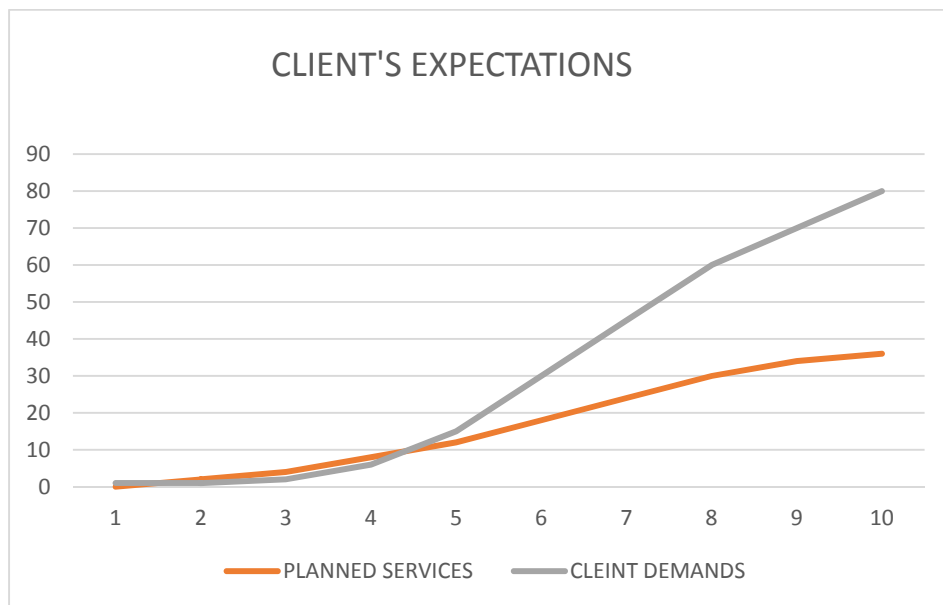
Recommendation:

- Continue the policy of keeping the SPSS output reports as support for documentation. This will be helpful to OAS's clients, who may wish to review documentation and value.

August 2015 Review

In all successful mass appraisal installation, the client's initial expectations are limited as they usually do not visualize all the potential of computerized databases, statistical models and GIS applications. The graph shows the planned client expectations versus client's future expectations. The vertical numbers represent growing expectations. The horizontal represents the number of years from the beginning of the project. This is a general chart developed to demonstrate the rapidly rising client expectation that clients may have once they see the initial results.

PLANNED VS CLIENTS EXPECTATION OVER TIME



Recommendation:

- Consider re-evaluation of initial plan to meet rising client's demand.



SITE SPECIFIC APPRAISAL REVIEW

The field review for the site specific appraisals in the Buy-Back Program of the OAS was conducted on August 24th and 25th, 2015. An initial meeting was held with Iris Crisman, Jacque Proffit, Eric Griffin, Eldred Lesensee, Deborah Dumontier and Steve Bottemiller. Prior to this meeting, materials were furnished to the procedures reviewer in order to gain an understanding of appraisal and review procedures in place for the program. The reviewer had perused the materials furnished and had a good working knowledge of the process prior to the meeting.

The face-to-face meeting with the above mentioned participants was a very productive and open meeting in which the entire process of determining when site specific appraisals were required, how the request for proposals and contractor process worked and then what procedures are in place for review and correction (if needed) of individual appraisals. The goal of the entire process is to obtain a credible appraisal, which can be used by the Buy-Back Program to carry out its function.

This discussion and prior review of materials furnished revealed initial difficulties encountered in obtaining acceptable appraisal products through third party processes. It is clear that the program must coordinate closely with parties involved in obtaining site specific appraisals, whether those parties are tribes, individual contract appraisers or external appraisal firms contracted to handle valuations. The appraisal process is clearly identified in the Valuation Policy document, which is publicly available. All parties involved in obtaining appraisals must adhere to the Valuation Policy document, and OAS Land Buy-Back Program must be allowed to work closely with tribes and contractors to ensure that requirements of the policy are met. To this end, training should be provided to program staff and to tribes which may choose to undertake appraisals to ensure compliance with the policy.

Failure to follow the policy can result in rejection of appraisals, extensive time involved in correcting appraisals to meet the policy and/or requiring the OAS Land Buy-Back Program and regional staff develop and write new appraisals in order to obtain credible appraisals meeting program requirements. The Program should consider implementing a requirement that OAS Land Buy-Back Program meet with tribes at the beginning of LBBP process, if valuations are to be provided by the tribe. OAS/LBBP would meet with the tribe a second time and the contractor prior to appraisals being initiated. Appraisers retained to do the work must be vetted by OAS and OAS will review the first appraisals completed early in the process to ensure compliance.

This entire experience affirms that adequate safeguards and quality controls are in place to ensure credible results and, if unable to obtain them through contract appraisers, staff can readily complete the process in a timely manner.

The contracting process and Scope of Work appear to be adequate to ensure credible contract results. The main problem encountered appears to be the lack of interest in contract appraisers to quote or bid the solicitation, and most new appraisals are being handled by staff, with review by non-involved staff. Ideas of ways to increase interest in quoting the solicitation were discussed and both LBBP and OAS personnel are agreeable to put education and notification procedures in place to assist in increased interest.



After initial attempts to outsource the appraisal function for site specific appraisals, it has been determined that the most cost effective and efficient process to achieve timely, credible results is to move to staff appraisers and reviewers. This move appears to have increased efficiency and timeliness of completion of appraisals. Emphasis on experience in property type valuations was discussed and this is the main criteria in selecting staff appraisers and reviewers. Staff has developed a calendar which shows a plan for completing the site specific appraisals according to the requirements of the program. After 2017, there will be an increase in the number of required site specific appraisals as well as an increase in utilizing contract appraisers where appropriate.

Appraisal methodology based on the *Uniform Standards of Professional Appraisal Practice (USPAP)* and the *Uniform Appraisal Standards for Federal Land Acquisition (Yellow Book)*, when appropriate, are being followed as required by the process.

Since streamlining the process, the main problem has been with releasing appraisal information prior to review of the report and authorization of release of the information. All concerned need to be aware that the function or intended use of the appraisal is for the LBBP and some agreement from the appraiser and reviewer should be obtained before using the report for any other purpose.

The mapping system utilized for the program is the ArcGIS system, which combines mapping procedures with a GIS system, making it a very powerful tool. Currently, the sales database is housed in the AgWare platform and all staff appraisers and reviewers are familiar with the process. Discussion was had with the meeting participants that a possibility is to move to housing the database on the ArcGIS system. Some staff expressed concern about the capabilities of developing sales sheets from the ArcGIS system equivalent to those available from the AgWare program. There are methods which allow for rapid transfer of data from ArcGIS to AgWare and the Foundation team strongly encourages this process to be set up and utilized in order to satisfy staff with a minimal education of a new system.

The review process encourages the primary goal of obtaining an acceptable report with credible results as opposed to rejecting out of hand appraisals that do not meet these criteria on the initial attempt. As noted above, staff appraisers have been sent to contracting offices in order to attempt to achieve an acceptable report.

Finally, the LBBP has created a quality assurance position which will oversee the entire process from property selection for site specific appraisal through the achievement of an acceptable work product. This is a good step toward increasing the overall efficiency of the process, as well as assuring quality and credible results. One position with a complete understanding of the entire process with the goal of increasing efficiency should help alleviate snags which have occurred in the past.

Recommendations from Site Specific Appraisal Review

- 1. Encourage more participation in bidding process through Federal Business Opportunities (Fed Biz Ops), Interior Business Center (IBC) and other resources.**
- 2. Attempts should be made to assure all concerned that qualified appraisers are aware of the opportunity to quote on the proposals.**



3. **Continue working with IBC to streamline the bid advertising and award process for private contractors. It is our understanding that this process has already commenced.**
4. **Designate a staff person to walk potential vendors through the DUNS (Dun and Bradstreet) and SAM (System for Award Management) process in order to facilitate additional bids or quotes on proposals and assign sufficient site specific appraisals to make the government regulations cost effective. Additionally, RFPs for entire reservations should be considered.**
5. **Use of appraisals (both mass appraisal and site specific appraisal) developed for the Buy-Back Program for other purposes presents potential issues for the Program. The Program should develop a policy on how appraisals can be used to ensure that any use is consistent with the intended use for the Buy-Back Program, i.e., for acquisition purposes. Program Officials should make the decision on use, and concurrence in use outside the program from the appraiser of record is advisable.**
6. **Consideration might be given to expanding the quality control role so that the process is not dependent on one individual.**





THE APPRAISAL FOUNDATION

*Authorized by Congress as the Source of Appraisal
Standards and Appraiser Qualifications*

Independent Review and Analysis of the Department of Interior's Valuation Methodologies Plan for the Land Buy Back Program for Tribal Nations

CONTRACT NO. **D13PX00092**

TO

**US DEPARTMENT OF INTERIOR
OFFICE OF VALUATION
SERVICES**

JUNE 28, 2013

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Independent Review and Analysis of the Department of Interior's Valuation Methodologies Plan for the Land Buy Back Program for Tribal Nations

1. EXECUTIVE SUMMARY

1.1 Overview

The Appraisal Foundation is a non-profit organization dedicated to the advancement of professional valuation. The Appraisal Foundation is authorized by the U.S. Congress to develop and promulgate the generally accepted standards of the appraisal profession and the minimum qualifications for real property appraisers. The Foundation accomplishes this mission through the work of three independent Boards, the Appraisal Practices Board (APB), the Appraisal Standards Board (ASB) and the Appraiser Qualifications Board (AQB). More information on the Foundation can be found in the appendix to this report.

The Appraisal Foundation was contacted by the United States Department of the Interior to review and analyze the Valuation Methodologies Plan for the Land Buy Back Program for Tribal Nations. The buy-back program was a condition of the Cobell Settlement which requires the Department of the Interior and its subsidiary agencies to develop a plan to buy back various interests of properties formally held by members of American Indian tribes and restore those interests to Tribal Trusts.

Because of the thousands of properties and property interests to be appraised, the Office of Appraisal Services of the Department of the Interior (OAS) concluded that a mass appraisal process would best meet the needs of the assignment given to them to accurately appraise these interests for purposes of a purchase offer to the owner of the interest. To ensure that the value methodologies were properly identified and developed, the Department of the Interior asked The Appraisal Foundation to find experts in the appraisal field, including specifically the mass appraisal field, and review the mass appraisal process that OAS intends to use and to provide an opinion of how the Plan complies with the *Uniform Standards of Professional Appraisal Practice* (USPAP).

The Appraisal Foundation contracted with a three-member team (the Team) who are experts in the field of mass appraisal and modeling and have combined experience in the field exceeding 90 years.



