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Testimony of
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House Committee on Oversight and Government Reform

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Mr. Chairman and Members of the Committee:

Thank you for inviting me to testify on "Preventing Stimulus Waste and Fraud." This committee knows why it is so important to keep close tabs on the nearly $800 billion of spending contained in the American Recovery and Reinvestment Act. The question is: how do we do it?

Over the last few years my research has focused on how Internet technologies can be leveraged by government and citizens to increase transparency and thereby ensure accountability. I'm happy to share with you some of the things I have learned.

You are one of the most important institutional organs of oversight. But you cannot do it alone, and the public is eager to help. Perhaps most importantly, oversight is not accomplished at a single point in time. It is best accomplished through continuous, multifaceted analysis.

Luckily, we are moving into a networked media environment where direct access to data will allow a wide variety of actors and entities in the public to do essentially direct oversight of you in the government, and of programs like the recent economic stimulus act. We in the transparency community want access to data so that we can do this public oversight.

Crowdsourcing Accountability

Dozens of inspectors general and official auditors around the country will follow the stimulus money. They will do commendable work, but they can't possibly look at every payment and every transaction.

While we might want to, we can't hire an army of auditors charged with tracking every single dollar. However, we can supplement the very small number of professional auditors with a very large number of small contributions from citizens. This is an approach sometimes called crowdsourcing, in which complex tasks are distributed among

a wide community of interest. Almost any short phrase entered into Google, for instance, will retrieve a top-ranked result from Wikipedia, an entirely crowdsourced encyclopedia.[1]

In fact, this very testimony you are reading was crowdsourced. I published a draft on a wiki web page and alerted other transparency activists and academics of its existence.[2] In the 24 hours that the wiki was online, over a dozen persons made edits and additions to the words in this document—all of them adding value.

If the government requires clear, timely, and profound reporting of how every dollar is spent, everyone—not just government auditors—could keep track of the money. Millions of citizens around the country would be able to look at the transactions related to recovery-funded projects in their neighborhoods. Thousands of journalists could also keep an eye on the spending and the work being done in the communities they serve. Contractors would be able to keep an eye on their competitors, and academics and watchdog groups could sift through the spending data to find interesting patterns.

The point of this exercise would not be to foster "gotcha" games. Sure, we should suss out fraud, waste, and abuse when it's there, but, more importantly, we want to make sure that government managers spend money wisely and that projects are run efficiently. Crowdsourcing is one way to overcome the temporal problems associated with traditional oversight. Local passions, ignited by the spark of local projects, are likely to increase with the passage of time and keep all participants in the economic recovery honest and on track even after traditional watchdogs have turned their attention to the next problem.

How would government enlist the help of citizens around the country to keep recovery spending accountable? It doesn't have to enlist help: it just has to provide data. If the government makes the raw spending data available, people across the country will build tools that allow citizens to sift, sort, and report it.

A strong community of transparency activists and enthusiasts is eager to do this. Earlier this year, I launched the website StimulusWatch.org with the help of two very talented volunteer software developers, Peter Snyder and Kevin Dwyer. The site presents the nearly 20,000 "shovel-ready" projects that the U.S. Conference of Mayors reported as candidates for stimulus funding. Citizens can easily find a list of projects in their hometown and then rate, discuss, and add factual context to each project. The site has received 2 million unique visits in its first month.

Within hours of launching the site, users found projects such as golf courses and dog parks and voted them to the top of the least critical projects list. Users also heavily annotated the web pages of projects that at first blush seemed unworthy of funding with information and explanations of the merits and necessity of these projects.

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[1] Jerry Brito, *Hack, Mash & Peer: Crowdsourcing Government Transparency*, 9 Columbia Science & Technology Law Review 119 (2008), *available at* http://www.stlr.org/html/volume9/brito.pdf.

[2] *See* Jerry Brito, Contribute to my congressional testimony, Mar. 16, 2009, *at* http://jerrybrito.org/post/87008457/contribute-to-my-congressional-testimony

Now that you have passed the Recovery Act, we want to expand the capabilities of our website to allow citizens to track the projects this act will fund in their communities. Among other things, we would like to build a tool that allows citizens to discuss a project, track and annotate payments related to a project, and rate a project's performance.

I know that other web developers would like to make similar tools, including applications to track job creation and to plot stimulus dollars on maps coded with unemployment and other statistics. There is no limit to the number of useful and innovative presentations that public-minded netizens can create.

But before we can build any of these tools of accountability, we need the raw spending data. As I said before, citizen participation in the accountability process requires clear, timely, and profound reporting of how every dollar is spent. Without question, the most effective way for government to make such a large dataset available is to put it online in useful formats.

The key to the success of such a project is that last phrase: *useful formats*. You must present data in a standard, web-friendly, machine-readable format that can be aggregated, parsed, and sorted.

Although my techie friends will give me grief for simplifying it this way, think of it as rows in a spreadsheet with standardized column headings. You could make a full and thorough disclosure of spending in prose, or even in haiku, but while such a report could fully account for every dollar, a computer could not analyze it. However, if you released the information in spreadsheet form, people could sort by the different columns: low to high dollar amount, state or city, contractor, or any other available column.

