Supporting Statement for Paperwork Reduction Act Submission:
Part A

USERS, USES, AND VALUE OF LANDSAT SATELLITE IMAGERY

Revision of a Currently Approved Collection
OMB Control Number: 1028-0091
Expiration Date: September 30, 2010

Terms of Clearance: In accordance with 5 CFR 1320, the information collection is approved for one year. OMB concurs with the agency's conclusion about the lack of generalizability of the results. Because the population of moderate-resolution imagery users cannot be determined with a high degree of accuracy, there will be limitations of any results or conclusions drawn from the data generated by this survey. Upon completion of the survey, the agency must provide to OMB a detailed report of the data analysis associated with this ICR.

Response: On August 17, 2010, we provided a report to OMB on the data analysis for the 2009 Landsat Survey (attached in ROCIS as a supplementary document).

Justification

1. **Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.**

NOTE: This information collection was approved by OMB (on September 30, 2009) with the terms of clearance noted above. This renewal request is for the standard three year approval period.

The U.S. Geological Survey's (USGS) Land Remote Sensing (LRS) Program manages the Landsat system and its earth observing imagery. The imagery is collected, processed, archived, and distributed by the Earth Resources and Observation Science (EROS) Center in Sioux Falls, SD. As the provisioner of this imagery, LRS is responsible for the following for Landsat imagery:

1. Ensure data continuity;
2. Be responsive to users and their needs related to Landsat imagery; and
3. Increase the benefits of Landsat.

In order to effectively meet these responsibilities, USGS LRS Program Managers must have a comprehensive understanding of the users, uses, and benefits realized by the imagery. This understanding will allow them to tailor the provision of the imagery and policies governing the program based on direct input from imagery users. The initial information collection approved under this ICR was a first step in this understanding, as this information to date had been little known.

Since the initial ICR request, a significant policy change concerning Landsat imagery has occurred: the imagery became available at no cost in the latter part of 2008, resulting in an exponential increase in the number of users acquiring imagery from EROS, from less than 5,000 to over 40,000 in less than two years. This has resulted in a 50-fold increase in annual downloads of the imagery (from 20,000 scenes to over a million) from EROS. All imagery must be initially downloaded from EROS; however, after the imagery is downloaded, it can be freely distributed by a variety of organizations including

private businesses, state governments, and universities. Because of this lack of distribution restrictions, the policy change has likely also led to an increase in the number of non-EROS users and amount of imagery acquired from sources other than EROS. Though this policy change has resulted in more EROS users and more imagery being downloaded, little is known about these users in terms of their demographics, specifically how they are using the imagery (e.g., in what application areas and in decision making), or the benefits derived from the imagery.

LRS must have a better understanding of these new users (both those coming to EROS for the imagery and those acquiring imagery elsewhere) to more effectively manage the Landsat program and the provision of the imagery. Others, such as the Assistant Secretary for Water and Science at the Department of the Interior and members of the Subcommittee on Interior, Environment and Related Agencies, have requested information on the effects of this policy change to better understand the current uses of and future requirements for the Landsat program. By sampling the known population of users (those coming to EROS) *and* sampling non-EROS users this information will be available to inform this program. The information collected from EROS users will be generalizable to the population of EROS users. The information collected from the non-EROS users will not be generalizable (because the population is not known) but will identify additional uses and benefits that may not be represented in the EROS population. Combined, these two sets of data will increase the understanding of this newly expanded population of users to better meet their needs.

In addition to the no-cost policy change, a new Landsat satellite is scheduled to launch in December 2012. It is expected this will further increase the user base of Landsat imagery because this satellite will provide more advanced images than those currently produced and be available at no cost. There are expected to be additional increases in users, types of uses, and realized benefits from this satellite imagery because the new sensor will contain two new bands that can be used to study shallow waters and clouds. However, in order to determine any additional effects of the new satellite imagery, an understanding of current users, uses, and benefits is needed.

