

**Department of the Treasury
Bureau of Engraving and Printing
Request for OMB Approval of an Information Collection
for Conducting Acuity/Perception Studies**

SUPPORTING STATEMENT

A. JUSTIFICATION

(1) Circumstances Necessitating the Data Collection

In May of 2002, the American Council of the Blind, a national advocacy group representing the blind and visually impaired community, and two visually impaired individuals, brought suit against the Secretary of the Treasury alleging that the Secretary of the Treasury was in violation of Section 504 of the Rehabilitation Act, 29 U.S.C. § 794 (“the Act”), for his failure to “take[] any [] meaningful action to facilitate denomination [of U.S. currency] for individuals with blindness or low vision.”

On October 3, 2008, the United States District Court for the District of Columbia issued its ruling in *American Council of the Blind v. Paulson*, 591 F. Supp. 2d 1 (D.D.C. 2008), holding that the Defendant “violated Section 504 of the Rehabilitation Act,” and requiring the Department of the Treasury to “take such steps as may be required to provide meaningful access to United States currency for blind and other visually impaired persons, which steps shall be completed, in connection with each denomination of currency, not later than the date when a redesign of that denomination is next approved by the Secretary of the Treasury” *Id.* See Order, Attach. 1 at 1. The Department is also obligated to “file periodic status reports describing the steps taken to implement this Order and Judgment.” *Id.* Under terms of the Order, the Department must file status reports every six months until it has fully complied with the Order.

In January 2008, even before the Court issued its October 3 ruling, BEP commissioned a comprehensive study to: (1) review and analyze the needs of the blind and visually impaired community; (2) examine methods that could potentially improve access to the currency; (3) perform a cost impact analysis of the possible accommodations on various government and industry sectors; and (4) provide a decision model whereby BEP could compare and contrast various accommodations. BEP received the results of the study in July of 2009. See FINAL REPORT: STUDY TO ADDRESS OPTIONS FOR ENABLING THE BLIND AND VISUALLY IMPAIRED COMMUNITY TO DENOMINATE U.S. CURRENCY (July 2009) (“ARINC Study”), http://www.moneyfactory.gov/images/ARINC_Final_Report_7-26-09.pdf.

Since 2009, significant progress has been made toward accomplishing this objective. Work has been done to design a tactile feature and denominating pattern that are easily recognizable by touch, as well as to begin identifying an application method and type of material

that is both durable and compatible with high speed manufacturing equipment and various styles of cash handling and banknote verification machines.

Initially, BEP focused our effort on determining the most effective feature design and location on our banknote. Many different options were investigated and tested by allowing members of the blind community to evaluate several prototype samples at various meetings. These gatherings served as venues which allowed us to interact in a one-on-one basis with individuals interested in having the opportunity to investigate the prototype samples. These were generally informal interactions, but provided valuable perceptions regarding the advantages and disadvantages of each of the prototypes shown to them. These meetings included conventions, conferences and group meetings with members of a number of organizations affiliated with or representing the blind community and involved organizations such as the American Council of the Blind, The National Federation of the Blind and the California State University at Northridge.

Since 2010 we have continued to share various sample coupons containing prototype raised tactile features with members of the blind and visually impaired community at a variety of conferences, conventions and meetings to get their feedback regarding the usability of the different styles of features being investigated. This has been accomplished by allowing blind individuals to personally touch and handle prototype samples and observe their reactions and make note of their comments regarding the good aspects and poor aspects of the various samples.

As a result of this preliminary work, the design of the tactile symbol that has been determined to be one of the most perceptible to recognition by touch is a simple, hollow rectangle. Other shapes, including circles and ovals have proven to be relatively comparable to the rectangle, with all of these being marginally more perceptible by touch than other shapes that people were exposed to. This conclusion was reached after many prototype samples containing different symbol shapes including circles, triangles, ovals, slanted lines, six-dot clusters and others were evaluated by members of the blind community. In order to validate the information acquired during these informal sessions with blind users, the BEP contracted with a subject matter expert to conduct a formal, scientifically based acuity study designed to compare the relative ease with which the various symbol shapes could be recognized by touch by blind users. The results of this study, conducted by Dr. Morton Heller in late 2011, clearly validated the results of the information collected informally by BEP personnel.