If you make the data available in a nonproprietary structured format such as EXtensible Markup Language (or XML for short), and using a common standard for the expression of required information, a citizen could then sort the data in much more complicated ways. For example, he could easily look up the top ten payments to contractors with names that begin with the letter "R" in a particular congressional district. Information made available in useful formats also allows third parties to build interesting tools such as StimulusWatch.org or the many third-party tools found on the Sunlight Foundation's website.[3]

Clarifications Needed

Now that you understand what's possible, I can tell you what the community of web developers and transparency enthusiast need to make it happen. Before we can make useful tools for the American people, we need the data in full. To make sure we have that, we need you to clarify and strengthen existing data disclosure requirements.

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[3] Sunlight Foundation, Insanely Useful Websites, *at* http://sunlightfoundation.com/resources.

The American Recovery and Reinvestment Act calls for the disclosure of spending information online. However, its provisions are vague and do not require structured machine-readable formats. The Office of Management and Budget has issued guidance to federal agencies on how they should comply with Recovery Act reporting requirements, but that document also leaves many questions unanswered.

There are four key issues that the Administration and the Recovery Accountability and Transparency Board must address soon: the depth of disclosure, standardization, aggregation and centralized access.

First is the question of how deeply disclosure will go. While the Recovery Act requires that recipients of federal stimulus funds report, to awarding agencies, how the funds are spent, there is no clear instruction that every level of subcontract or subgrant must be disclosed.[4] The OMB Guidance interpreting the Act for agencies states that,

> Reporting requirements only apply to the prime non-Federal recipients of Federal funding, and the subawards (i.e., subgrants, subcontracts, etc.) made by these prime recipients. They do not require each subsequent subrecipient to also report. For instance, a grant could be given from the Federal government to State A, which then gives a subgrant to City B (within State A), which hires a contractor to construct a bridge, which then hires a subcontractor to supply the concrete. In this case, State A is the prime recipient, and would be required to report the subgrant to City B. However, City B does not have any specific reporting obligations, nor does the contractor or subcontractor for the purposes of reporting for the Recovery.gov website.[5]

This is very troubling. If the government wants to ensure meaningful accountability, then we must have transparency at every level of transaction. It is not enough for citizens to know that the EPA made a grant to New Jersey, which in turn made a sub-grant to Newark. We also need to know that Newark made a payment to "Barone Sanitation," which a citizen with local knowledge could recognize as a firm owned by a councilmember's son-in-law.

Congress and the Administration should make it clear that in fact every dollar will be accounted for all the way down the chain. You should also make it clear that you will publish the full reports online in useful formats. Right now, despite the Act's mandate for

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[4] American Recovery and Reinvestment Act of 2009 § 1512 [hereinafter ARRA].

[5] Office of Management and Budget, Initial Implementation Guidance for the American Recovery and Reinvestment Act of 2009, Feb. 18, 2009, pages 14-15, *available at* http://www.whitehouse.gov/omb/asset.aspx?AssetId=703.

a transparency website, there is nothing in the Act or the Guidance guaranteeing that you will make the complete dataset of recipient reports available online.[6]

The second key issue is standardization. At this point, the OMB Guidance does not explain what fields we should expect Recovery.gov to publish, if and when spending reporting becomes available. That is, we don't know what the columns of our metaphorical spreadsheet will be; we don't know by what data fields we will be able to sort.

The Act requires that initial recipients report spending using "data elements required to comply with the Federal Funding and Transparency Act[.]"[7] These include such elements as the name of the entity receiving the award, the amount of the award, program source, description, city and state, etc. But what data elements will actually be published has not been addressed. Nor do we know in what format we can expect it.

Those of us who plan to use Recovery.gov data for the public's benefit would like to know as soon as possible what exactly Recovery.gov will offer so that we can begin working on our software applications. Additionally, knowing ahead of time what standards are in the works will allow us to give feedback to the team building the government's transparency.

It is important to have data in a common structured format, ideally expressed in XML. This does not need to be the final, perfect, national standard, but a common open standard needs to be applied to all Recovery.gov datasets.

Closely related to standardization is the third issue of aggregation. When information sharing is standardized along critical dimensions of who, what, where, and when, it becomes much easier to automatically aggregate, or roll-up, information automatically with computers. The Recovery.gov website is already nicely aggregating public relations announcements from respective agencies. What we need now is more information about how the financial and performance data will be aggregated.

The fourth and final issue is centralized access to the data. The distributed nature of the projects means information will ultimately come from many sources, just as information on the Web comes from many sources. But for the information to be user-friendly, this information must be searchable from central locations by both humans and computers. Just as search engines provide one-stop search for the Web, citizens and application

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[6] While ARRA §1512 (c) requires stimulus fund recipients to report to awarding agencies how they have spent those funds, there is arguably no requirement in the Act that those reports be made available to the public. ARRA § 1512 (d) state that agencies "shall make the information in reports submitted under subsection (c)" available on a website. (Emphasis added.) This is not the same as saying that agencies "shall make the reports submitted under subsection (c)" available on a website. It would be helpful to know that "information in reports" means that the actual reports, in full, will be disclosed.