Policies/Acts that this ICR supports:

This information collection supports the requirements that the USGS ensure that the operation of the Landsat system is responsive to the broad interests of the civilian, national security, commercial, and foreign users of the Landsat system. USGS is also required to ensure the continuity of moderate-resolution data. Specifically, this surveying effort will provide information required by the following laws, regulations, policies and statutes:

- Land Remote Sensing Policy Act of 1992 (P.L. 102-555)
- Government Performance Results Act (GPRA) (1993)
- Presidential Decision Directive/NSTC-3 (October 16, 2000)
- Landsat Data Continuity Strategy, Memorandum from EOP/OSTP Director (August 13, 2004)
- Landsat Data Continuity Strategy Adjustment, Memorandum from EOP/OSTP Director (December 23, 2005)
- U.S. National Space Policy (August 31, 2006)
- U.S. National Space Policy (June 28, 2010)

A brief overview of each is provided below:

Land Remote Sensing Policy Act of 1992 (P.L. 102-555)
This Act returned the management of the Landsat system to the Federal government. It stresses the importance of the Landsat system, and provides guidance on management of the system and continuity of Landsat data. According to this Act, USGS is responsible for "…ensuring that the operation of the Landsat system is responsive to the broad interests of the civilian, national security, commercial, and

foreign users of the Landsat system…" USGS is also required to ensure the continuity of moderate-resolution data.

GPRA (1993)
This information will be used by USGS to meet Government Performance and Results Act (GPRA) requirements. In particular, GPRA requires that all agencies establish performance indicators and provide annual reports on program performance based on those indicators. For USGS, program goals include meeting the needs of the users of Landsat satellite imagery.

Presidential Decision Directive/NSTC-3 (October 16, 2000)
This amended Directive transfers operations of satellites to the Department of Interior (DOI) and directs DOI, including USGS, to ensure data continuity beyond Landsat 7 (the most recent satellite).

Landsat Data Continuity Strategy, Memorandum from EOP/OSTP Director (August 13, 2004)
This policy reaffirms the importance of the Landsat system and states "Landsat is a national asset, and its data have made – and continue to make – important contributions to U.S. economic, environmental, and national security interests. Specifically, Landsat images are the principal source of global, medium resolution, spectral data used by Federal, state, and local government agencies, academia, and the private sector in land use/land cover change research, economic forecasting, disaster recovery and relief, and the scientific study of human impacts on the global environment." The policy also states "Any disruption in the continuous availability of Landsat imagery, products and value-added services will adversely affect government, international, and other users and may limit use of the global data set for certain types of scientific analysis."

Landsat Data Continuity Strategy Adjustment, Memorandum from EOP/OSTP Director (December 23, 2005)
This memorandum further clarifies the role of the DOI and USGS by stating "DOI, through the USGS, will be responsible for the operations of the Landsat data continuity mission and for the collection, archiving, processing, and distribution of the land surface data to U.S. Government and other users."

U.S. National Space Policy (2006)
This policy directs civil space agencies, including DOI and USGS, to increase the benefits of operational environmental monitoring activities of satellite systems, including Landsat. This policy directs DOI, through USGS, to "…collect, archive, process, and distribute land surface data to the United States Government and other users and determine operational requirements for land surface data."

U.S. National Space Policy (2010)
Since the study began, a new space policy has come into effect which reiterates the goals of the 2006 policy, specifically to "determine the operational requirements for collection, processing, archiving, and distribution of land surface data to the United States Government and other users."

2. Indicate how, by whom, and for what purpose the information is to be used. Be specific. If this collection is a form or a questionnaire, every question needs to be justified.

As manager of the Landsat system, USGS will use this information to more effectively provide the imagery and identify its benefits, for which they are tasked. It will help them meet their programmatic requirements of overseeing Landsat operations and effectively distributing the imagery through EROS. Specifically, USGS will be able to use this information to determine the effects of the no-cost policy, including how the characteristics of the EROS population have changed and how the uses and benefits of the imagery have changed or expanded. The effects of a no-cost imagery policy have implications for land imaging policy in USGS beyond Landsat, as they consider pricing structure for imagery in the

future. Additionally, the information regarding the needs of these users will be incorporated into the development of future Landsat satellites.