1.2 Policy Decisions/Recommendations

The significant findings and recommendations found throughout this report are summarized in the following list:

1. The agency should clarify and state which properties will be considered in the buy-back program. Also, the Agency must recognize that the mass appraisal process would not be beneficial or appropriate on all reservations given data availability, property characteristics, etc.
2. The Agency should review and standardize the definition of market value to be applied for this program.
3. The Agency should consider a pilot program at one reservation to test this process and use it as a prototype for the other reservations.
4. The Agency should consider retention of a consultant with expertise in mass appraisal to work with the Office of Appraisal Services (OAS) on pilot models or at least review those models before the methodology is applied to other reservations.
5. OAS should report most probable market values based on the definition of market value established for the program, but should also consider providing additional information for use by the Buy Back Program administration in establishing the offer amounts for fractional interests to be acquired. For example, confidence intervals developed during statistical analysis could provide guidance in setting offer amounts consistent with the program goals.
6. The OAS should try to develop a program for data sharing with Farm Credit to increase sales information inventory.
7. OAS should consider the use of specialized statistical software such as SPSS to assist in mass appraisal analysis.
8. Exploratory data analysis should be conducted prior to model development. This would include frequency distributions, graphs, and outlier identification.
9. OAS should require staff to document the basis for choosing valuation process(es) and reporting procedure to use in different circumstances. The four methods are Multiple Regression Analysis, benchmarks, Project Appraisal, and property specific appraisal.
10. OAS should maximize use of Arc GIS for data review, plotting the distribution of sales, defining neighborhoods, and plotting estimated values and sales ratios.



11. OAS should use sales ratios to review the quality of values generated by mass appraisal methods (MRA or paired sales analysis with benchmark values). OAS should define performance goals based on IAAO ratio standards, e.g., median levels of appraisal of 0.90 to 1.10 and coefficients of dispersion (CODs) of no more than 20% to 30% depending on the homogeneity of markets.
12. OAS should validate appraisals using a holdout group. The current plan calls for assigning the last available year of sales to the holdout group. The analyst would run sales ratios both for the model and holdout groups of sales. Assuming results meet required standards, the model would be rerun on the combined model and holdout groups to maximize sample size.
13. In static markets where few sales exist, it is permissible for the agency to use sales that are up to ten years old and still get accurate results.
14. OAS should standardize the definitions of recreation, open space, and agricultural use for each region based on highest and best use analyses.
15. Generally, when total property values include mineral values or timber values, Standards 1 and 2 will apply. However, there are circumstances where minerals/timber contributory value is minimal, and where the values from a timber and/or mineral value could be reflected in a mass appraisal process.
16. The *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA or “the Yellow Book”) was last updated in 2000 and the current USPAP is the 2012-2013 version. There could be some inconsistency with the Yellow Book and the current USPAP versions, and the agency should review the Yellow book for possible updating.
17. The staff should attend educational offerings from recognized mass appraisal programs.

Other explanations, findings and additional suggestions for improvements are included in the body of this report and additional recommendations can be found in section 7 of this report.

We appreciate the opportunity to assist the Department of the Interior in this project.

Paul Welcome, Lead Consultant
Robert Gloudemans
Richard Petree



2. SCOPE OF THE ASSIGNMENT

As agreed to in the contract, the assignment requires that we provide a written evaluation to the United States Department of the Interior, Office of Valuation Services. The written report will contain the conclusions and recommendations regarding the United States Department of Interior's Office of Appraisal Services plan for providing USPAP-compliant appraisals relative to the Land Buy Back Program for Tribal Nations.

This project will include an independent evaluation and analysis of the following:

1. The applicability of USPAP Standards 1, 2, 3 and 6 and any other relevant standards to the valuation of lands associated with the Land Buy Back Program for Tribal Nations.
2. Recommendations from the Contractor regarding the applicability of USPAP and any necessary recommendations to ensure that appraisals produced under the Plan are USPAP-complaint.
3. A thorough review of documentation supporting the Plan, the valuation methodologies proposed and further analysis of the government's mass appraisal system (valuation model) as it relates to mass appraisal, valuation model development, quality control, and ultimately appraisal reports generated through the valuation model.
4. At least one meeting with the Department of Interior for project orientation and overview. In addition, subsequent meetings or conference calls will be scheduled for status updates or to discuss the Plan and address issues and questions that arise from the review.
5. In addition, at least one site visit/field review (and additional as deemed necessary) is recommended by the Contractor. Based on its past experience, The Appraisal Foundation believes that first-hand experience in the field is essential to the review process. During the site visit(s), team members will meet with Department of Interior employees and perform a thorough review of the Plan and the valuation model. These meetings will focus on the goal of ensuring USPAP-compliance and sound methodology.

A written draft report will be produced for review of the Department of Interior to be followed by a final written report. The final written report will include a review and analysis of the valuation methodologies contained in the Plan as well as recommendations for areas of improvement; recommendations for additional safeguards for USPAP compliance and any other final conclusions.



3. BACKGROUND INFORMATION AND OBJECTIVES

3.1 History and Description of the Buy-Back Program

A suit was filed by Elouise Pepion Cobell, against the Department of the Interior on behalf of American Indians seeking to redress alleged breaches of trust by the United States, and its trustee delegates the Secretary of Interior, the Assistant Secretary of Interior-Indian Affairs, and the Secretary of the Treasury, regarding the management of Individual Indian Money (“IIM”) Accounts held on behalf of individual Indians. An agreement was reached (Cobell Settlement) which requires the United States government to provide monies to reacquire Indian lands. Many of the ownerships of Indian lands have been divided among heirs of former owners to the point that there are thousands of fractional interests. This was caused by many of the former owners dying intestate (without a will) and the ownerships being divided equally among children of the decedent. The OAS has developed methodologies to address various appraisal situations including mass appraisal, project reports and site specific analysis. OAS proposes to use mass appraisal techniques, project appraisal reports, and site specific appraisals. Site specific appraisal will be used when neither mass appraisals or project reports are applicable. The OAS desired to have their developed plan and methodologies reviewed by experts in the appraisal field, specifically mass appraisal, to ensure credible and defensible opinions of Market Value would be developed to support purchase offers to current owners of the fractionalized interests.

The Appraisal Foundation (TAF) has performed numerous studies with various government agencies to analyze the appraisal processes used by them. Since TAF is independent of government, it is considered the most knowledgeable and independent of consultants for such a project. DOI is very dedicated to receiving an independent review of their planned acquisition process to ensure that the owners of various interests of former Indian properties are given reasonable compensation for their asset.

3.2 Definitions and Acronyms

BIA: Bureau of Indian Affairs

DOI: The Department of the Interior of the United States

MASS APPRAISAL: the process of valuing a universe of properties as of given date using standards methodology, employing common data, and allowing statistical testing

MRA: Multiple regression analysis

OAS: Office of Appraisal Services, Office of the Special Trustee for American Indians, Department of the Interior

OST: Office of the Special Trustee for American Indians

TAF: The Appraisal Foundation

USPAP: *Uniform Standards of Professional Appraisal Practice*



4. PROJECT PROCESS

4.1 Documents Reviewed

The following documents were provided to The Appraisal Foundation by the Department of Interior, for the purposes of this assignment:

- *Setting the Offer Amount for Fractional Interests in Trust and Restricted Lands, Administrative Determinations and Policies, Land Buy-Back Program for Tribal Nations*
- *U.S. Department of Interior, Office of Special Trustee for American Indians, Land Buy Back Program for Tribal Nations, Real Estate Appraisal Methodologies*

In addition, The Appraisal Foundation provided Team Members with copies of the 2012-13 edition of the *Uniform Standards of Professional Appraisal Practice (USPAP)* and the *International Association of Assessing Officers, Standard on Mass Appraisal*.

4.2 Meetings and Conference Calls

The following official meetings and calls were held:

April 15, 2013	Project Kick-off, conference call
April 26, 2013	Conference call to discuss documents and issues with the assignment
April 30-May 1, 2013	Rapid City, South Dakota (Field Office Visit)
May 9, 2013	Conference call to discuss findings in South Dakota and decide how to proceed with project
May 20-22, 2013	Albuquerque, New Mexico (Field Office Visit)
May 31, 2013	Conference call to discuss findings in Albuquerque
June 7, 2013	Conference call to discuss draft report
June 10, 2013	Conference call to discuss draft report
June 26, 2013	Close-out conference call

In addition Foundation Team Members and Department of Interior Officials and Staff held conference calls and exchanged numerous communications to discuss findings and develop the report.



4.3 On Site Visits and Discussions with Agency Personnel

Members of the Team met with agency personnel April 30, May 1, May 20, May 21, and May 22 to view examples of the properties to be appraised and to review the appraisal plan and models developed. It was the intention of the Team to test the models prepared. When members of the Team met with agency personnel in Rapid City, the Team discovered that the models had not yet been prepared. The Team spent a full day discussing with the agency the best tools to use in preparing models and assisted in guiding them toward software and processes most typically used in mass appraisal. The bulk of the work in Albuquerque in late May dealt with a review of the modified appraisal plan and additional suggestions offered by the Team.

During the course of this project, the Team members met with the following individuals, either in person or via conference call, associated with this effort.

Name	Position
Eldred Lesansee	Director, OST-Office of Appraisal Services
John Ross	Director, Office of the Secretary, Office of Valuation Services
Iris Crisman	Deputy Director, OST-OAS, Land Buy-Back Program (LBBP) Valuations Division
Valerie Greene	Acting Deputy Director, OST-Office of Appraisal Services
Klint Impson	Regional Supervisory Appraiser, OST-OAS, Eastern Oklahoma Region
Thomas Young	Valuations Project Manager, OST-OAS, LBBP Valuations Division
Lorie Wagner	Senior Valuation Advisor, LBBP Program
John McClanahan	Program Manager, LBBP for Tribal Nations
Roxane Poupart	Regional Supervisory Appraiser, OST-OAS, Great Plains Region



5. VALUATION METHODOLOGY AND STANDARDS

5.1 Definition and Purpose of Appraisals

Appraisals are conducted for various purposes, including mortgages, condemnation, determination of investment value, and property assessment. The appraisal profession has distinguished two broad types of appraisal: single property appraisal, which involves estimation of value for a specific property, and mass appraisal, which is the valuation of all properties in a “universe” of properties, such as a city or county. Property tax assessors conduct mass appraisals. Private sector appraisers usually conduct single property appraisals, although they may conduct mass appraisals when a client requests multiple appraisals in locality of market area.

Although their scope is different, single property and mass appraisals both rely on accurate property characteristics and market data. As applicable, they also use the same basic valuation approaches: sales comparison, income, and cost. However, application of the approaches is different. For example, single property appraisals use a small number of “best” comparable sales, whereas mass appraisal uses all valid sales in a given time frame for the population being appraised. Although experience and sound appraisal judgment are equally essential, by necessity mass appraisal relies heavily on statistical analysis and testing.

5.2 Appraisal Standards

The Appraisal Foundation’s *Uniform Standards of Professional Appraisal Practice* (USPAP) includes standards for both single property and mass appraisals. Most relevant are USPAP Standards 1, 2, and 6. Standards 1 and 2 cover single property appraisal developing and reporting, respectively. Standard 6 addresses the development and reporting of mass appraisals.