[7] ARRA § 1512 (c)(4)

developers should be able to go to one central location—presumably Reovery.gov—to find every single reporting dataset.[8]

The Act requires agencies to publish quarterly spending reports on "a website,"[9] but does not specify which. Reading the Act, I assume that it is on the agencies' own websites. The Guidance seems to confirm this, directing agencies to publish reports on a /recovery subdirectory of their main sites. Compliance with the Guidance will scatter reports in dozens of websites around the web.

This approach is not necessarily a bad thing. In fact, it might be a good way to ensure scalability. That said, if the central "library" at Recovery.gov does not house all datasets, then there must at least be one central and easy to use "card catalog" with references to all datasets. Again, it would be useful if we knew ahead of time what we might expect.

Conclusion

In his first day in office, the President signed a "Memorandum on Transparency and Open Government."[10] The three central themes of the memorandum—to which the President committed the Administration—are transparency, participation, and collaboration.

About public participation, the memorandum states that "Knowledge is widely dispersed in society, and public officials benefit from having access to that dispersed knowledge." About collaboration, the memorandum states, "Executive departments and agencies should use innovative tools, methods, and systems to cooperate among themselves, across all levels of Government, and with nonprofit organizations, businesses, and individuals in the private sector."

A community of interested and knowledgeable parties wants to participate and collaborate with the government to make the online disclosure of recovery spending data succeed. For example, a wide range of groups and individuals from all parts of the political spectrum have formed a Coalition for an Accountable Recovery, and I commend to you and the Administration the Coalition's vision statement and proposed online transparency architecture, which are attached.[11]

I'm happy to report that so far the Administration has been quite good at listening and taking suggestions from those of us who are interested in recovery data. Unfortunately, it has not been as good at sharing information in return, a necessity in true collaboration.

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[8] Providing centralized search does not imply a monopoly. The SEC's Edgar database centralizes SEC filings, but third parties provide alternative, value-added centralized search, too.

[9] ARRA § 1512 (d)

[10] President Barack Obama, Memorandum for the Heads of Executive Departments and Agencies on Transparency and Open Government, Jan. 21, 2009, *available at* http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment/

[11] Also available at Coalition for an Accountable Recovery, *at* http://www.ombwatch.org/car

There are many of us who would like to build accountability tools for the American people. But we need to know what we can expect from Recovery.gov, and the Administration has not been forthcoming.

We, the people, need to know that there will be—as there should be—disclosures of the funds spent at *every* level. We need to know where and how we will be able to access the data.

Ideally, the folks building Recovery.gov would be allowed to talk with us so we can learn what they are planning and we can tell them what we'd like to see included, but the most crucial thing the Administration must do is realize that it cannot release data related to this unprecedented expense of our money on the traditional limited "need to know" basis. It's our money. We're willing to track it and take part of the responsibility for seeing it is well spent, but to do so, we need the data.

Thank you.

A NATIONAL SYSTEM FOR COLLECTION AND DISSEMINATION OF GOVERNMENT SPENDING DATA

The need:

A comprehensive data collection and dissemination approach to government spending that helps the public understand how government money was used and whether it produced results.

The approach:

Transparency and accountability of Recovery Act funding are key elements, but not the sole issue. The main objective is to develop a system for transparency that applies to all government spending, starting with the Recovery Act.

As a starting point, USASpending.gov, a mandated federal website that requires disclosure of information about nearly all government spending, including who gets how much money for what purposes, should be the "data house" for Recovery Act (and other government) spending. The government now has experience with that framework and can quickly address any weaknesses in it. Using USASpending.gov as the "data house" will provide consistency for the public.

Government needs to employ Web 2.0 technologies for secure information sharing, collaboration and functionality of the web. At a minimum, government websites must provide:

> a. Access to the underlying raw data;
>
> b. Open programming interfaces that allow websites and developers to share data; and
>
> c. Timely, accurate data on how federal funds are spent.

Incorporating these principles, USASpending.gov would not be the sole source of information on spending, but should be the core source of data about who is getting how much money for other sites such as Recovery.gov, state websites, and non-government websites. In this manner, others sites could complement the "official" spending data with other appropriate information, including data about results.

Each recipient of federal funds, including their subcontractors, should be required to report electronically on the funds received from the federal government, including on how the funds were used with the aim of measuring results. The reports should use common standards and data definitions so that the reported information is compatible with the federal USASpending.gov and related websites such as Recovery.gov – and each recipient or sub-recipient should have a unique identifier to make data sharing easier. Websites created by states need to provide comparable data about state spending. An online tool and an automated hotline should be established for citizens and government workers to report any misuse of Recovery Act funds.