Those in academia, satellite operations, land managers and decision makers will use the results of the survey to see if their opinions were captured, where potential changes in the program, such as products or operations, might occur and how well the USGS is running the Landsat program.

The information gathered in this survey is not intended to be used to justify funding for the Landsat program, but instead to contribute to more informed decisionmaking regarding the direction and policies of the program and to better provision of the imagery to the users.

This collection contains a survey that is a revised version of Form 1 from the initial collection. All respondents will receive instructions and answer a series of questions. An online survey will be used to collect this information. Although the survey contains many questions, we will use a software system that will branch and skip questions based on responses to previous questions; in this way respondents will only answer questions relevant to them.

There are three categories of questions in the survey: (1) users and uses of Landsat imagery; (2) value of and benefits from the imagery; and (3) demographics, described below. Individual question justifications are provided in the survey.

Category 1: Users and Uses of Landsat Imagery

The first category of questions is designed to identify the types of EROS users and their uses of Landsat imagery (current, past and predicted future uses). This information is necessary because it will identify new and established users, as well as U.S. and international users, and their uses of Landsat imagery. This information will allow USGS to be more responsive to EROS users in providing Landsat imagery and managing the Landsat system. This information will also be helpful to USGS in fulfilling their data continuity requirements by identifying the key uses of the imagery that need to be provided for by USGS.

Questions under this category include:

- Identification of new versus established and U.S. versus international EROS users
- Types of satellite imagery used (beyond Landsat)
- Applications of Landsat imagery
- Geographic scope and location to which Landsat imagery is applied
- Acquisitions of Landsat imagery
- Past and future trends of amount of Landsat imagery use

Category 2: Value of and Benefits from Landsat Imagery

The second category includes questions concerning the value and benefits of Landsat imagery. Understanding the value of and benefits from Landsat imagery is critical information needed for USGS to provide data continuity, be responsive to their users, and increase the benefits of the imagery, as described in #1 above.

Questions include:

- Importance of and level of satisfaction with attributes of Landsat imagery
- Impacts on users and their work if Landsat imagery were not available

- Current costs and revenues related to work which uses Landsat imagery
- Benefits to society and the environment of projects based on Landsat imagery
- Willingness to pay for replacement imagery if Landsat imagery were not available

Information in this category related to importance, satisfaction and the impacts on EROS users if Landsat imagery were not available will provide USGS with a better understanding of user preferences and will allow them to be more responsive to EROS users in providing Landsat imagery, as well as guide USGS in selecting replacement imagery in the event of a break in data continuity.

The cost and willingness to pay information will help USGS establish a reasonable expense for replacement imagery to ensure data continuity. Willingness to pay data is essential for USGS to understand how much demand there would be by users for alternative imagery (particularly given the large increase in EROS users after the imagery became available at no cost) as a function of the price that USGS would have to pay for alternative imagery. The willingness to pay for imagery if Landsat imagery were not available is a contingent valuation question. Contingent Valuation Method (CVM) will be used to determine how much users would pay for substitution imagery if Landsat imagery were not available. The method is recommended for use by federal agencies performing benefit cost analysis (U.S. Water Resources Council, 1983). As suggested by the National Oceanic and Atmospheric Administration (NOAA) panel on contingent valuation (Arrow, et al., 1993), we will ask a dichotomous choice format question. Further justification for this question is available in the attached survey.

Information on the benefits of the imagery will be used to establish a baseline of the extent of current benefits, allowing the USGS to measure the impacts of efforts to increase these benefits in the future, as directed by the U.S. National Space Policy of 2006.

Category 3: Demographics

This category of questions will allow the respondents to self-identify their age, gender, ethnicity/race, education, and employment sector. This information will provide a detailed picture of the EROS user community. Responses will tell us more about homogeneity and heterogeneity in this user population and highlight factors that may be related to respondents' use of imagery or their opinions about imagery. Additionally, in the case that longitudinal research is conducted on this population, this information will be necessary to determine how the user community has changed. For instance, given that Landsat imagery is now available at no cost, it is now accessible to a larger group of people who may have different demographic characteristics than the previous population, some of whom may be present in the EROS population.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology; e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection.