The International Association of Assessing Officers (IAAO), a sponsoring organization of the Appraisal Foundation, has developed a series of standards on various aspects of assessment for property tax purposes. Especially relevant are:

- *Standard on Mass Appraisal of Real Property* (2013)
<http://www.iaao.org/uploads/StandardOnMassAppraisal.pdf>
- *Standard on Ratio Studies* (2013)
http://www.iaao.org/uploads/Standard_on_Ratio_Studies.pdf
- *Standard on Verification and Adjustment of Sales* (2010)
http://www.iaao.org/uploads/Verification_Adjustment_of_Sales.pdf



In addition, sponsoring organizations of The Appraisal Foundation and other appraisal organizations and universities have developed various courses, texts, and articles on property appraisal. The most relevant texts relating to mass appraisal are:

- *Mass Appraisal of Real Property* (IAAO, 1999)
- *Fundamentals of Mass Appraisal* (IAAO, 2011)
 - <http://www.iaao.org/store/SearchResults.aspx?Category=BOOKS>

5.3 Components of Effective Mass Appraisal

Mass appraisal begins with data collection and assembly and culminates in the generation of appraisals and valuation notices. The IAAO has developed specific criteria for evaluating the accuracy of mass appraisals for various property types. The following are key steps or components in the development of mass appraisals.

- **Collection of Property Characteristics Data.** All appraisals require accurate data for the property or properties being appraised. Relevant data includes those characteristics important in value determination. For agricultural properties this typically includes the relevant market area or “neighborhood,” soil type and classification, land area (acres), access, and the availability of water and public services. Property maps are also essential. In recent years aerial photos and geographic information systems (GIS) have proven to be useful tools in both the collection and review of property data.
- **Collection and Screening of Market Data.** In addition to property characteristics data, appraisers must collect and review relevant market data. Most relevant for land valuation is sales data, which must be carefully reviewed to separate open-market transfers from unrelated parties that provide valid indicators of market value from forced sales, sales of convenience, sales between related parties, and other transfers that do not provide valid indicators of market value. This should be done prior to the development of valuation models. Sources of sales data include real estate transfer documents, buyers and sellers, and third party sources such as multiple listing agencies and local appraisers, brokers, and financial institutions.
- **Exploratory Data Analysis.** Prior to valuation, mass appraisers (also termed “modelers”) study the distribution of available data and make a number of key determinations, including which appraisal methods and techniques are appropriate given the available data, how properties will be grouped or “stratified”, what property characteristics are relevant, and whether the market appears to be stable, appreciating, or declining. It is also common at this stage to identify, review, and potentially exclude “outliers” from further analysis.



- Model Development. Mass appraisers develop a “model” that, when applied to the characteristics of subject properties, result in value estimates. The model has the important element of consistency: two identical properties will always receive the same value and various differences in property features will always result in consistent value differences. There are two steps in model development. During model specification the modeler determines the structure of the model (e.g., linear regression model or matched pairs analysis) and what variables to test in the model. During model calibration the modeler determines base rates or values and appropriate adjustments for variables tested in the model (some variables may prove redundant or statistically insignificant). Mass appraisers typically conduct their analyses using spreadsheets of statistical software (the later facilitates multiple regression analysis).
- Model Testing. When satisfied with the rates, adjustments, and statistical measures produced by the model, the modeler will conduct more formal tests. The main tool in this regard is the ratio study in which estimated values are compared with sales prices adjusted for any change in price levels over the study period. IAAO has developed ratio study performance standards. The main statistics in this regard are the level of appraisal based on the median ratio and the uniformity of appraisal as measured by the coefficient of dispersion (COD). The median is simply the median ratio of estimated values to sales prices (adjusted as necessary for changes in price levels) and, according to IAAO standards, should be between 0.90 and 1.10. The coefficient of dispersion measures the average percentage deviation about the median ratio and, according to IAAO standards, should not exceed 25% for vacant land. If these standards are not met, the modeler should critically review the model and make any indicated refinements.

Particularly when a mass appraisal program is being used for the first time or new methods are being used, it is also considered good practice to set aside a holdout sample of sales. These sales will be used to test but not develop the model. If ratio study statistics are acceptable for both the model group and holdout group, the two can be combined and a final model calibrated using the full set of available, validated sales.

- Value Review. Once the model has been validated through the ratio study, staff will review individual values for reasonableness and consistency. This can include desktop review, perhaps including GIS and aerial photos, or drive-by inspections. Values that are out of line with similar or surrounding properties are usually attributable to data errors and require data corrections. Patterns of under-appraisals or over-appraisals can signal breakdowns in the model, perhaps due to failure to include a relevant property attribute, and may require model refinements.



- **Valuation Reporting.** The final step in mass appraisal is to communicate results to the client and any intended users. In valuations made for property tax purposes this involves providing the owner with a value notice that provides a brief description of the property, the reason for the notice, and the new value (usually the prior value is also shown). Good practice also dictates that the mass appraisal agency prepare and retain documentation explaining how values were developed. The agency should be able to replicate values (via the model) and apply the model to corrected data as necessary. Invariably some property owners will question or object to their value. If formally challenged, the agency should stand ready to explain and support the value. Sales of similar properties are considered the best evidence of value for this purpose.

5.4 Components of Effective Single Property Appraisal

Effective single property appraisal also begins with the collection of relevant data for the subject property and the assembly of relevant market data, which for vacant parcels again involves sales data. The single property appraisers will analyze the relevant market area or neighborhood and identify sales most similar in location and physical attributes to the subject property. Based largely on matched pairs analysis, the appraiser will determine appropriate adjustments for differences between the subject and “comps” and adjust sales prices of the comps to recognize these differences. The appraiser evaluates the adjusted prices and required adjustments and determines the weight to afford each sale. Although all are considered, primary weight is often afforded to the most similar or “best” comp.

As set out in USPAP Standard 2, the single property appraiser develops a report documenting the data used, analyses conducted, and conclusion of value. Because a separate analysis is conducted for each subject property and individual reports must be prepared, single property appraisals are necessarily more time-consuming and expensive on a per parcel basis than mass appraisals. In the case of a project appraisal or a site specific appraisal, the report would reference USPAP Standards 1 and 2.

Obviously both mass and single property appraisals are appropriate or best suited to different circumstances. Single property appraisals are appropriate for unique or special purpose properties, as well as all cases in which the appraisal assignment calls for the appraisal of a single property. Mass appraisals are appropriate when a large number of properties in a given market are to be appraised as of a common date using common data and procedures.

5.5 Appraisal Report

The DOI should have standard appraisal reports that reference appropriate appraisal standards. The mass appraisal report should reference Standard 6 reporting and all references should only use Standard 6 mass appraisal development and reporting. Project Appraisal Reports, and site specific appraisals should reference Standards 1 and 2. The proposed Mass Appraisal draft



report references Standard 1 and 2 and Standard 6. This would be improper and the final report should only be referencing Standard 6 language.

The mass appraisal report should describe specification and calibration of the models, including the properties covered, data and methodology used, and testing/quality control procedures. It should describe the distribution of final values (e.g., average value and range) and present the ratio study statistics. It should also describe any problems encountered, such as too few sales for a given area or type, and how these problems were addressed. There should be one mass appraisal report for each model developed. If more than one model was required for a reservation, a report should be prepared for each. This report is not single-property specific, but describes the methodology, data, and results used to value properties.

After discussion with OAS staff, they suggested the following nomenclature for the individual property reports: *Mass Appraisal Statement of Value*. We do not object to this title and it appears it would be consistent with USPAP standards. This mass appraisal statement of value should reference Standard 6 of USPAP (and not Standards 1 and 2).

USPAP Standard 6 is silent about the report of a single property from a mass appraisal assignment. However there is guidance in Advisory Opinion 32 for reporting. The 2012-2013 USPAP Page A-109 starting with line 72. *"An appraiser may be asked to communicate the assignment results for a single property that was appraised as part of a mass appraisal assignment. USPAP does not address this specific circumstance."* We believe the new title would make it clear to everyone what the Agency is trying to communicate and the format would be helpful with the communication of value using Standard 6.

It is the team's position that some changes to the report should be done to better communicate the results. First, the Hypothetical and Extraordinary assumptions should be in its own section and printed in bold type due to the unique assumptions and hypothetical conditions. Second, the Department of Interior market value definition should be written in the report rather than referred to in another document. Finally, the project team would suggest the Department of the Interior communicate in person or by written communication to the Appraisal Standards Board asking them to review and address a possible standard format to communicate individual property values using a Standard 6 report for non-ad valorem activities.

In the case of project or site specific appraisals, the appraisals will use Standard 2 report format



6. REVIEW OF PLANNED METHODOLOGY

6.1 Summary of Planned Methodology

The Office of Appraisal Services' most recent document on planned methodologies is dated May 16, 2013. The project team discussed the document and suggested refinements during the Albuquerque site visit on May 21-22. The following summary and evaluation is based on the May 16 document and related discussions in Albuquerque. The document sets forth three planned methodologies: mass appraisals, project appraisals, and single property appraisals.

Mass Appraisal

Because of its efficiencies, mass appraisal is the preferred methodology. Mass appraisals will be conducted when there is an active market with sufficient sales and reasonably consistent land uses. It will not be used when timber or mineral values must be determined. Mass appraisals could take two forms: an MRA model or matched pairs analysis. If matched pairs analysis is used, staff will identify and value a benchmark property, which will serve as the starting point in the appraisal of other properties in the market area or neighborhood. In either case, mass appraisals will use approximately five years of sales. Sales from the most recent year will be set aside in a holdout group. Once the model is developed, sales ratio statistics will be calculated for both the model and holdout sales and, if results meet IAAO standards, a final model will be calibrated using both groups of sales. If, after attempted modifications and refinements, IAAO standards cannot be attained, mass appraisal will not be used.

Mass appraisals will result in restricted use appraisals that fall under USPAP Standard 6. Staff will prepare (a) a mass appraisal report documenting the methodology used and overall results and (b) statements of value for each fractionated interest included in the relevant appraisal population.

Project Appraisal

Project appraisals may be conducted when there are a number of parcels and adequate sales data in a well-defined, homogeneous market area or neighborhood. According to the May 16 document, project appraisals will employ the same two appraisal methodologies (MRA and matched pairs analysis) and validation procedures (sales ratios with a holdout groups) as mass appraisals.

The distinguishing difference between project and mass appraisals appears to be in reporting. Whereas mass appraisals will result in a methodology report and individual statements of value, project appraisals will generate a single restricted use appraisal report that sets out the



resulting values of all properties (ownership interests) included in the project. The report will be subject to USPAP pursuant to Section D-17 (Project Appraisal Reports) of the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA) published in 2000. OAS has conducted many such appraisals in the past and is familiar with the methodology and reporting requirements. Each project appraisal will be individually reviewed.

Property Specific Appraisal

Property specific appraisals will be conducted for unique, single properties that cannot be combined with other properties for analysis. It will employ traditional single property appraisal techniques, which may include the income approach if applicable.

Since property specific appraisals are subject to USPAP Standards 1 and 2, a separate valuation report must be prepared for each and, according to the May 16 document, “100% of property specific appraisal reports will be reviewed” (page 29). Since property specific appraisals are very time-consuming, OAS plans to conduct them only in special situations.