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Moving Towards the Ultimate Objective:

1. **Make sure USASpending.gov has accurate, timely data.** USASpending.gov has made remarkable progress since its inception. Accordingly, it should be built upon as the platform for housing government spending data, including under the Recovery Act. However, among the improvements USASpending.gov needs to address, these three are top priorities:

   a. *Ensuring agency spending data is up to date.* It appears some of the work will be placing greater pressure on agencies to report the data on time, and some is achieving faster loading of data obtained from agencies or the Federal Procurement Data System.

   b. *Improving data quality.* There are a host of issues that must be addressed regarding quality of the spending data, but number one is to improve and make publicly available the parent ownership identifier. Without quality information on parent ownership it will be difficult to analyze the Recovery Act data or any spending data.

   c. *Improving access to the data.* The Application Programming Interface (API) allows other websites to actively search and pull information from the website, thereby allowing the constantly updating data to be more easily used throughout the internet. However, there are at least two ways the API needs to be improved. First, the 1,000 record limit needs to be lifted so that Recovery.gov, state websites, and other entities can make maximum use of the API. Second, the parent company identifier must be part of the data that can be obtained through the API.

   In addition to improving the API, USASpending.gov needs to improve its services for downloading data, either subsets of the data or the full database. The service for downloading data under specific searches is extremely useful, and a similar approach to broader data elements would be useful.

2. **Create the right method for tracking Recovery Act spending.** The funds appropriated under the new Recovery Act should be assigned an additional budget code reflecting their use [or designation] for recovery, In addition to other traditional spending codes and identifiers that designate the program or project the funding is for and the agency that is spending the money. This added code for Recovery Act funds will make it easy to pull the data from USASpending.gov for sites such as Recovery.gov.

3. **Make sure we have the right data.** The success of Recovery.gov rests with marrying the spending data from USASpending.gov with key data that will help the public, news media, analysts, and policymakers see that the money was spent wisely. Some Recovery Act spending is intended to create or preserve jobs, some to build longer-term investments that will help stimulate the economy, and some to create short-term stimulus. Whatever the purpose, there should be metrics that identify results.

   For some funds, new disclosures will be necessary to evaluate the expenditures. For instance, because not everyone receives equal benefit from tax relief, it is important to disclose information about such provisions. This might start with disclosure in aggregate

form, but should progress over time to greater detail while never revealing personally identifiable information. Other funds, such as support for Medicaid, food stamps, and unemployment support, already have program-based performance measurement tools. These measures, usually housed in the respective federal agency, should be available through Recovery.gov.

A large portion of the Recovery Act will go to states for infrastructure and other projects that generate jobs. For this type of spending, we need:

    a. The activity/services to be provided under the contract, grant, loan or subsidy, including copies of the contract;

    b. Relevant performance measures (e.g., jobs saved or created, wages and benefits paid for such jobs, demographics of those hired); and

    c. Performance data about the recipient of federal funds (e.g., on-time performance, quality of work).

Strong requirements must be instituted for timely electronic reporting and posting of this data, preferably every 30 days after receiving Recovery Act funds.

Information about contractors lobbying executive branch officials at the state or federal level for money under the Recovery Act should be posted to Recovery.gov. Any communication with an executive branch official by an employee of an entity applying for funding or an individual representing an entity applying for funding must provide information about the communication, the cost of such communications, and the people involved.

4. **Make sure there are strong reporting requirements.** The federal government should explore expanding current reporting mechanisms. If, however, these mechanisms prove too limited, slow or difficult to use, or cannot be quickly improved, then new reporting structures should be established as quickly as possible. Distribution of federal funds should be conditioned on satisfactory reporting by recipients and sub-recipients of federal funds.

More specifically, there should be:

    a. Clear definitions of reporting requirements, including jobs saved and created.

    b. Standards for reporting so that data can be manipulated and used quickly. One common open standard is eXtensible Business Reporting Language (XBRL), which uses XML syntax and related XML technologies to communicate business and financial information.

    c. Requirements for open competition for funds, including money spent by states. Any exceptions to open competition should be identified on the Recovery.gov website accompanied with a justification for why open competition could not be done.

    d. Requirements to electronically report directly to the federal government as well as to the state or local government if a recipient of pass-through funding.

e. Each entity receiving federal funds, including sub-recipients, should be assigned a unique identifier for award and for entity. Each entity's unique identifier should be correlated with unique identifiers for parent company.

Because states have a critical role in spending the Recovery Act funds as well as other federal funds, it is essential for the head of the head of the Office of E-Government and Information Technology within OMB to meet with states and their representatives to develop common ground on reporting requirements. These reporting requirements should be flexible enough so that states can employ them on their websites and their own state spending. One issue that should be resolved is how to report data about federal spending that is co-mingled with state funds. (While this may not be a major issue for Recovery Act funding, it will be for other federal appropriations.) States should be encouraged to produce their own searchable websites of their spending, ideally pulling the information directly from the federal website through an API or other open programming interfaces.[1]

5. **Ensure user friendly services on the website.** There are a variety of services that should be implemented. Three top items include:

a. There should be a section on website for whistleblowers and others to identify misuse of funds. The individual posting information should have the option of making the information public or confidential. There needs to be dedicated staff within government reviewing and acting on this information.

b. Information on the website needs to be searchable by recipient of federal funds, geography, project type, federal agency, number and type of jobs, and other criteria. The data should be geo-coded for mapping applications.

c. Beyond posting data on the website, the Recovery.gov website should have information about oversight reports as required by the law. There should be a section of the website inviting public feedback on site improvement, data mash-ups, and other innovations.