Also describe any consideration of using information technology to reduce burden [and specifically how this collection meets Government Paperwork Elimination Act requirements].

Data collection for this information collection will be 100% electronic. All respondents will receive an e-mail message containing a unique URL link to the survey. We will follow the most up-to-date methods for conducting a web-based survey. All instruction and the survey instrument will be available on-line. Key Survey™ software will be used to develop and serve the survey as well as to collect and store the information gathered during this study.

The basis for choosing this approach is based on the technical nature of the population being sampled. The users in both samples, those who procure Landsat imagery from EROS and those who use Landsat imagery in general, are highly reliant on computer and web technology to work with these images. The method used for identifying the samples (See Part B) ensures that all potential respondents have access to email and web technology. Data collection methods will follow Dillman (2007) for web-based surveys.

4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item 2 above.

The initial collection is similar but will not be duplicated by this effort. Although many of the questions on the revised survey are repeated, they will be asked of a different group of users. Additionally, results or conclusions drawn from the data generated by the previous survey could not be generalized to a population, whereas the data from EROS users can be generalized to the population of EROS users.

5. If the collection of information impacts small businesses or other small entities, describe the methods used to minimize burden.

We have made efforts to keep the amount of information requested to a minimum for all of the respondents. This collection is not expected to have a significant impact on small business or small entities. We have attempted to minimize the burden to all respondents by developing an on-line survey.

6. Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.

The 2006 National Space Policy directs DOI and USGS to increase the benefits of operational environmental monitoring activities of satellite systems, including Landsat. Additionally, in 2010, President Obama released his National Space Policy providing this Administration's direction for the Nation's space activities. One aspect that received particular attention is the policy's direction to the Secretary of the Interior to "determine the operational requirements for collection, processing, archiving, and distribution of land surface data to the United States Government and other users." This survey is a key component of accomplishing that policy and without it the Department of the Interior will have difficulty in meeting its responsibilities.

The LRS Program will not have evidence-based information from users to inform their obligations for managing the Landsat system and its imagery. Namely, they will be less effective at ensuring data continuity; being responsive to users and their needs, and understanding the benefits of the imagery. These obligations are set forth in the Land Remote Sensing Policy Act, Presidential Decision Directive/NSTC-3, and the Landsat Data Continuity Strategy memorandums (described in #1 above). Because there is little information about the expanded population of EROS users (from less than 5,000 to over 40,000) as well as new users who may not be procuring imagery from EROS directly, it is not clearly known how to best provide future products and services for all of these users.

7. Explain any special circumstances that would cause an information collection to be conducted in a manner: (i) requiring respondents to report more often than quarterly, (ii) requiring respondents prepare written responses in fewer than 30 days after receipt, (iii) requiring respondents to submit more than an original and two copies of any document, (iv) retain records for more than 3 years; (v) in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of

study; (vi) the use of a statistical data classification that has not been reviewed and approved by OMB; (vii) that includes a pledge of confidentiality not supported by authority established in statute or regulation; requiring respondents to submit proprietary trade secrets or other confidential information.

This request contains no special circumstances with respect to 5 CFR 1320.5 (2).

8. If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice [and in response to the PRA statement associated with the collection over the past three years] and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.

Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported. [Please list the names, titles, addresses, and phone numbers of persons contacted.]

Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years — even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.

On July 12, 2010, we published a 60-day Federal Register notice (75 FR 39701) announcing that we intended to request OMB approval of a revised information collection associated with the users, uses, and value of Landsat satellite imagery. In that notice we solicited public comments for 60 days, ending September 10, 2010. We did not receive any comments in response to that notice.

In addition to the Federal Register notice, we solicited comments from users of Landsat imagery (table 1). The purpose was to obtain critical reviews of the survey from individuals in the profession who have similar backgrounds to those in the sample. Five users reviewed the survey: 3 from academia and 2 from the private sector (one of which was a recently retired NASA employee).Three of the users had reviewed the initial survey, while two users had not seen any version of the survey before. We asked for feedback on the clarity of instructions and the comprehensibility of questions, as well as an estimation of how long it would take to complete the survey. There were few suggestions for substantive changes to the survey beyond wording and grammatical concerns. Where possible, recommendations were incorporated. In an effort to preserve continuity, recommendations to change existing questions were not always acted upon and neither were suggestions for new questions unless they obtained critical information. There were no recommendations to reduce the amount or type of data collected. Below is a selection from the comments we received from reviewers.