Properties with Timber or Mineral Value

OAS will conduct project or property specific appraisals for properties with marketable timber or mineral resource values. It will obtain estimated timber values from the Bureau of Indian Affairs (BIA) and estimated mineral values from the Office of Minerals Evaluation (OME).

6.2 Evaluation and Recommendations

We concur with OAS’ overall plan as summarized above and agree that mass appraisal methods should be used whenever possible because they would normally accommodate the most properties and thus be most efficient. Since appraisal methods for mass appraisals and project appraisals are the same, we surmise that mass appraisals will be particularly appropriate when there are enough sales to support MRA, which can accommodate large variations in land size and other property features as long as sales provide adequate coverage or representation. If sales are limited but sufficient to support matched pairs analysis, that technique would seem next best. Project appraisals appear appropriate when the properties to be appraised are highly similar but smaller in number.

In addition, there may be times (the Navajo reservation in Arizona was cited as a possible example) when market data are too limited or inconsistent to conduct either mass appraisals or project appraisals. In such cases we recommend that appraisers conduct interviews and examine whatever market data is available, including up to 10 years of sales, and develop a range of probable value. As with other mass appraisal analyses, the end result should be a mass appraisal report supplemented by individual statements of value.



The following table sets out and ranks the different appraisal options in the order in which we believe they should be considered based primarily on their relative efficiency. It also indicates applicable standards and reporting requirements. Of course, the most efficient methods are not necessarily the most accurate (option 3 is likely least accurate). If timber or mineral interests are involved, either a project or single property appraisal will be required regardless of efficiency.



Appraisal Options Ranked by Relative Efficiency

Method	Priority Based on Relative Efficiency	Notes; Subject Properties	Standard 6	Standards 1 and 2
<u>Mass</u> appraisal using MRA	1	Mass appraisal. Many subject properties and sales. QC based on sales ratio study and review of mass appraisal report.	Yes. Yields (a) mass appraisal report and (b) statements of value.	No
<u>Mass</u> appraisal using paired sales analysis and benchmark property	2	Mass appraisal. Many subject properties and sales. QC based on sales ratio study and review of mass appraisal report.	Yes. Yields (a) mass appraisal report and (b) statements of value.	No
<u>Mass</u> appraisal using available market data to develop a range of values per acre	3	Mass appraisal. Many subjects but few sales. QC based on available sales and review of project appraisal report.	Yes. Yields (a) mass appraisal report and (b) statements of value.	No
<u>Project</u> report based on MRA, paired sales analysis with benchmark value or qualitative analysis	4	Appraisal of highly similar properties may be based on limited but adequate sales or many subject properties and many sales. QC based on available sales and review of project appraisal report.	No. Yields a <u>project</u> appraisal report including individual value estimates.	Yes Subject to UASFLA Section D-17.
<u>Project</u> appraisal with timber or mineral value	5	Same as above but including timber or resources value.	No. Yields a project appraisal report with individual value estimates.	Yes. Subject to UASFLA Sections A-19, B-2, B-13, D-4.
<u>Single</u> property appraisal	6	Single subject property. QC based on review appraisals.	No	Yes. Yields Restricted Use Appraisal Report.
<u>Single</u> property appraisal with timber or mineral value	7	Same as above but including timber or resources value.	No	Yes. Yields Restricted Use Appraisal Report.



An advantage of the statistical analyses in a mass appraisal is the ability to determine confidence intervals for the appraised value established by the model. For example, where the data indicates a tightly defined market range, a 95% confidence interval can give a strong indication of the upper bound of value and the likelihood that a value is no greater than the upper bound is 97.5%. However, where there is a wide dispersion of values, it may be more appropriate to indicate that, and report, an 80% confidence interval. It is recommended that these confidence intervals be statistically derived and reported to the Buy Back Program for consideration in the offers to be made to acquire fractionated interests.

Fundamentally, the decision on the value to offer for an interest is an administrative decision. However, that decision should be based on sound estimates of market value and as much additional information, including confidence intervals, as can be provided given the data available to support the appraised value. Whatever value is administratively determined as the offer value must be defensible and derived from the appraised value and the additional information, and the process for establishing that offer value must be documented and consistent.

Since mass appraisal using MRA affords the greatest opportunity to generate objective, consistent appraisals that meet industry standards while maximizing efficiency, we recommend that OAS consider acquiring a statistical package, such as the Statistical Package for the Social Sciences (SPSS), an IBM product, to facilitate MRA and other statistical analyses. SPSS also contains a built-in ratio study option that can be used to generate ratio study statistics. Although spreadsheets can also be used, they are more cumbersome for such applications than statistical software. Also with respect to software, we underscore the important contributions that GIS can make to the project. Possible applications include plotting sales (as has already been done for the Rosebud and Pine Ridge reservations), defining neighborhoods and possibly selected location variables (e.g., road access), and plotting estimated values and sales ratios.

We also recommend that staff attend educational offerings from recognized mass appraisal programs, such as those offered by the International Association of Assessing Officers (IAAO)¹.

Finally, we strongly recommend that OAS test the proposed mass appraisal methodology and quality control procedures on one or two reservations. This will afford the chance to validate the methodology and make refinements before applying it to other reservations. We also see this as a valuable learning opportunity. It would be prudent to have the pilot projects reviewed

¹ The IAAO has educational offerings in mass appraisal known as the 300 series. It is currently updating the series. IAAO course 300, the first in the new series, covers the fundamentals of mass appraisal, including ratio studies. The next course, 331, further develops these concepts. It is expected to be "rolled out" at the upcoming annual IAAO Conference in late August. Subsequent courses will be using Excel and SPSS to demonstrate statistical analysis, including ratio studies and MRA. Other sources of mass appraisal education can also be explored.



externally for compliance with industry standards and to suggest additional improvements. As is well know, while proper planning is essential, the proof is in the actual execution and results.



7. CONCLUSIONS AND RECOMMENDATIONS

1. The agency should clarify and state which properties will be considered in the buy-back program. We understand that the program will exclude reservations east of the Mississippi and in Alaska. We also understand that it will focus primarily on the purchase of as many fractional interests as possible. “Accordingly, it is important to effective valuation management that the Buy-Back Program establish priorities and focus resources where they can be most effective in using the tools available to achieve program goals. For example, it t was stated that 40 reservations have 85% of the fractional interests potentially subject to the program, and presumably the valuation priority will be on these reservations.
2. The agency should review the definition of market value and standardize the definition.
3. Consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered.
4. Consider retention of a consultant with expertise in mass appraisal to work with OAS on pilot models or at least review those models before the methodology is applied to other reservations.
5. In addition to considering confidence intervals as summarized in this report, when confidence intervals cannot be developed due to limited sales or the use of single property appraisal methods, the administration should consider any additional information from the appraisal report and data analysis in determining the offer value.
6. The OAS should try to develop a program for data sharing with Farm Credit. This would help the agency to receive all of the sales available in each area.
7. OAS should consider the use of statistical software such as SPSS to assist in mass appraisal analysis. Such software would also facilitate quality control analysis (sales ratio studies) and development of confidence intervals. Excel can also be used be used to the same ends, although OAS should understand the limitations of Excel for multiple regression analyses (MRA) and statistical analyses. (old 10)
8. Exploratory data analysis should be conducted prior to model development. This would include frequency distributions, graphs, and outlier identification. Outliers should be removed prior to model development and testing. Time trends in sales should also be explored at this point, although final adjustments can be, at the analyst’s option, developed during modeling.



9. OAS should develop documentation and reporting requirements for staff to use in determining which valuation process and reporting procedure to use in different circumstances. The four methods are Multiple Regression Analysis, benchmarks, Project Appraisal, and property specific appraisal.
10. OAS should maximize use of Arc GIS for data review, plotting the distribution of sales, defining neighborhoods, and plotting estimated values and sales ratios.
11. OAS should use sales ratios to review the quality of values generated by mass appraisal methods (MRA or paired sales analysis with benchmark values). OAS should define performance goals based on IAAO ratio standards, e.g., median levels of appraisal of 0.90 to 1.10 and coefficients of dispersion (CODs) of no more than 20% to 30% depending on the homogeneity of markets.
12. OAS should validate appraisals using a holdout group. The current plan calls for assigning the last available year of sales to the holdout group. The analyst would run sales ratios both for the model and holdout groups of sales. Assuming results meet required standards, the model would be rerun on the combined model and holdout groups to maximize sample size.
13. If there are a lack of sales and static market conditions, the agency should consider using a longer time period of sales (up to 10 years).
14. OAS should standardize the definitions of recreation, open space, and agricultural use for each region based on highest and best use analyses.
15. When value estimates incorporate the contribution of mineral values or timber values, Standards 1 and 2 will apply. Incorporating the values from a timber and or mineral value would not be applicable to a mass appraisal process , except when such contributions are nominal.
16. The *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA or “the Yellow Book”) was last updated in 2000 and the current USPAP is the 2012-2013 version. There could be some inconsistency with the Yellow Book versus the current USPAP versions and the agency personnel involved with the group that established the Yellow Book should call for a review and possible update to the Yellow Book.
17. The staff should attend educational offerings from recognized mass appraisal programs.



18. The Agency should clarify and state which properties will be considered in the buy-back program. Also they should make a decision on which reservations the mass appraisal process would not be beneficial.
19. The Agency should consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered where adequate sales information exists.
20. OAS should report most probable market values based on the definition of market value established for the program, but should also consider providing additional information for use by the Buy Back Program administration in establishing the offer amounts for fractional interests to be acquired. For example, confidence intervals developed during statistical analysis could provide guidance in setting offer amounts consistent with the program goals.



8. APPENDICES

Appendix A - Team Member Biographies

Paul A. Welcome, Lead Consultant

Paul serves as the County Appraiser for Johnson County, Kansas. He holds a Certified Assessment Evaluator (CAE) designation from the International Association of Assessing Officers (IAAO), and a Registered Mass Appraiser (RMA) for the State of Kansas. On June 30, 2009, Paul became an Eminent Fellow of the Royal Institution of Chartered Surveyors (RICS). He previously held the designation of Accredited Senior Appraiser (ASA) by the American Society of Appraisers until December 30, 2011.

As County Appraiser in Johnson County, he manages a staff of 87 employees and the valuation and records for approximately 211,800 parcels with a 2011 valuation of approximately \$57 billion. Prior to coming to Kansas, Paul was the Deputy Chief Appraiser in Travis Central Appraisal District, Austin, Texas. He has worked as a fee appraiser and also served as the Associate Director for Valuations, State Property Tax Board in Austin, Texas.

Paul served a one-year term as the Chairman of the Board of Trustees of The Appraisal Foundation in 2009, and served as the Immediate Past Chair for 2010. He served as the Chair of the Strategic Planning Task Force for 2011-2012. He has served in various capacities with The Appraisal Foundation Board of Trustees since 2004. Paul is a past president (2002-2003) of the IAAO, and has served on diverse committees since 1995.