6. **Provide resources for data analysis.** Not only should the federal government be analyzing the data collected about Recovery Act spending, but they should provide resources to states to conduct state-specific reviews.

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[1] It may be that a requirement for uniform state posting of stimulus information is the best way to ensure consistent state level reporting.

March 5, 2009

Steering Committee
(*in formation)*

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Interim Recovery.gov Data Reporting Architecture

On February 12, the Coalition for an Accountable Recovery (CAR) provided a vision statement[1] for developing a national collection and dissemination system to monitor government spending. This document expands on that vision by providing the first steps in building the architecture for such a system, starting with federal responsibilities in implementing the American Recovery and Reinvestment Act (herein called the Recovery Act).

The architecture in this paper starts from the activities outlined in OMB Director Peter Orszag's memo to agency heads on implementing the Recovery Act (herein called OMB Guidance).[2] It makes several other assumptions, including:

- The data provided through USASpending.gov will continue to be disclosed, even as the website and the data may be improved.

- That each recipient of Recovery Act funds has an obligation to report on use of those funds. Currently the OMB Guidance only requires the prime recipient and the first sub-recipient to report. It does not require those receiving money from the sub-recipient to report, which we think is a major problem that requires correction. Given the Recovery Act's specific definition of "recipient," this document will refer to all organizations who receive more than $25,000 in Recovery funds as "ultimate organizational end users."

- Identifying who gets how much money for what purposes will be a major governmental accomplishment. However, we believe such information needs to be combined with information about what the spending achieved, even beyond the number of jobs saved and created as called for in the OMB Guidance. Such information can be used to demonstrate the accomplishments of government funding, just as it can be used to draw attention to waste, fraud and abuse.

- Our hope is that the Obama administration will use this performance data as a learning tool to improve the quality and effectiveness of federal programs. Those involved in the delivery of government services seem to draw public attention only for failures – this "gotcha" approach is manifest in scorecards of programs. Yet a good

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[1] http://www.ombwatch.org/files/budget/CAR_Govt_Spending_Disclosure_Model.pdf
[2] Peter R. Orszag, "Initial Implementing Guidance for the American Recovery and Reinvestment Act of 2009," M-09-10, February 18, 2009, available at http://www.whitehouse.gov/omb/asset.aspx?AssetId=703

monitoring system doesn't just give out grades, it also uses interim goals so that self-correction and improvement can be undertaken.

- The Recovery Act depends heavily upon state and local governments, as well as corporations and nonprofit organizations, over which the federal government may have little control. The data collected by the federal government will reveal weaknesses (as well as strengths) in the American governance infrastructure that could be valuable on at least two fronts. First, the federal government should use interactive tools to pursue discussion on how the data from this accountability initiative can help improve governance structures. Second, the federal government needs to work collaboratively with state and local governments, as well as corporations and nonprofits, to identify how to improve accountability and transparency for future spending beyond the Recovery Act.

- No single website will serve all the needs of the public. Therefore, Recovery.gov data must be organized in ways that can be redistributed to states and non-governmental organizations in simple, machine-readable formats. We assume that non-governmental organizations will add context to the data that is disseminated to help the government better understand what works.

- The model described herein assumes that federal agencies will continue to report awarded grants and contracts to USASpending gov and that recipients, sub-recipients, sub-sub-recipients, etc. report to a central reporting system on how Recovery funds were used and what the end results of those expenditures were (see graphic on page 11).

This report is divided into four sections:

1. Data Elements: The data elements that should be collected by the federal government
2. Reporting Architecture: The methods for reporting of the data
3. Data Access: The means by which machines and people will consume the data
4. Changes in Policy: The changes to laws and OMB guidance that may be necessary to enact the model described herein

1. Data Elements

The choice of what data are collected is at the heart of determining whether Recovery.gov will be groundbreaking in building new levels of transparency and accountability. Requesting the right data elements will be critical to ensuring that the recovery website can answer the questions the public will have about the government's actions. A great deal of information will need to tracked for each transaction/project/ultimate organizational end user, some being information that has never been collected and some being information that has been collected but not linked to this type of accountability endeavor. While we realize that requiring the reporting of numerous data elements can slow down the process, only with sufficient information will the recovery data be useful to taxpayers, combined with other information sources and analyzed by other groups. Accordingly, we have carefully balanced the burden imposed on those who must report with the importance of accurate, accountable information to ensure taxpayer dollars are wisely spent.

We strongly believe that we have found the right balance in the type of data elements that must be collected. At the same time, we understand that there may be ways of automating the

collection of information to minimize the burden on those reporting – and we are very supportive of such approaches.