Two reviewers suggested that Question 4 provide better definitions of operational and non-operational work to help respondents understand the terms. Definitions and examples of each type of work were added to the question (see Appendix 1, Question 4).

Two reviewers suggested expanding the answer choices in Question 15 to accommodate a wider range of scales. Two new answer choices were added to the question (see Appendix 1, Question 15).

One reviewer suggested adding a question about how long users had been using remotely sensed imagery or GIS software. Given that the information from such a question would be of value to the

USGS in determining the different needs of users with different experience levels, the question was created and added (see Appendix 1, Question 73).

Reviewers estimated that it would take around 30 minutes to complete the survey. This estimated completion time is used in Table 2 to respond to item12 below.

Table 1. Names and contact Information of individuals consulted with outside the agency.

Past Reviewers	New Reviewers
Allan Falconer, Associate Dean George Mason University, College of Science 4400 University Dr., Mail Stop 1E2, Fairfax, VA, 22030 703-993-1360 afalcon1@gmu.edu Teresa Howard, Research Associate University of Texas at Austin, Center for Space Research 3925 West Braker Land, Ste. 200 512-232-7514 howard@csr.utexas.edu Darrel Williams, Chief Scientist Global Science & Technology, Inc. 7855 Walker Drive, Suite 200 Greenbelt, MD, 20770 240-542-1106 darrel.williams@gst.com	Celeste Jarvis, Vice President Global Science and Technology, Inc. 7855 Walker Drive, Suite 200 Greenbelt, MD, 20770 301-474-9696 celeste.jarvis@gst.com Caroline Hermans, Research Associate City University of New York (CUNY), Environmental CrossRoads Initiative 160 Convent Avenue New York, NY, 10031 212-650-5649 chermans@ccny.cuny.edu

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

There are no payments or gift giving associated with this collection.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

We will ask respondents a series of demographic questions, but we will not collect any personal identifying information. We will aggregate all information collected and use it only for statistical purposes. For the purposes of confidentiality, all connections between respondent e-mail address and returned survey will be eliminated upon receipt. No list of respondent e-mail addresses will be retained after data collection is completed.

11. Provide additional justification for any questions of a sensitive nature such as: sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be

given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

This collection does not ask for information of a sensitive nature.

12. Provide estimates of the hour burden of the collection of information. The statement should:

- *** Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. Generally, estimates should not include burden hours for customary and usual business practices.**
- *** If this request for approval covers more than one form, provide separate hour burden estimates for each form and aggregate the hour burdens.**
- *** Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in Item 14.**

Burden estimate is based upon the time to read instructions and to complete an on-line survey. This collection contains two surveys. The main survey - all respondents will receive instructions and answer a series of questions. The survey will take approximately 30 minutes to complete. As noted above, not all respondents will answer all the questions but will be asked the most relevant questions based on their answers to previous questions (the branching and skipping patterns are noted in the attached survey).

The second survey will be used to measure the non-response bias and will be administered only to those who do not complete the first survey. This survey will contain 3 questions from the main survey.

A total of 40,366 nonfederal individuals will be contacted in the EROS population. Based on experience with other samples of known populations, we expect a 25% undeliverable rate, reducing the number of potential respondents to 30,275. Of those individuals, 10,294 are expected to be U.S.-based and 19,981 are expected to be international. Based on the response rate from the first survey, we are assuming a 50% response rate for domestic users yielding 5,147 non-federal respondents. However, we do not expect to have as high a response rate among international users due to the language barrier among many respondents. We estimate a 35% response rate among international users which would yield 6,693 respondents. Though this response rate is low, the sample obtained is still greater than that needed to provide sufficient statistical power to generalize to the sub-population of EROS international users and allows for comparisons between international and U.S.-based users. In total, we anticipate a 40% overall response rate yielding 11,840 nonfederal respondents from the EROS population. In addition, the sampling beyond the EROS population is expected to increase the sample by around 10%, after undeliverable and duplicate email addresses are removed. This would yield around 3,028 additional potential respondents. We estimate a 40% response rate for this group as well which would yield 1,211 respondents. The total number of expected respondents to the survey is 13,051.