Relying on the findings in the ARINC Study, and the Bureau's expertise in currency manufacturing and design, BEP recommended the following accommodations:

1. Distributing supplemental currency readers to blind and visually impaired U.S. citizens and those legally residing in the U.S. that would allow users to denominate U.S. currency;

2. Adding a raised tactile feature to each U.S. Federal Reserve note the Department of the Treasury is permitted by law to alter¹. This feature would provide users with a means of identifying each denomination via touch; and
3. Continuing the process of adding large, high-contrast numerals and different colors to each denomination that the Department of the Treasury is permitted by law to alter.

The Secretary of the Treasury approved these methods on May 31, 2011, pursuant to his authority under 12 U.S.C. § 418 to make final decisions relating to currency design. BEP is now actively engaged in implementing each of the methods through the Bureau's Meaningful Access Program, the largest component of which is the Tactile Feature Project.

This decision allowed the BEP to limit the scope of our investigation of tactile features by eliminating several options such as variable size banknotes, notches, materials embedded in the substrate, machine readable materials, perforations, etc. from further consideration.

This information collection, a formal acuity study conducted using rigorous statistical methodology, will play an important role in BEP's evaluation process. Data collected through the study will be compared with the data and information received during the informal processes discussed above. This comparison is intended to determine if the data collected in previous studies and focus groups is consistent with the results of the acuity study in terms of ranking the usability of the tested options. If found consistent, the earlier data will provide the BEP with supportive evidence to select the most effective material and application method among the various application materials and methods investigated, helping BEP determine best way to implement a tactile feature into upcoming currency designs.

(2) Use of Information

How will the information be collected?

BEP is seeking to engage blind and visually impaired individuals (study participants) to conduct acuity/perception studies, in order to gain information about specific tactile feature options it is considering for inclusion in its next U.S. paper currency redesign. These studies will involve asking the test subjects questions about the effectiveness of sample tactile features, and having the study participants perform a series of specific tasks designed to measure the usability of the tactile features being evaluated.

BEP will contract with a subject matter expert in the field of blindness and haptic perception to administer the studies. The subject matter expert will use a specific protocol, previously developed for the BEP under contract by Westat, Inc., in collaboration with

¹ Currently, U.S. law prohibits any changes to the \$1 Federal Reserve note. The Oct. 3 Order expressly states that the injunctive relief provided "does not apply to the one dollar (\$1) note, and does not require the defendant to make any changes to the one dollar (\$1) note."

Lighthouse International. Responses of the study participants will be monitored, recorded and analyzed by the subject matter expert conducting the study. BEP will provide the subject matter expert conducting the study with sample coupons containing raised tactile features: the sample coupons will be the same size and feel as U.S. paper currency and include raised tactile elements, but will be either printed with generic images or unprinted.

Information to Be Collected

A study participant will be presented with a series of sample coupons and asked to perform tasks with them and to provide responses that will assist the study administrator to evaluate the effectiveness of the raised, tactile feature.

1. Perception of tactile features:
 - a. A participant will be presented with distinct sets of sample coupons. Each set of coupons will have a separate, unique, proprietary material applied on a portion of the coupon's surface creating a tactile feature that can be sensed by touch.
 - b. The subject matter expert will use a specific protocol, previously developed for the BEP under contract by Westat, Inc., in collaboration with Lighthouse International. The BEP Project Manager / COR will ensure adherence to the protocol, and approve any revisions to the protocol if it becomes necessary during the course of the study.
 - c. The study administrator will familiarize each study participant with the location and shape of the raised tactile elements being evaluated in the study. The study participants will then be asked to perform a series of tasks, such as counting the number of tactile elements on a series of test samples, or sorting and orienting stacks of samples, which will be timed and evaluated for accuracy.