1.1 Use USASpending.gov data fields

As a starting point we recommend using the data elements tracked in USAspending.gov for contracts, grants, and loans. However, just duplicating the data elements from this database would be insufficient to accomplish the level of transparency called for by the Recovery Act.

1.2 Use of Identifiers

Identifiers will be essential to tracking the flow of money throughout the country. The recovery data will have to include unique identifications (names or numbers) for all ultimate organizational end users (including sub-recipients), projects, geographic regions (cities, counties, congressional districts, street addresses), program areas, etc. Ensuring consistency in the use of these identifiers will be a challenge. Without a methodology such as auto-completion fields, pull down menus, or confirmation fields, simple misspellings and data entry mistakes will make federal funds disappear in the system.

With so many entities reporting data, it will be critical to provide clear guidance and definitions for all fields. Reports must understand what is being asked for and how they should be reporting each field. Logical groupings into basic categories such as entity identification (name, parent company, industry, etc.), expenditure elements (amount, date of payment, etc.), contract specific (competition, contract type, etc.), and grant specific (program area, etc.) will help those reporting better understand what is being sought in each group.

1.3 General Data Elements

> *1.3.1 Geographic Information*. Ultimate organizational end users of Recovery Act funds should report information about where the agency or company is located, as well as the primary service location. It is critical that the public obtains the primary service location for the specific project funded, whether that project be a bridge or a research lab, and not just where the ultimate organizational end user's (public or private) address is. Geographic information should be reported by congressional district, street address, ZIP code, and census tract. Some information, such as census tract, may not be readily known to those who must report. In such cases, software may be able to translate street addresses into census tract automatically, thereby minimizing burden imposed on those who must report.

> *1.3.2 Full Contract Information*. The OMB Guidance calls for contract summaries on all contracts larger than $500,000 and those awarded without open competition. This is significantly better than nothing, but is not fully satisfactory. The full contract (with redactions, if necessary), and the Request for Proposals should be posted.

> *1.3.3 How Money Is Spent*. The total amount of the individual Recovery Act award that is the subject of the report and the amount spent or committed by the reporter to date, along with information about the number of jobs created or retained, wages paid for those jobs, and other benefits of the award. (More on jobs is provided below in 1.4.)

1.3.4   *Meeting Success Metrics.* Whether the award is on track to meet the established metrics for success, and, if not, what needs to change to meet the goals.

1.3.5   *Other Benefits of Spending.* There should be reports of other intended benefits of Recovery Act funding, such as energy efficiency improvements, avoided carbon dioxide emissions, and students' academic progress, for example.

1.3.6   *Point of Contact.* For each entity that receives or administers Recovery Act funds, the identity and contact information of the individual designated as its primary coordinator for recovery-related efforts.

1.3.7   *Labor Agreements.* Any labor agreements or memoranda of understanding regarding labor practices related to work conducted with Recovery Act funds should be made publicly available.

1.3.8   *Uniformity for Similar Types of Spending.* There needs to be clear instructions for different types of spending: formula grants, discretionary grants, mandatory spending, contracts, etc. Each similar type of financial award should have similar core reporting requirements.

1.4 Jobs Data

Job creation is one of the primary goals of the Recovery Act. In this section we offer some initial suggestions on how to track the employment impact of the act in the most complete and effective way. Because we believe that job quality is inseparable from job creation, we also offer some suggestions on data collection relating to wages, benefits and hours.

1.4.1   *Estimates vs. Reporting*

The Recovery Act and the initial OMB Guidance refer to an obligation on the part of recipients to provide *estimates* of jobs created and retained. This needs clarification. We want to be sure the use of that term is not seen as diminishing the obligation of ultimate organizational end users to keep careful records of their activities and to provide reports that feed into Recovery.gov. We trust that all contractors and subcontractors hired with Recovery Act funds will be required to provide actual data based on their payroll records.

We understand that employers may have to resort to estimating when it comes to determining, for example, how many workers can be considered to have been retained as a result of Recovery Act–related business (especially when a firm has both Recovery Act and non-Recovery Act projects). What we want to avoid are situations in which government agencies substitute their own estimates of job creation and retention for actual payroll data from employers.

1.4.2   *Who Does the Job Reporting?*

The OMB Guidance gives the impression that reporting requirements will extend no farther than the states. Particularly in the case of job data, this is not adequate. An obligation to report jobs data should extend to all final employers receiving Recovery Act funds from a federal agency, from state agencies through

which the federal funds flow, or from a contractor hired by one of those federal or state agencies. This means that all contractors and subcontractors on Recovery Act-funded projects should be reporting their jobs data.

A more complicated question is whether to extend the reporting requirement to firms that serve as suppliers to Recovery Act contractors and subcontractors, which generate what are known as "upstream" ripple effect jobs. Their job creation and retention will be properly seen as an indirect impact of Recovery Act spending, but it may not be practical to expect those companies to report. The same would go for jobs generated by the spending power of workers directly created by Recovery Act funding, known as "downstream" ripple effect jobs. To avoid inflated ripple-effect claims, credible economic input-output models, such as the RIMS-II Series of the Bureau of Economic Analysis, can be employed.