Johnson County has received the IAAO certification for Excellence in Assessment Administration in 2005 and recertified in 2010 under Paul's leadership. There are only 7 counties in the United States to achieve this level of assessment quality. The county has also qualified each year for the state of Kansas Property Valuation Division's statistical and procedural compliance audit.

Paul has received many awards, the most recent being the IAAO "2010 Presidential Citation" received in September 2010. In 2008, he was awarded IAAO's Clifford B. Allen Most Valuable Member award. He has taught and consulted for the Valuations Offices in London, England and Belfast, Northern Ireland, as well as serving as a National instructor for the IAAO. He is a member of the Kansas County Appraisers Association. In addition, he is an active member of the Overland Park South Rotary Club. He was the past chair of the "Jazz in the Woods" concert which has remained an annual free event and fundraiser for the community.

His military service was spent as a pilot in the United States Air Force. Paul's formal education was at Bowling Green State University in Bowling Green, Ohio where he completed



studies for both his Masters of Business Administration and Bachelors of Business Administration degrees.

Robert Gloudemans

Robert Gloudemans is a former Senior Research Associate for the International Association of Assessing Officers (IAAO) and Supervisor of Computer Assisted Appraisal and Equalization for the Arizona Department of Revenue. Mr. Gloudemans and Richard Almy are co-authors of the IAAO textbook, *Fundamentals of Mass Appraisal* (2011). He is the author of *Mass Appraisal of Real Property* (IAAO, 1999), a principal author and a senior technical editor of *Property Appraisal and Assessment Administration* (1990), and author or co-author of numerous other mass appraisal textbooks, articles, workbooks, and IAAO Standards. Mr. Gloudemans has taught IAAO and other courses and workshops on assessment administration, mass appraisal, and ratio studies in over thirty-five states and provinces and internationally. He has directed or participated in assessment consulting projects for over 100 government agencies, including major revaluation projects in Alberta, Arizona, Colorado, the District of Columbia, Florida, Iceland, Manitoba, Montana, Northern Ireland, Ontario, Tennessee, Saskatchewan, and Washington. Mr. Gloudemans specializes in mass appraisal model building, ratio studies, computer assisted appraisal, and related staff mentoring and training.

Richard Petree

Richard Petree is a native of Abilene, Texas, attending public schools there and completing Cooper High School. He remained in Abilene to complete his undergraduate studies at McMurry University. His majors include a BBA in Economics and General Business and in Secondary Education with teaching specialties in Economics and History.

Mr. Petree began his career at West Texas Utilities in 1970 working in Industrial Development. He left WTU to seek the elected position of County Tax Assessor Collector and was elected in 1976. He served two terms as the elected County Assessor and during his last term, he was named as the first Chief Appraiser of Taylor County. With the exception of a nine-month stint as Chief Appraiser in Travis County in 1988, Petree has remained as the Chief Appraiser of Taylor County. In 1988 he was presented the Earl Luna Award by the Texas Association of Appraisal Districts recognizing him as the outstanding Chief Appraiser in that year. He was recognized with the Excellence in Education award in 2004 by that same organization.

Mr. Petree has been a member of the International Association of Assessing Officers (IAAO) since 1981. He was elected to the Executive Board of IAAO in 2004. He has served on various committees of IAAO including Nominations, Awards, and Education. In 2010 he was awarded Member of the Year for IAAO. He has also been a member of the Texas Association of Assessing Officers



since 1977 and a member of the Texas Association of Appraisal Districts since 1982 where he has served in all office positions. He is a certified instructor for the State of Texas teaching various courses in appraisal, USPAP, ethics. He is an independent consultant to appraisal districts assisting them in problem solving. He has been the lead consultant to Bexar CAD, LaSalle CAD, Hunt CAD, Calhoun CAD, Stonewall CAD, Mitchell CAD and Grayson CAD. In his consultant role he has provided complete appraisal services to some of those districts including appraisal of rural land for both a market value and an agricultural use value. He has developed numerous schedules for land values and improvement values of housing, farm buildings, and commercial buildings utilizing all three approaches to value as the basis for those schedules. Mr. Petree's appraisal district received the Excellence in Assessment Administration from IAAO in 2012 and became the first appraisal district in Texas to receive the designation.



Appendix B - Contractor's Background

The Appraisal Foundation: An Overview

The Appraisal Foundation, a non-profit educational organization headquartered in Washington, DC, is uniquely qualified to perform this comprehensive, unbiased evaluation of the Valuation Methodologies for use in the Land Buy Back Program for Tribal Nations.

Below is a brief overview of the history of the creation of the Foundation as well as a summary of past contracted assignments with U.S. government agencies.

Mission and Objectives

The Appraisal Foundation is dedicated to promoting professionalism and ensuring public trust in the valuation profession. This is accomplished through the promulgation of standards, appraiser qualifications, and guidance regarding valuation methods and techniques.

The Appraisal Foundation, a non-profit educational organization dedicated to the advancement of professional valuation, was established in 1987 by the appraisal profession in the United States. In 1989 the U.S. Congress gave the organization specific authority relating to real property appraiser qualifications and appraisal standards.

Since its inception, the Foundation has worked to foster professionalism in appraising by:

- Establishing, improving, and promoting the *Uniform Standards of Professional Appraisal Practice (USPAP)*, the generally recognized standards of practice for real property, personal property, and business valuation professions;
- Improving the quality and consistency of USPAP education by developing *National USPAP Courses* and certifying qualified instructors to teach USPAP;
- Establishing qualification criteria for professional real property appraisers; and
- Disseminating information on USPAP and the *Real Property Appraiser Qualification Criteria* to the appraisal profession, state and federal government agencies, users of appraisal services, related industries and industry groups, and the general public.

The Appraisal Foundation serves as the parent organization for three independent boards: the Appraisal Practices Board (APB), the Appraiser Qualifications Board (AQB) and the Appraisal Standards Board (ASB). In addition, three advisory councils serve the Foundation: the Industry Advisory Council (IAC), The Appraisal Foundation Advisory Council (TAFAC) and the Valuers Global Forum (VGF).



Background

In the early 1980's, the crisis in the savings and loan industry highlighted the need to improve appraisal practices throughout the United States. The difficulties and losses experienced by many lending institutions illustrated the importance of ensuring that appraisals are based upon established, industry-recognized standards, free from outside pressures.

In 1986, nine leading professional appraisal organizations in the United States and Canada formed the Ad Hoc Committee on the Uniform Standards of Professional Appraisal Practice. Agreeing upon a generally accepted set of standards, the eight United States committee members adopted those standards and established The Appraisal Foundation in 1987 to implement the *Uniform Standards of Professional Appraisal Practice*. The Appraiser Qualifications Board was included in the Foundation structure to develop and promote meaningful criteria by which the competence of appraisers could be measured. The *Uniform Standards of Professional Appraisal Practice* was adopted by the Foundation's Appraisal Standards Board on January 30, 1989, and has since been recognized throughout the United States as the generally accepted standards of professional appraisal practice.

The Foundation is composed of organizations; there are no individual members of the Foundation. Today, through Sponsoring Organizations and the various groups belonging to the Advisory Councils, over one hundred organizations, corporations and government agencies are affiliated with The Appraisal Foundation.

Responsibilities

The Appraisal Foundation is headquartered in Washington, DC and is directed by a twenty-six member Board of Trustees. The primary functions of the Board of Trustees include appointing members to the Appraisal Practices Board (APB), the Appraiser Qualifications Board (AQB) AQB and the Appraisal Standards Board (ASB), as well as providing financial support and oversight of these boards.

Appraiser Qualifications Board (AQB)

The AQB establishes the qualification criteria for state licensing, certification and recertification of real property appraisers. FIRREA mandates that all state certified appraisers must meet the minimum education, experience and examination requirements promulgated by the AQB. In addition, examinations used by states for the certification of appraisers must be reviewed and approved by the AQB.



Appraisal Standards Board (ASB)

The ASB sets forth the rules for developing an appraisal and reporting its results through the *Uniform Standards of Professional Appraisal Practice* (USPAP). USPAP contains the recognized standards of practice for real estate, personal property and business appraisal.

FIRREA requires that real estate appraisals used in conjunction with federally related transactions are performed in accordance with USPAP. More than 85,000 state certified and licensed real property appraisers are currently required to adhere to USPAP by their respective state appraiser regulatory agencies. Many appraisers are also bound to comply with USPAP through affiliations with professional appraisal organizations.

The authority of USPAP extends beyond FIRREA. Since 1992, the Office of Management and Budget (OMB) has required federal land acquisition and direct lending agencies to use appraisals in conformance with USPAP. In addition, many states require appraisals performed for any purpose to be USPAP-compliant and completed by state certified or licensed appraisers.

With the 1989 enactment of the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA), Congress gave the AQB and the ASB considerable responsibilities.

Appraisal Practices Board (APB)

In 2010, the APB was added to The Appraisal Foundation structure. The APB is charged with identifying and issuing opinions on Recognized Valuation Methods and Techniques, which may apply to all disciplines within the appraisal profession. The APB offers voluntary guidance in topic areas which appraisers and users of appraisal services feel are the most pressing. The Board utilizes panels of Subject Matter Experts (SMEs), who are widely recognized individuals with expertise in the specific topic being considered, to research and detail all pertinent sources of existing information on the given topic. The APB vets these issues through a public exposure process and ultimately adopts guidance that may include more than one recognized method or technique that addresses the specific topic. Compliance with all guidance issued by the APB is entirely **voluntary**.

The Foundation's activities benefit the appraisal profession by functioning to increase the quality of appraisals and by addressing issues critical to the advancement of professional valuation. Users of appraisal services and consumers can feel confident that the Foundation is working to serve their needs and help protect their financial well-being.



Appendix C - Building Public Trust: The Appraisal Foundation's Relationship with Federal Government Agencies

The work of The Appraisal Foundation is important to all disciplines of the appraisal profession, as well as to the consumer public and government agencies. Consistent with its public charge, The Appraisal Foundation has been approached by various U.S. Government Agencies to provide an evaluation of their internal policies and procedures as well as compliance with the *Uniform Standards of Professional Appraisal Practice* (USPAP) and the *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA or the "Yellow Book").

In order to accommodate these requests, the Foundation assembles a team of the best and brightest that the profession has to offer to perform the project and the entire task is managed by the Foundation with oversight from the Board of Trustees.

The Appraisal Foundation is pleased to provide this service that benefits the various government agencies, the appraisal profession and the overall public good. A complete listing of past U.S. government projects is listed below.

United States Department of Agriculture, Forest Service

Evaluation of the Appraisal Organization of the USDA Forest Service

Supplemental Report on the Evaluation of the Appraisal Organization of the USDA Forest Service

March 28, 2000

The original report found the overall policies and procedures of the USDA Forest Service generally sound. Recommendations were made and implemented to safeguard the appraisal review process and to improve the efficiency of overall operations and to ensure the independence of appraisers.

The supplemental report was produced upon request from the Forest Service in response to the March 28, 2000 report and focused on appraiser instructions in the Forest Service Handbook with regard to recreational residence sites. The report recommended revision of the handbook in order to clarify instructions to appraisers.