Use of Information Collected

The information collected from study participants of the subject study will generate perception, speed, and accuracy data for up to four distinct raised tactile feature options being considered by the BEP for incorporation into the next U.S. paper currency redesign. Data from this study will be used to down-select the number of raised tactile feature options that will be considered for further development and high volume testing. The perception, speed, and accuracy data will serve as input into a tactile feature evaluation matrix, developed in collaboration between the BEP, the U.S. Secret Service, the Federal Reserve Board of Governors, and the Currency Technology Office of the Federal Reserve System. This evaluation matrix, in addition to usability data, takes into account the durability or permanence of specific tactile feature options, as well as their manufacturability, performance in cash handling

machinery, and impact on the cash handling, distribution and storage within the private sector and the Federal Reserve System.²

(3) Use of Information Technology

This is a limited collection of information from individuals solicited by the study administrator. Automated, electronic, mechanical, or other technological collection techniques or other forms of information technology may be used by the study administrator as necessary and appropriate for purposes of collecting and recording this information. Any responses made by a study participant will be provided orally.

(4) Efforts to Identify Duplication

No similar information already available can be used or modified for the purposes of this information collection. The questions are being asked about specific tactile features that are in the process of design and development. As such, there is no similar information available that will help the BEP assess the efficacy of the particular samples that it plans to test.

The BEP researched to ascertain if any testing or information collections were performed earlier, and which might be used for its present purposes. Though some acuity testing has been performed by organizations other than BEP, earlier acuity testing cannot be used for the BEP's present purposes because the BEP will be asking for feedback about specific sample tactile features which are being considered for incorporation into U.S. paper currency. Previous studies performed by others on behalf of the Bank of Canada involved samples and features different from those being contemplated for use in United States currency designs.

(5) Impact on Small Entities

The data collection is not anticipated to burden small entities.

(6) Consequences of Less Frequent Collection and Obstacles to Burden Reduction

Consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently.

One of the best opportunities BEP has of engaging blind and visually impaired persons in evaluating the effectiveness of proposed raised tactile features currently under development is to meet with them directly and engage them in acuity/perception studies. These studies will provide the most effective means of assessing the effectiveness of candidate tactile features. This feedback, along with that acquired at interactions with the blind and visually impaired community at conventions, conferences and other meetings, is crucial to the BEP's goal of providing meaningful access to U.S. paper currency for blind and visually impaired persons. According to subject matter experts in the field of blindness, verified by limited testing by the

² Note, it is possible, but unlikely that additional studies may need to be conducted using the same or similar protocol, metrics and population study after implementation of the selected feature.

BEP, blindfolded sighted individuals do not provide feedback representative of blind and visually impaired individuals.

The inability of BEP to collect this information means that BEP will have less direct input from the community of individuals for whom tactile features are being developed - blind and visually impaired persons.

(7) Circumstances Requiring Special Information Collection

There are no special circumstances involved in this information collection.

(8) Solicitation of Comments on Information Collection

As required by 5 CFR 1320.8(d), a notice of this proposed data collection appeared in the Federal Register, Vol. 77, No. 19, p. 4626-27 on January 30, 2012. *See* Attach. 3. There were no public comments. An updated 30-day notice of this proposed data collection appeared in the Federal Register, Vol. 78, p. 27,295 on May 9, 2013. *See* Attach. 4. There were also no public comments.

The BEP, also solicited and accepted comments on the means by which blind and visually impaired persons could be provided meaningful access to United States paper currency previously in 2010. A copy of the Federal Reserve notice is attached. *See* 75 Fed. Reg. 28,331 (May 20, 2010), Attach. 5, Tab 4.

(9) Payment or Gift to Respondents, Other Than Remuneration of Contractors or Grantees

Each participant will receive a small payment, estimated to be \$45 or less, from the study administrator for participating in the study, and/or to offset expenses directly attributable to their participation in the study, such as taxi fare or the use of public transportation.

(10) Assurance of Confidentiality

Participants will be informed:

1. Why the information is being collected;
2. How the information provided during the testing will be used;
3. The burden estimated by the BEP; (approximately 30 to 90 minutes per participant, depending on the study protocol ultimately chosen)
4. The nature of their response, which in this case will be voluntary;
5. The nature and extent of confidentiality, which in this case will be maintained by BEP as nonpublic information. Respondents will be informed, however, that the information provided will be subject to disclosure under the Freedom of Information Act.