Also to be resolved is where the reporting responsibility lies with employers that have multiple worksites. The Multiple Worksite Reports used by the Bureau of Labor Statistics could serve as a model. The tagging of corporate entities will make it easier to determine relationships among different reporters.

1.4.3   What Gets Reported?

- *Hours of work*. Given the lack of a universal definition of a "job," we recommend reporting on the total number of hours of work performed on Recovery Act projects. The number of workers (including both employees and independent contractors) putting in those hours should also be reported. Together, these two figures will allow one to determine both the number of full-time equivalent positions being generated by Recovery Act funding and the average number of hours for each worker (which will indicate whether excessive overtime or excessive use of part-timers is taking place).

- *Creation vs. Retention*. Given that the Recovery Act is concerned with both job creation and retention, employers should be required to divide the work time in two categories: hours of work on new activities that would not be occurring but for the existence of Recovery Act funding, and hours of work on previously occurring activities that would not be continuing but for the existence of Recovery Act funding. Clearly, this is an area in which employers will have to engage in some degree of estimation, but they should be given some guidance. For example, the U.S. Department of Commerce Economic Development Administration states that for a job to be claimed as retained, its loss must be "imminent and demonstrable."

- *Type of work*. If employers are allowed to combine all kinds of jobs into a single number, that will reveal little about the nature of any specific jobs being created or retained by Recovery Act. Employers should be required to break down their work-time reporting into a short list of occupational categories, such as those used in the Equal Employment Opportunity Commission's EEO-1 Survey.

- *Wage levels*. For each of those occupational categories, the employer should be required to report the total payroll and to divide it by the total number of hours to show the average hourly pay for each group. Criteria for calculating the payroll could

follow the procedures used by the Bureau of Labor Statistics in its monthly Establishment Survey.

- *Healthcare coverage*. Given the Obama Administration's emphasis on reducing the number of Americans without medical insurance, employers should be required to report how many hours of work in each group were performed by workers receiving company-provided health insurance.

- *Demographic characteristics*. It is a matter of great concern that Recovery Act funds end up helping all sectors of the population. For this reason, employers need to provide demographic information on the workers they are hiring and retaining. Here, too, the EEO-1 Survey is a long-established model.

1.4.4   Mechanics of Reporting

- *Frequency.* Because both policymakers and the public need current information on the uses of Recovery Act spending, we recommend that Recovery Act employers be required to report on job creation and retention on a monthly basis. This would be consistent, for example, with the Bureau of Labor Statistics Establishment Survey, which covers about 150,000 firms.

- *Certification of Accuracy.* In the same way that corporate executives must now certify the accuracy of financial reports submitted to the Securities and Exchange Commission, we recommend that a certification system be adopted for Recovery Act reporting.

- *Validation and Auditing.* While we recommend that all ultimate organizational end users of Recovery Act funds and contracts report directly to Recovery.gov and that these raw reports be publicly accessible online, we also recommend that state and federal agencies review at least a portion of the submissions to determine whether the information is plausible given the nature and size of the project. We assume that more detailed audits of a portion of ultimate organizational end users will be necessary to safeguard against waste, fraud and abuse.

1.5 Other Program-Specific Data

1.5.1   General State Information

Key baseline data are needed for each state during state fiscal years 08, 09, 10 and 11, including:

- State reserve funds;
- Total general fund expenditures, and expenditures specifically in elementary and secondary education (K-12), higher education, Medicaid/SCHIP, human services, transportation, corrections, and other areas;
- Per-pupil state K-12 expenditures as well as distribution by school districts;
- Changes in Medicaid eligibility and services with 2008 as a baseline;
- Enacted changes in taxes and fees, including impact on annual revenues; and
- Actual revenue collections by quarter, both with and without adjustment for legislated changes.

This baseline information is vitally important to better understand how states are using Recovery Act funds in the context of the state's own resources. Simply measuring jobs saved or created will not capture displacement of state funding.

1.5.2   Surface Transportation Program

For the $27.5 billion in the Recovery Act devoted to the Surface Transportation Program, states should report the net number of new lane miles, if any, generated by projects. The key is to know whether resources are being used to fix existing roads and bridges before devoting resources to building new capacity. In addition to tracking new highway lane miles, new transit capacity should be tracked via new service mileage for fixed guideways and expanded fleet capacity for all transit modes (in comparison to replacement fleet purchases). Additionally, there should be reporting on whether funds have been "flexed" over to other programs such as public transit, intercity rail, or pedestrian improvements as allowed by law. This type of data will allow better informed debate over transportation policy in terms of whether states are deploying money in ways that will increase or decrease our nation's dependence on foreign oil.