United States Department of Agriculture, Forest Service

A Review of the Forest Service Guidelines in Compliance with the Cabin User Fee Fairness Act of 2000 (CUFFA)

April 18, 2000

The report found proposed appraisal guidelines from the Forest Service to its appraisers to be in accordance with the Cabin User Fee Fairness Act of 2000. Several suggestions were made to make the guidelines more consistent with the act and some overall minor edits were suggested.



Independent Review and Analysis of the Department of Interior's Valuation Methodologies Plan for the Land Buy Back Program for Tribal Nations, June 28, 2013

PAGE 30

United States Department of Interior, Bureau of Land Management

*Evaluation of the Appraisal Organization of the Department of Interior Bureau of Land Management
(Including a Special Evaluation of an Alternative Approach Used in St. George, Utah)*

October 9, 2002

This report discussed a number of deficiencies and discontinuities found in the appraisal organization of the Bureau of Land Management. As a result of this report, the Department of Interior took numerous steps to re-organize the appraisal organization function to eliminate the deficiencies outlined.

Office of Special Trustee for American Indians

Evaluation of the Appraisal Organization of the Office of Special Trustee for American Indians, Office of Appraisal Services

August 29, 2003

The results of this study found that the Office of Appraisal Services within the Office of Special Trustee for American Indians was working well overall with no reports of pressure being placed on staff or contract fee appraisers. Some minor recommendations were made with regard to policies and procedures, overall efficiency and staff training.

Department of the Interior, Minerals Management Service

Evaluation of the Department of Interior's Value Justification Process and Procedures Associated with Collier Resources Company Undiscovered Oil and Gas Interests in Florida

May 28, 2004

In this report, at the request by the Office of the Inspector General, the Foundation team applied the principles of the *Uniform Standards of Professional Appraisal Practice* (USPAP) and the *Uniform Appraisal Standards for Land Acquisitions* (UASFLA) to the evaluations in order to demonstrate the necessity of conformance to those standards.

United States Department of Agriculture, Natural Resources Conservation Service

Evaluation of the United States Department of Agriculture, Natural Resources Conservation Service Appraisal Policies and Procedures

November 30, 2007

This report found the overall policies and procedures of the USDA Natural Resources Conservation Services generally sound. Recommendations were made to safeguard the appraisal review process as well as the use of outside contract appraisers. In addition, some recommendations were suggested to improve the efficiency of overall operations and to ensure the independence of appraisers.



United States Department of Energy

Memorandum of Understanding signed by The Appraisal Foundation and the US Department of Energy

June 13, 2011

This Memorandum of Understanding (MOU) was engaged in June 2011 with The Appraisal Foundation and the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, to collaborate on a series of activities focusing on energy efficiencies and the valuation of green buildings. The MOU is effective for five years and includes the following collaborative activities:

- Engaging the appraisal community on energy efficiency and green valuations.
- Development of additional guidance from all three of the Foundation's independent Boards relating to applicability of the existing standards to the valuation of green buildings.
- Development of one or more databases, through the Department of Energy, to provide data on energy performance for specific building types and upgrades, to the valuation arena.
- Development of educational course curriculum, through the Department of Energy and based on the guidance of the Foundation's APB, relating to energy performance and sustainability in commercial buildings.



August 2015
Department of the Interior
Responses to Recommendations from The Appraisal Foundation
An Evaluation and Update to the Independent Review and Analysis of the Valuation
Methodologies Plan for the Land Buy Back Program for Tribal Nations

On June 28, 2013, The Appraisal Foundation (the Foundation) provided a report to the US Department of Interior (DOI), Office of Valuation Services (OVS) and Office of the Special Trustee for American Indians (OST), Office of Appraisal Services (OAS) that was the result of an independent review and analysis of the appraisal and valuation methodologies plan established specifically for valuations related to the Land Buy Back Program (LPPB) for Tribal Nations. The 2013 review and resulting report focused on an objective evaluation of the DOI/OST/Office of Appraisal Services valuation methodologies and valuation model developed to value land acquisitions with fractionated interests. The review also included a determination of whether the Plan would produce appraisals in compliance with the Uniform Standards of Professional Appraisal Practice (USPAP).

At the request of the US Department of the Interior, The Foundation provided a proposal for an evaluation and update on the 2013 report. This review evaluated the OAS compliance with the 2013 recommendations and also provided guidance on alternative means for completion of the assignment, if appropriate. The following are the results of this review, as contracted with the DOI.

The Foundation Review Team (the Team), in completing its external review of the valuation plan for the LBBP determined that the Valuation Plan, as presented by the OAS and the DOI, represents a methodologically sound approach to meeting the requirements of the LPPB. The Foundation recognized the significant magnitude of the valuation challenge with the LPPB, and reviewed the planned methodology, including extensive use of mass appraisal techniques. The Foundation concluded in their 2013 Report to the DOI: “We concur with OAS overall plan as summarized above and agree that mass appraisal methods should be used whenever possible because they would normally accommodate the most properties and thus be most efficient.”

With the 2015 review, the Team provided a set of recommendations to further strengthen the program, and support achievement of timely and quality appraised values from which offers can be determined for purposes of the LBBP.

The Team began by reviewing documentation and models provided by the DOI, OAS. The Team was asked to consider programs relating to mass appraisal and site specific appraisal relative to the LBBP. Two separate site visits were conducted in Albuquerque, New Mexico and interviews (phone and in-person) were held with relative relevant DOI staff.

The 2015 review was completed in a two-step process: 1) a review of the mass appraisal process of the DOI/BIA actions and 2) a review conducted for the site specific appraisal process.

The team reviewed the prior 2013 recommendations and then summarizes 1) those recommendations which have or are being accomplished by OAS and 2) those recommendations requiring additional actions and responses from the Department.

COMMENTS, RECOMMENDATIONS and RESPONSES

1. The agency should clarify and state which properties will be considered in the buy-back program. We understand that the program will exclude reservations east of the Mississippi and in Alaska. We also understand that it will focus primarily on the purchase of as many fractional interests as possible. “Accordingly, it is important to effective valuation management that the Buy-Back Program establish priorities and focus resources where they can be most effective in using the tools available to achieve program goals. For example, it was stated that 40 reservations have 85% of the fractional interests potentially subject to the program, and presumably the valuation priority will be on these reservations.

2013-Department response: The LBBP is cognizant of the need for priorities in meeting the goal of reducing fractionation by acquiring as many fractional interests as possible. While the most highly fractionated reservations will be given early attention, this over-riding goal must be balanced with other goals, including Tribal priorities in acquisition of properties. The DOI LBBP has identified the purchasable tracts, established ceiling amounts against which acquisitions can be made, and provided the TAAMS allotment lists to Tribes to enable them to identify the priority properties from the list of purchasable properties. OAS/BBP division will receive a final priority property list for the top 40 reservations by October 31, 2013, after tribal selection of priorities have been completed.

2015 TAF Review Comment

The program developed by the DOI LBBP seems reasonable and has allowed input from the reservations. Also, they have continued to review the parcel list and refined those that should not be included after input from the reservation and from visual review using GIS.

2. The agency should review the definition of market value and standardize the definition.

2013-Department Response: The Department agrees and will use the definition of Market Value established under the Uniform Appraisal Standards for Federal Land Acquisition, which will be reflected in each property specific appraisal report and also in the Mass Appraisal Report and Mass Appraisal Statement of Value for a Single Property opinion of value.

2015 TAF Review Comment

In 2013, the Department had not decided on a definition of market value. They decided on the market definition used by the Department for other appraisals. This was a good decision and prevents any confusion within the Department or public of market value

2015 Department Response: The definition of market value is “The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would have sold on the effective date of the appraisal, after a reasonable exposure time on the open competitive market, from a willing and reasonably knowledgeable seller to a willing and reasonably knowledgeable buyer, with neither acting under any compulsion to buy or sell, giving due consideration to all available economic uses of the property at the time of the appraisal.” [Interagency Indian Land Acquisition Conference, Uniform Appraisal Standards for Federal Land Acquisition, 5th ed. (Appraisal Institute, 2000).]

3. Consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered.

2013- Department Response: The Buy Back Program is engaging early with several tribes in the Great Plains/Rocky Mountain region, allowing for model testing for accuracy and validation of market consistency on several reservations prior to implementation on a broader scale.

2015 TAF Review Comment

There are 153 reservations to potentially be valued under the LBBP and they have identified 42 areas that will have mass appraisal and those areas that will have site specific appraisals. Currently, the project is to have the mass appraisal and site specific appraisals completed by 2020 (unless modified) and the other processes are to be completed within 2 additional years. The projected completion date is Nov 2022.

4. Consider retention of a consultant with expertise in mass appraisal to work with OAS on pilot models or at least review those models before the methodology is applied to other reservations.

2013- Department Response: The Department agrees, and the OAS/BBP will contract for a Multiple Regression Appraisal specialist for the pilot models to assure credibility and reliability of multiple regression mass appraisals.

2015 TAF Review Comment

The team has done an outstanding job managing the mass appraisal/site specific appraisal processes and hired an exceptional consultant that is known internationally and author of the Mass Appraisal of Real Estate. Mass appraisal consultant's availability to work with OAS was discussed.

Recommendation: *A good business practice is to have a backup modeler to assist given the ambitious timetable.*

2015 Department Response: The Department agrees; OAS is in the process of contracting a second statistician in addition to training 4 modelers in OAS program. Classes and training are currently ongoing.

5. In addition to considering confidence intervals as summarized in this report, when confidence intervals cannot be developed due to limited sales or the use of single property appraisal methods, the administration should consider any additional information from the appraisal report and data analysis in determining the offer value.

2013- Department response: The market value for a site specific appraisal is determined by the appraiser of record and derived in the development, analysis and final conclusion as to the opinion of value, which will be provided to the Buy-Back Program Office for use in determining offer prices. However, where multiple regression analysis is used in mass appraisals, and the data permits development of confidence intervals, the Office of Appraisal Services can also provide confidence intervals upon request for the information of the buy-Back Program Office. The BBP administration will be provided copies of reports for site specific appraisals for use in determining a fair offer price.

2015 TAF Review Comment

The OAS staff has been able to collect sufficient valid sales transactions within and around the three projects reviewed by the Foundation's Team. OAS administration has determined to use mass appraisal/site-specific estimates of values and not used confidence intervals for determining offer prices. There are sufficient quality statistics calculated in the mass appraisal process to determine the quality of the estimates of value. OAS continues to study the use of confidence intervals in LBBP.

6. The OAS should try to develop a program for data sharing with Farm Credit. This would help the agency to receive all of the sales available in each area.

2013- Department response: Farm Credit Services (FCS) has indicated they are not interested in getting the DUNS number and SAM registration necessary for bulk acquisition of data. However, the Department will continue to work with FCS to acquire data on a reservation-by-reservation basis and will encourage a change in policy with FCS.