6. Further, participants will be notified of BEP’s need to display or otherwise inform them of a currently valid OMB control number. To the extent that number is available, it will be provided.

The actual script to be used will be developed by the study administrator and reviewed by Treasury and OMB prior to use. The BEP will not ask a participant for his or her name, address, phone number, social security number, date of birth, or for any other information that may be personally identifiable.

(11) Justification of Sensitive Questions

The BEP will not be asking sensitive questions.

(12) Estimated Burden of Information Collection

Type of Intake	Estimated Number of Respondents	Estimated Number of Intakes per Respondent	Average Burden Hours per Intake	Estimated Total Annual Burden Hours Requested
In-Person Questions	220	1	60-90 minutes	330

The burden hours are calculated based upon the following:

BEP commissioned a comprehensive acuity study in late 2011 in which blind and visually impaired persons evaluated samples and answered questions about various tactile features BEP is considering for inclusion in future U.S. paper currency designs. Though that information collection was disapproved for failure to comply with the requirements of the Paperwork Reduction Act, BEP learned that the average time to obtain feedback from each participant in the acuity study ranged from 60 – 90 minutes. BEP is using that information to estimate the time for responding to questions during future studies and seeking approval of this proposed information collection.

29 individuals participated in the first acuity/perception study. Based on that total, BEP has estimated about 220 total participants will be used for additional acuity/perception studies over the course of this development effort.

(13) Estimated Total Annual Cost Burden to Respondents

There will be no annualized capital or start-up costs for the respondents to collect and submit this information.

(14) Estimated Cost to the Federal Government

The BEP anticipates conducting one acuity/perception study over the course of this development effort at a cost of up to \$400,000. Sample coupons are manufactured in conjunction with development activities associated with the overall project to develop and evaluate a variety of designs of raised tactile features; therefore, minimal direct cost is attributable to providing sample coupons to be used during the studies. The actual cost associated with producing individual samples has not been captured and will not impact this study.

The primary cost associated with conducting these acuity/perception studies is the cost incurred by contracting with a study administrator. The contract cost to administer the initial acuity/perception was \$25,000. The BEP is using this amount to predict the total cost of contracting subject matter experts to administer the additional acuity/perception studies anticipated over the duration of this development effort.

(15) Reasons for Change in Burden

Not applicable. This information collection is part of a new program.

(16) Plans for Tabulation, Statistical Analysis, and Publication

Publication and Tabulation

The BEP is not publishing results of this information collection. The results may be shared with BEP's stakeholders as part of the process of considering tactile features for incorporation into future currency designs. The information is meant to be interpreted only in light of a small pool of respondents estimated to be 220 in number.

The information will give BEP and its stakeholders basic information on the effectiveness of tactile features developed to date. The stakeholders who will work with the BEP in reviewing the information collection include: The Department of the Treasury, the Federal Reserve Board of Governors, the Currency Technology Office, the United States Secret Service, and the Central Bank Cash Machine Group ("CBCMG"), a consortium comprised of BEP, its stakeholders, other central banks throughout the world, and members of the banknote equipment manufacturing industry; the CBCMG discusses issues pertaining to the handling and processing of U.S. paper currency and other currencies throughout the world.

Statistical Analysis

Standard statistical analysis techniques will be employed by the study administrator during analysis and reporting of the study result. BEP will use the results of this study (e.g., accuracy and speed of counting and sorting tasks with different tactile feature options) to down-select the number of options being developed.

(17) Reasons Why Displaying the OMB Expiration Date is Inappropriate

Not applicable. The expiration date for OMB approval will be displayed on any form utilized for the information collection.

(18) Exceptions to Certification Requirement of OMB Form 83-I

Not applicable. The BEP is not requesting any exceptions to the certification statement identified in Item 19 “Certification for Paperwork Reduction Act Submissions”.