For the non-response bias check, we expect a 10% response rate from the remaining population which adds approximately 1,722 respondents to the burden calculation. Total burden estimate for this collection is 6,613 hours (see table 2 below). This burden is different from that in the 60-day notice due

to revised population numbers received from EROS, as well as the addition of users outside of the EROS population.

We estimate an aggregated annual cost to the respondents to be $218,345 (see table 2). The hour cost is based on BLS news release USDL 10-1241 of September 8, 2010, for average full compensation per hour including benefits for private industry. The particular values utilized are:

- Individuals. Average hourly wage is $20.55 multiplied by 1.4 to account for benefits ($28.77).
- Private sector. Average hourly wage is $19.53 multiplied by 1.4 to account for benefits ($27.34).
- States/tribal/local governments. Average hourly wage is $26.13 multiplied by 1.5 to account for benefits ($39.20).

Table 2. Estimated Dollar Value of Annual Burden Hours

Survey Respondents (sector)	Annual Number of Respondents	Estimated Completion Time per Respondent (minutes)	Total Annual Burden Hours	Dollar Value of Burden Hour Including Benefits	Total Dollar Value of Annual Burden Hours
Form 1					
Individual	3,132	30	1,566	$28.77	$45,054
Private	4,046	30	2,023	$27.34	$55,309
State/Local/ Tribal Governments	5,873	30	2,937	$39.20	$115,111
Subtotal	**13,051**		**6,526**		**0**
Non-response Check Survey					
Individual	413	3	21	$28.77	$604
Private	534	3	27	$27.34	$738
State/Local/ Tribal Governments	775	3	39	$39.20	$1,529
Subtotal	**1,722**		**87**		**$2,871**
Total	**14,773**		**6,613**		**$218,345**

13. Provide an estimate of the total annual (non-hour) cost burden to respondents or recordkeepers resulting from the collection of information.

There are no non-hour cost burdens to respondents.

14. Provide estimates of annualized cost to the Federal government

The total estimated cost to the Federal Government for processing and reviewing information received as a result of this collection is $24,568 (Table 3). This includes salaries and benefits. The table below shows Federal staff and grade levels performing various tasks associated with this information collection. This includes all phases of the survey, including questionnaire design and review, field data collection, and statistical analysis and reporting. We used the Office of Personnel Management Salary Table 2010-RUS (http://www.opm.gov/flsa/oca/10tables/pdf/rus_h.pdf) to determine the hourly rate. We then multiplied the hourly rate by 1.5 to account for benefits (as implied by the previously referenced BLS news release).

Table 3. Federal Employee Salaries and Benefits

Position	Grade/ Step	Hourly Rate	Hourly Rate incl. benefits (1.5 x hourly pay rate)	Estimated time per task	Annual Cost
Economist, Project Leader	13/5	$44.43	$66.65	160 hrs	$10,664
Social Scientist	13/2	$40.51	$60.77	160 hrs	$9,723
Social Scientist	11/9	$34.84	$52.26	80 hrs	$4,181
Total					**0**

15. Explain the reasons for any program changes or adjustments.

This is a revised information collection survey and the new respondent population is reflected in the increased annual number of respondents. This survey now applies to those users who have procured Landsat imagery from EROS, as well as non-EROS Landsat users. The revisions of the survey instrument are based on the results from the 2009 collection. Questions have been changed, added, or deleted to gather specific information, as well as to reduce the burden on respondents. The justifications related to changes in the survey are attached in ROCIS. Below is a list of the most notable changes in the survey:

- Seven questions were deleted, primarily because they did not apply to this population.
- Fourteen questions were modified. The modifications consisted of expansions of or changes in the response categories rather than changes in the questions themselves, including changing open-ended questions into close-ended questions. These changes were intended to reduce the burden on the respondent by making questions easier to answer.
- Eighteen questions were added to account for the various user types present in this population and to address gaps in information gathered in the previous survey.
    - Five will be asked only of new users, who were not present in the previous sample.