2015 TAF Review Comment

FCS is informally cooperating with the LBBP. They have an appraisal division and sales data shared on a personal relationship basis. This has helped LBBP. A memorandum of understanding has been executed for FSA data (Farm Services Agency within USDA). This is not for sales data set but land use maps.

7. OAS should consider the use of statistical software such as SPSS to assist in mass appraisal analysis. Such software would also facilitate quality control analysis (sales ratio studies) and development of confidence intervals. Excel can also be used to the same ends, although OAS should understand the limitations of Excel for multiple regression analyses (MRA) and statistical analyses.

2013- Department response: The Department agrees and OAS/BBP division has purchased two SPSS licenses for use in developing mass appraisals and will further evaluate the SPSS application. Given that mass appraisals may be beneficial at all reservations applying the multiple regression analysis models using SPSS would ensure thorough and sound data analysis.

2015 TAF Review Comment

OAS/LBBP division uses ESRI's Geographic Information Systems to store property specific information: delineate market areas (used county boundaries in some mass appraisal models). SPSS statistical software is used to perform data analysis and market analysis of sales transactions/prices. These two systems are stand-alone software systems that permitted OAS to quickly begin this project, perform their analysis; and value subject lands within and near six reservations in rapid succession. In the appraisal profession, this is a major accomplishment that should make OAS and the Department very proud.

8. Exploratory data analysis should be conducted prior to model development. This would include frequency distributions, graphs, and outlier identification. Outliers should be removed prior to model

development and testing. Time trends in sales should also be explored at this point, although final adjustments can be, at the analyst's option, developed during modeling.

2013- Department Response: The Department agrees, and has incorporated this recommendation into the plan in the section relative to Regression Analysis Model Calibration

2015 TAF Review Comment

OAS/LBBP division mass appraisal modelers with the support of their mass appraisal consultant, performed data analysis and market analysis using various charts and graphs to identify outlier sales transactions, which were removed from the modeling files. Time series analysis explored the potential for time trending through graphs, charts and regression models.

The mass appraisal consultant has many years of experience in SPSS and multiple regression analysis. As such the mass appraisal consultant prefers to using SPSS command language to write syntax directly rather than SPSS's windows environment with the recording of the syntax. Windows environment syntax may easily be displayed in SPSS output reports, which may be easily copied and pasted into a syntax file document to record the command language procedures. Both methods are acceptable means of operating SPSS statistical software and will provide documentation of the data analysis and market analysis procedures used by the modelers.

Recommendation: *The backgrounds of the mass appraisal modelers will likely determine their preference for windows environment or command language environment to operate SPSS. Those with statistical background may prefer command language; whereas real estate appraisers may find SPSS windows environment easier to learn. When appraisers may use the windows environment, they may concentrate on the concepts of analysis with statistical software. OAS should consider a policy that will permit both windows and command-language environments as acceptable methods for use in SPSS.*

2015 Department Response: The Department agrees; OAS will consider this policy recommendation, subject to maintaining the most robust and comprehensive record possible. For purposes of valuations for the LBBP, the syntax model will likely continue to be the preferred model but for other OAS purposes – as appraisers begin to use the software – the windows environment may be acceptable. OAS is in the process of developing Standard Operating Procedures (SOPs) for mass appraisal modeling.

9. OAS should develop documentation and reporting requirements for staff to use in determining which valuation process and reporting procedure to use in different circumstances. The four methods are Multiple Regression Analysis, benchmarks, Project Appraisal, and property specific appraisal.

2013- Department Response: The Department agrees that the OAS will establish protocols to ensure that OAS Buy-Back Program staff complies with appraisal standards and best practices; those standards require that the appraiser determine the appropriate valuation process. An independent quality assurance review appraisal will oversee all OAS regions involved in the BBP to ensure compliance with the Uniform Standards for Professional Appraisal Practice.

1) 2015 TAF Review Comment

GIS stores property characteristics, sales transactions and geographic coordinates/shapes and has the capacity for so much more. AgWare is storing sales information and partial characteristics. For all appraisals, AgWare is the current generator of all agricultural sale index number (developed in early 2000). AgWare has been superseded by GIS in storage and usability. The Foundation's Team has been told by OAS's mass appraisers that GIS has the potential to store all documents and information currently stored in AgWare. Thus AgWare is a duplication of data storage.

Recommendation:

OAS should consider using GIS identification as primary number and consider GIS primary depository of data.

2015 Department Response: OAS will research the capabilities of GIS and work to eliminate the duplication of data storage.

2) 2015 TAF Review Comment

Site specific appraisals are stored as PDF for a short time before being sent to off-site storage. In the current PDF format, site-specific appraisals are not available for statistical analysis.

Recommendation:

Site-specific appraisal information should be stored as property characteristic information in GIS. This would allow greater analysis of site specific appraisal information. Site specific appraisal values and characteristics could be used for future benchmark values (substitutes for sales transactions) for those areas that have limited sales information. A potential for improved efficiency is to permit site-specific appraiser to access GIS sales information for their appraisal.

2015 Department Response: The Department agrees; OAS will work toward using GIS to analyze site specific subject property data; use appraised property data in lieu of sales data when scarce and provide the site specific team greater access to GIS services.

3) 2015 TAF Review Comment

In some models OAS is using county boundaries and in others project OAS mass appraisers have delineated market area boundaries. We are impressed with the depth and breadth of mass appraisal team's use of ESRI's ArcGIS products.

Recommendation:

Since the mass appraisal team has so much data stored in ESRI's ArcGIS, OAS should consider using GPS coordinates for locational enhancements such as response services.

2015 Department Response: OAS is using GPS coordinates and will incorporate in development of locational adjustment

4) 2015 TAF Review Comment

OAS has gathered a great deal of electronic data files from other federal agencies.

Recommendation:

GIS should store extensive amounts of data and geographic information that is useful to all OAS appraisers. Consider adding FEMA flood maps and other federal agency's data and geographic files.

2015 Department Response: The Department agrees; OAS will add FEMA flood maps and other federal agency's data and geographic files where available.

5) 2015 TAF Review Comment

Quality control is being implemented within the OAS.

Recommendation:

GIS and SPSS software should be consider for use in improving quality control of both mass appraisals and site specific appraisals.

2015 Department Response: The Department agrees; OAS is currently is using GIS and SPSS software in quality control for mass appraisals and will consider the use of software in improving quality control for site specific appraisals.

10. OAS should maximize use of Arc GIS for data review, plotting the distribution of sales, defining neighborhoods, and plotting estimated values and sales ratios.

2013- Department Response: The Department agrees, and OAS is currently developing and implementing ArcGIS in the distribution of sales and defining neighborhoods. The plotting of estimated values as an analytical tool will be conducted within OAS as a part of the valuation process.

2015 TAF Review Comment

The Foundation's team is impressed with OAS mass appraiser use of ArcGIS to store data and provide geographic maps. Some mass appraisal models are using county boundaries and others use delineated market area boundaries. New fixed boundary lines define current neighborhoods, which is the traditional and good means to develop location values and adjustments. However, fixed neighborhoods boundaries always change over time. This requires maintenance to adjust shifting boundary lines. Many mass appraisers do not make the necessary annual changes to their fixed neighborhood boundaries.

Recommendation:

Consider using GPS coordinates for locational enhancements. This will reduce the time to develop locational adjustments and eliminate the time need to annually delineate fixed neighborhood boundaries.

2015 Department Response: OAS is using GPS coordinates and will incorporate in development of locational adjustment

11. OAS should use sales ratios to review the quality of values generated by mass appraisal methods (MRA or paired sales analysis with benchmark values). OAS should define performance goals based on IAAO ratio standards, e.g., median levels of appraisal of 0.90 to 1.10 and coefficients of dispersion (CODs) of no more than 20% to 30% depending on the homogeneity of markets.

2013- Department Response: The Department agrees and OAS/BBP division will use sales ratios to review the quality of values generated by mass appraisal methodologies. This recommendation has been incorporated into the Valuation Plan in the Regression Analysis Model Calibration section of the Plan document, including references the IAAO ratio standards.

2015 TAF Review Comment

OAS is using quality statistics in mass appraisal modeling that are recommended by IAAO's Standard on Ratio Studies.

2015 Department Response: The Department agrees.

12. OAS should validate appraisals using a holdout group. The current plan calls for assigning the last available year of sales to the holdout group. The analyst would run sales ratios both for the model and holdout groups of sales. Assuming results meet required standards, the model would be rerun on the combined model and holdout groups to maximize sample size.

2013- Department Response: The Department agrees. OAS/LBBP will follow this protocol and has incorporated appropriate language into the Valuation Plan.

2015 TAF Review Comment

OAS and its mass appraisal consultant decided to take advantage of having the latest sales in its mass appraisal modeling file as the model projects forward to valuation date. This is a practical change in the recommendation. The holdout sample is developed from a random sample of all sales with consideration by acreage, time of sale and every 7th or 9th sale, which should make the holdout sample sales file similar to their model file. This requires extra efforts on the part of the mass appraisers that goes beyond the required minimum.

2015 Department Response: The Department agrees.

13. If there are a lack of sales and static market conditions, the agency should consider using a longer time period of sales (up to 10 years).

2013- Department Response: The Department agrees. The OAS/BBP will follow this protocol and has incorporated appropriate language into the Valuation Plan. OAS has been using longer time periods for sales in the regular work when necessary.

2015 TAF Review Comment

There could be specific reservations where the time period may have to reach the 10 year period. If there is a lack of sales, the agency should consider site specific appraisals as substitute in lieu of extending the time period. The site specific data would have to be inputted into the sales file being used with an appraisal value field being used as a sale data and sales price.

2015 Department Response: The Department agrees; OAS will consider using site specific appraisals as substitute in lieu of extending the time period.

14. OAS should standardize the definitions of recreation, open space, and agricultural use for each region based on highest and best use analyses.

2013- Department Response: The Department agrees. The Office of Appraisal Services has developed data dictionaries reflecting the definitions and has incorporated appropriate language into the Valuation Plan.

2015 TAF Review Comment

The agency needs to develop standardized definitions for the various data inputs used in the system. If there are regional variations of the nomenclature, the agency needs to develop a “Rosetta Stone” so the definitions can be used locally but there is a standard definition in agency and computer system.

2015 Department Response: The Department agrees. OAS has developed data dictionaries, but will work in developing standardized definitions and allowing for variations within regions.

15. When value estimates incorporate the contribution of mineral values or timber values, Standards 1 and 2 will apply. Incorporating the values from a timber and or mineral value would not be applicable to a mass appraisal process, except when such contributions are nominal.

2013- Department Response: The Department agrees; The OAS Valuation Plan reflects that B and S tracts with \$0 resource value can be used in mass appraisal, but where there is a contributory value from minerals or timber, another methodology will be employed.

2015 TAF Review Comment

Mineral values will be developed using site specific appraisal methods. Given the forestry agency extensive database and the forestry agency’s cooperation with OAS, OAS has amassed extensive data files. OAS has its own timber consultant. As such, OAS has sufficient information for mass appraisal application.

Recommendation:

With sufficient timber sales transaction and timber data, the agency should consider incorporating timber variables in mass appraisal model.