- Three questions from the initial collection will be asked of only past Landsat users.

- The remaining ten additional questions address gaps in information.

- Other modifications include changing wording to Landsat instead of moderate-resolution imagery generally and additional streamlining of the instructions.

16. For collections of information whose results will be published, outline plans for tabulation and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.

The data collected during this study will be coded directly into a computerized database. Most of the statistics will be analyzed through the use of SPSS® 17. Data analysis will include several phases. The first will consist of frequency distributions of responses to each question and each index created from combined questions. These will be reported as percentages in each of the strata. Cross tabulations will be used to investigate differences between new and established users as well as between U.S.-based and international users. Cross tabulations will also be used to investigate differences between some of the independent and dependent variables. Multivariate analyses will be conducted to assess correlations between specific variables and created indices, and to ascertain whether individual variables might be combined to form a scale based on responses. These types of analyses will also be used to determine amounts of variance in dependent variables as explained by independent variables, and form statistical models for explanation.

USGS Publication Series (Open File Report), peer-reviewed publication to scientific journals, and a data visualization website are desired outlets for reporting this information. A time schedule for the project is presented in Table 4 below.

Table 4. Project Time Schedule

Task	Completion Date
Survey Information Collection	January-February, 2011
Data Analysis	March-May, 2011
Report Preparation	June-August, 2011
Final Report	September, 2011

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.

We will display OMB's expiration date on the information collection instruments.

18. Explain each exception to the certification statement "Certification for Paperwork Reduction Act Submissions".

We are requesting no exceptions to the certification statement.

Appendix 1: Comments from survey reviewers

Original Question	Comments	Revised Question
4. Which of the following best describes your use of Landsat imagery? *Please select only one answer.* ☐ I use Landsat imagery primarily for operational work (i.e., required tasks). ☐ I use Landsat imagery primarily for non-operational work, including research and education. ☐ I use Landsat imagery for a mix of operational and non-operational work.	"The explanation for the term operational, "required tasks", is problematic for me. For me [operational] implies a certain level of reliability - I can build a work flow around a data source and know that the source will be available when I need it. Some operational products rely on satellite imagery and would not/could not be produced without that input." "This seems a little confusing, but I guess if you are someone who uses it for operational projects you'll know that."	**4.** In answering the following question, consider operational work to be continuous or ongoing work which either relies on the consistent availability of Landsat imagery or is mandated or required (e.g., crop reports, routine mapping, monitoring). Non-operational work includes one-time projects or other work which is not required (e.g., scientific research). Which of the following best describes your use of Landsat imagery? *Please select only one answer.* ☐ I use Landsat imagery **primarily** for operational work. ☐ I use Landsat imagery **primarily** for non-operational work. ☐ I use Landsat imagery for a mix of operational and non-operational work.
15. At what scales were your projects that used Landsat imagery **over the past year**? *Please check all that apply.* ☐ Local (e.g., county, city) ☐ State/Province/Department ☐ Regional (e.g., more than one state, province, or department) ☐ National ☐ Continental ☐ Global	"If possible consider adding watershed, basin–landscape boundaries - are very important and do not fit in the categories presented unless you add them to local" "For the scale question, I suggest that you add a multi-county option (multi-city, etc) for those of us who live in large states like Texas, Alaska, California, etc."	**15.** At what scales were your projects that used Landsat imagery **over the past year**? *Please check all that apply.* ☐ Local (e.g., county, city, small watersheds) ☐ More than one local entity (e.g., multi-county, large watersheds) ☐ State/Province/Department/Region ☐ Multi-state, province, department, or region ☐ National ☐ Continental ☐ Global

Not applicable – new question.	"Think it would be important to ask how many years they been using satellite imagery/GIS? 2 years versus 25 is probably meaningful."	**73.** How many years have you been using satellite imagery or GIS software? *Please write a number in the box below.* Years ☐