2015 Department Response: The Department agrees; OAS is in the process of incorporating timber variables in mass appraisal modeling.

16. The *Uniform Appraisal Standards for Federal Land Acquisitions* (UASFLA or “the Yellow Book”) was last updated in 2000 and the current USPAP is the 2012-2013 version. There could be some inconsistency with the Yellow Book versus the current USPAP versions and the agency personnel involved with the group that established the Yellow Book should call for a review and possible update to the Yellow Book.

2013- Department Response: The Department will bring The Appraisal Foundation’s recommendation to the attention of the Interagency group responsible for the Yellow Book.

2015 TAF Review Comment

An update of the Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book) is in process with a project timeline in 2016. The DOI has requested the DOJ update the Yellow Book. The agency has submitted recommended changes to be considered. Most professional associations have adopted a specific timeframe for their specific appraisal books to be updated. DOI should request a standard timeline for updating the Yellow Book. Also, the USPAP reference should be in general terms and not a specific USPAP edition.

Recommendation:

DOI should request a standard timeline for updating the Yellow Book. Also, the USPAP reference should be in general terms and not a specific USPAP edition.

2015 Department Response: In FY16 the Yellow Book update will be provided for review and publication in early FY17. The Department will recommend the adoption of a standard timeline for regular updating unless the comment has already been addressed by DOJ.

17. The staff should attend educational offerings from recognized mass appraisal programs.

2013- Department Response: The Department is committed to ongoing professional development and the Office of Appraisal Services will handle this recommendation through including mass appraisal classes in the Individual development Plans for OAS/BBP division staff.

2015 TAF Review Comment

The OAS is committed to ongoing professional development in mass appraisal. An example of this includes:

- *The modeling consultant, while creating the model, is teaching the staff appraisers with an open dialog in the classroom setting.*
- *The agency has hired a mass appraisal consultant to teach International Association of Assessing Officers (IAA) level 300 mass appraisal courses.*
- *Some IAAO classes have been offered to the staff.*

Recommendation:

1) This activity should be advanced to hands-on modeling style of education for the staff appraisers and modelers.

2015 Department Response: The Department agrees; OAS will work with consultant in providing hands-on modeling to staff. OAS will continue to allow staff to attend IAAO classes in order to allow improved skills.

2) The agency should continue education in SPSS modeling for real estate for their appraisers. The agency has hired a mass appraisal consultant to teach three sessions of SPSS modeling residential and vacant properties.

2015 Department Response: The Department agrees; OAS has been aggressively providing mass appraisal education to its staff. For example, in 2015 it hired a mass appraisal consultant to teach three week-long sessions of SPSS modeling instruction. In addition, OAS is funding statistical courses through a university for a staff appraiser, and several other staff members have begun to take IAAO classes.

3) The agency should consider attending the URISA/IAAO GIS/CAMA conference on an annual basis. This joint conference is the premier conference using the mass appraisal and GIS products. Staff should attend and present how the LBBP is using mass appraisal and GIS in this program.

URISA: Urban Regional Information Systems Association

IAAO: International Association of Assessing Officers

2015 Department Response: The Department agrees; OAS has submitted an abstract to the conference and will be attending.

18. The Agency should clarify and state which properties will be considered in the buy-back program. Also they should make a decision on which reservations the mass appraisal process would not be beneficial.

2013- Department Response: The Department agrees and is working through the Buy-Back Program Office to specify properties to be considered. Further, in consultations with OAS, decisions on where mass appraisal is appropriate will be considered as the land analysis is completed for each reservation.

2015 TAF Review Comment

A list has been provided to the Foundation's team that indicates appraisal process to be performed by reservation. The LBBP has published an implementation plan.

19. The Agency should consider a pilot reservation to test this process and use it as a prototype for the other reservations. The South Dakota region and another region should be considered where adequate sales information exists.

Department response: The Department agrees. See response to number 3.

20. OAS should report most probable market values based on the definition of market value established for the program, but should also consider providing additional information for use by the Buy Back Program administration in establishing the offer amounts for fractional interests to be acquired. For example, confidence intervals developed during statistical analysis could provide guidance in setting offer amounts consistent with the program goals.

Department Response: The Department agrees. See response to number 5.

2015 ADDITIONAL COMMENTS, RECOMMENDATIONS AND RESPONSES:

1. Most of the existing mass appraisal models are using binary variables, which is an acceptable format of regression modeling. There are other types of transformation for use in regression.

Recommendation: For more control over the model coefficients, consider use of categorical variables with related percentage for sub-categorical variables.

Example: In the early models, OAS mass appraisers uses several binary variables for pasture poor, fair, good and blank (assumed to be average). Categorical would use one variable for Pasture Quality with sub-categories of poor, fair, average and good. Percentage adjustments are initially applied by appraisers to these sub-categories and regression provides the market adjustment to the totality of these variables. Review of each models' results may indicate the adjustment of the sub-category starting values. This provides better control of the variable; may improve the significance of the variable; keeps the relative value of the sub-categories in place and avoids unexpected coefficients of some pasture quality binaries.

2015 Department Response: The Department agrees; OAS will consider the use of categorical variables with related percentage for sub-categorical variables when appropriate.

2. OAS's mass appraisers and their mass appraisal consultant have been using additive and multiplicative techniques in backward elimination regression. Linear regression has been around for many years, but is a very different conceptually from appraisal professionals' educational training.

Recommendation: OAS should study the IAAO's hybrid model formula that is supported by SPSS's non-linear regression program. These hybrid formulas has been used in mass appraisal for over twenty-five years and may be formulated to better support the appraisal background and training of OAS's appraisers. This may increase the understanding and acceptance of statistical models within the OAS's appraisal staff (site specific and mass appraisers).

2015 Department Response: The Department agrees; OAS will consider the study of IAAO's hybrid model formula when appropriate.

3. Currently OAS mass appraisers and site specific appraisers are separate vertical operations that do not fully leverage the advantage of both appraisal groups.

Recommendation: Site Specific appraisal information may be added to GIS to provide benchmark value to support mass appraisal models. Mass appraisal database and model statistics may provide statistical support for all types of appraisals and provide the adjustment for site specific comparable sales reports. Statistical models may be used to identify valid sales transactions and support site

specific appraisals with automated comparable sales grids. GIS may provide additional maps and aerials maps for appraisals

2015 Department Response: The Department agrees; OAS is working toward the use of site specific appraisal information for benchmarking of mass appraisal models. In addition, OAS is in the process of testing new software for the possible use of mass appraisal database and model statistics to provide statistical support for all types of appraisals.

4. Usually there is a divide between appraisal disciplines: site specific appraisers and mass appraisers. OAS suffers from this same split.

Recommendation: With each reservation, LBBP project should consider preliminary meeting between LBBP mass appraisers and regional supervisory appraisers to discuss model specifications and glean regional competency about the market area. This will help to reduce the divide between two appraisal disciplines within OAS. When results are available and before the release of the values, a preliminary meeting within OAS between RSA and LBBP may be useful to promote understanding between OAS two appraisal disciplines.

2015 Department Response: The Department agrees; OAS has been working with Regional Supervisory Appraisers (RSAs) in the discussion of model specification and has employed the interaction from regions on market areas. OAS will continue to work with regional supervisory appraisers and staff when mass appraisal results are available and before release of values, share this information with the regions.

5. OAS mass appraisal modelers have been quickly learning statistical models developed by OAS mass appraisal consultant. OAS mass appraisers have completed several mass appraisal models on various reservations. Going from very limited information to sufficient information to create mass appraisal models with credible values is a great accomplishment. Early models did not keep the SPSS output reports as part of its model documentation. More recently, OAS mass appraisers are saving the SPSS output reports as part of its model documentation.

Recommendation: Continue the policy of keeping the SPSS output reports as support for documentation. This will be helpful to OAS's clients, who may wish to review documentation and value.

2015 Department Response: The Department agrees; OAS will continue the record keeping of SPSS output reports for support of documentation.

6. In all successful mass appraisal installation, the client's expectations are limited as they usually do not visualize all the potential of computerized databases, statistical models and GIS applications. The Graph (noted in the TAF report, page 19) shows the planned client expectations versus client's future expectations. The vertical numbers represent growing expectations. The horizontal represents the number of years from the beginning of the project. This is a general chart to demonstrate the rapidly rising client expectation that clients may have once they see the initial results.

Recommendation: Consider re-evaluation of initial plan to meet rising client's demand

2015 Department Response: The Department agrees; OAS will re-evaluate the initial plan to meet rising client's demand. There has already been requests by three Tribes, where the reservation was mass appraised, asking for the mass appraisal use in future appraisal work.

2015 SITE SPECIFIC RECOMMENDATIONS AND RESPONSES:

1. Encourage more participation in bidding process through Federal Business Opportunities (Fed Biz Ops), IBC and other resources.

2015 Department Response: In 2014 OST/OAS reached out with Requests for Information(RFI) with minimum response. However, OAS continues to inform and present to appraisal organizations and at conferences encouraging their participation, and will strive to increase participation in the bidding process.

2. Attempts should be made to assure all concerned that qualified appraisers are aware of the opportunity to quote on the proposals.

2015 Department Response: The Department agrees; OAS continues to inform and present to appraisal organizations and at conferences encouraging their participation, and will strive to increase participation in the bidding process.

3. Continue working with IBC to streamline the bid advertising and award process for private contractors. It is our understanding that this process has already begun.

2015 Department Response: The Department agrees; OAS will be working with an OST acquisition specialist to further streamline the IBC bid advertising and award process.

4. Designate a staff person to walk potential vendors through the DUNS (Dun and Bradstreet) and SAM (System for Award Management) process in order to facilitate additional bids or quotes on proposals and assign sufficient site specific appraisals to make the government regulations cost effective. Additionally, RFP's for entire reservations should be considered.

2015 Department Response: The Department agrees; OAS will work in setting up a website providing the vendors with step by step training in the IBC contracting process, in addition in working with IBC. In 2014 the Department reached out with Requests for Information (RFIs) with minimum response.

5. Use of appraisals (both mass appraisal and site specific appraisal) developed for the Buy-Back Program for other purposes presents potential issues for the Program. The Program should develop a policy on how appraisals can be used to ensure that any use is consistent with the intended use for the Buy-Back Program, i.e., for acquisition purposes. Program Officials should make the decision on use, and concurrence in use outside the program from the appraiser of record is advisable.

2015 Department Response: The Department's Land Buy Back Program is in the process of developing a "sharing of appraisals" policy and procedures, with steps required in the release of appraisal reports to landowners and Tribes. Further, the Cover Letter accompanying any release of

an appraisal clearly states the intended use, i.e., for acquisition in the context of the Buy Back Program, and the Assumptions and Limiting Conditions within the Appraisal Report similarly defines the intended use. This policy will address the TAF recommendation.

6. Consideration might be given to expanding the quality control role so that the process is not dependent on one individual.

2015 Department Response: The Department agrees; OAS is working toward placing more staff on quality control for mass appraisals and site specific appraisals.