1.5.3   School Construction

It is important to know how much of the discretionary funds in the $53.6 billion education State Fiscal Stabilization Fund goes to pay for school building improvements, both for elementary and secondary schools and for higher education and where those activities occurred. Thus, funds associated with education construction should be coded as "infrastructure" so it can be monitored. To augment the data from USASpending.gov, the direct reporting needs to include:

- The name of the school district (including school) or college/university, along with the code assigned from the Common Core of Data, which is the Department of Education's primary database on public elementary and secondary education in the United States.
- Project justification such as whether it was to save energy, meet safety and health codes, upgrade building components and systems, enhance education design, reduce crowding, or increase building utilization.
- Expected life of improvement.
- Whether matching funds were involved, how much, and source of the matching funds.
- With regards to any contract, in addition to the original contract, owner-initiated and contractor-initiated change orders, and the ultimate size of the contract.

1.5.4   Agency Goals

The Recovery Act enumerates a set of goals for each agency that is charged with disbursing stimulus funds. For example, the Assistant Secretary of Commerce is tasked with establishing a national broadband service development and expansion program that is to "provide improved access to broadband service to consumers residing in underserved areas of the United State." For every goal specified in the Recovery Act, the responsible agency should report whether that goal has been met, and if not, what the completion status of that achieving that goal is.

1.5.5 Tax expenditures

For entities receiving tax breaks authorized by the Recovery Act, the IRS should require a special code with the clear intention to make such information publicly available. All entities seeking tax relief under the Recovery Act should be informed that the amount of tax reduction will be disclosed. Individuals should be excluded from this disclosure requirement.

2. Reporting Architecture

The current system for reporting of grants and contracts relies on federal agencies reporting such information to the USASpending.gov database. For contracts, the Federal Procurement Data System is used. For financial assistance, such as grants, the Federal Assistance Award Data System is used.[3] Thus, USASpending.gov provides information about funds that have been distributed.

2.1 *All* Ultimate Organizational End Users *of Recovery Act Money Must Report*

To complement federal agency reporting to USASpending.gov, the government should create a central reporting mechanism to which all ultimate organizational end users of Recovery Act funding must register and report. All recipients and sub-recipients, regardless of how many layers removed from the initial federal dispersal should be required to report to the system for any Recovery Act money over $25,000. This *de minimis* will eliminate unnecessary reporting by very small subcontractors or suppliers. All reporting should be done through digitally secure communications.

2.2 Create a Centralized Registration System

The OMB Guidance requires direct recipients of federal funds to register under the Central Contractor Registration (CCR). We are supportive of using a central registry. However, three changes need to occur. First, all ultimate organizational end users of federal funds need to register, not just direct recipients of federal funds. All registrants must provide information that CCR already collects, including street address, NAICS, and a host of other data.

Second, there needs to be an improved identification system, particularly for entity ID and parent company ID. Currently, applicants for federal funding must obtain a Data Universal Numbering System (DUNS) number, a nine digit unique number given by Dun & Bradstreet that identifies the organization. A DUNS number of the parent company is also reported on the CCR. The problem is that the DUNS number is a private sector identifying system, which means that the government has little control over how the numbers are assigned or for that matter disclosed. Instead, the federal government should have its own unique identifier that can be made publicly accessible, and recipients of federal funds, whether direct or indirect, must keep their profile up to date in the registry, including changes in parent company identifier (e.g., when

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[3] Some agencies are participating in FAADS Plus, which expedites the information being sent to USASpending.gov and includes data elements not collected through FAADS. See the OMB memo from Robert Shea, Associate Director, to agency heads, "Guidance on Future Data Submissions under the Federal Funding Accountability and Transparency Act (Transparency Act)," March 6, 2008, M-08-12, at http://georgewbush-whitehouse.archives.gov/omb/memoranda/fy2008/m08-12.pdf.

a company is bought out or merges). Accuracy and transparency in the parent identifier is essential for tying together different databases in government.

Third, the federal government should coordinate with states so that the unique identifier is used in tracking state grants and contracts.

2.3 Create a Centralized Reporting System

Direct reporting by ultimate organizational end users into a central system, rather than reporting back up through the chain of funding, will eliminate the possibility that data will be manipulated or delayed by agencies or companies higher in the chain. When data are "cleaned" to identify and correct errors, the raw reported data should also be preserved. A central reporting system ensures the raw data are actually raw and not manipulated before the federal government receives it.

When a financial award is made, a unique award number must be assigned. This is separate and beyond the identifier that is it Recovery Act funding. This unique Award ID must follow the money wherever it goes. If a state receives Award ID 100, and provides a sub-award to the city, the sub-award should be identified as Award ID 100-A. If the city provides three contracts, then each contractor's funds should be identified as part of Award ID 100 (e.g., Award ID 100-B, 100-C, etc.). In this manner, when any ultimate organizational end user reports on their use of the funds, the original source of the award can easily be identified.

There may be systems, such as USASpending.gov, that can be expanded to become this reporting system. But building an entirely new system, though difficult and time consuming, might avoid the many limitations that those systems currently contain. Since the Recovery Act already requires companies receiving stimulus money to register with the federal CCR, it may also serve as an ideal location for a central reporting system. Locating a reporting system for spending, jobs and results at the same place companies register their name, location and other information could create a useful synergy that would make it easier to ensure data quality.
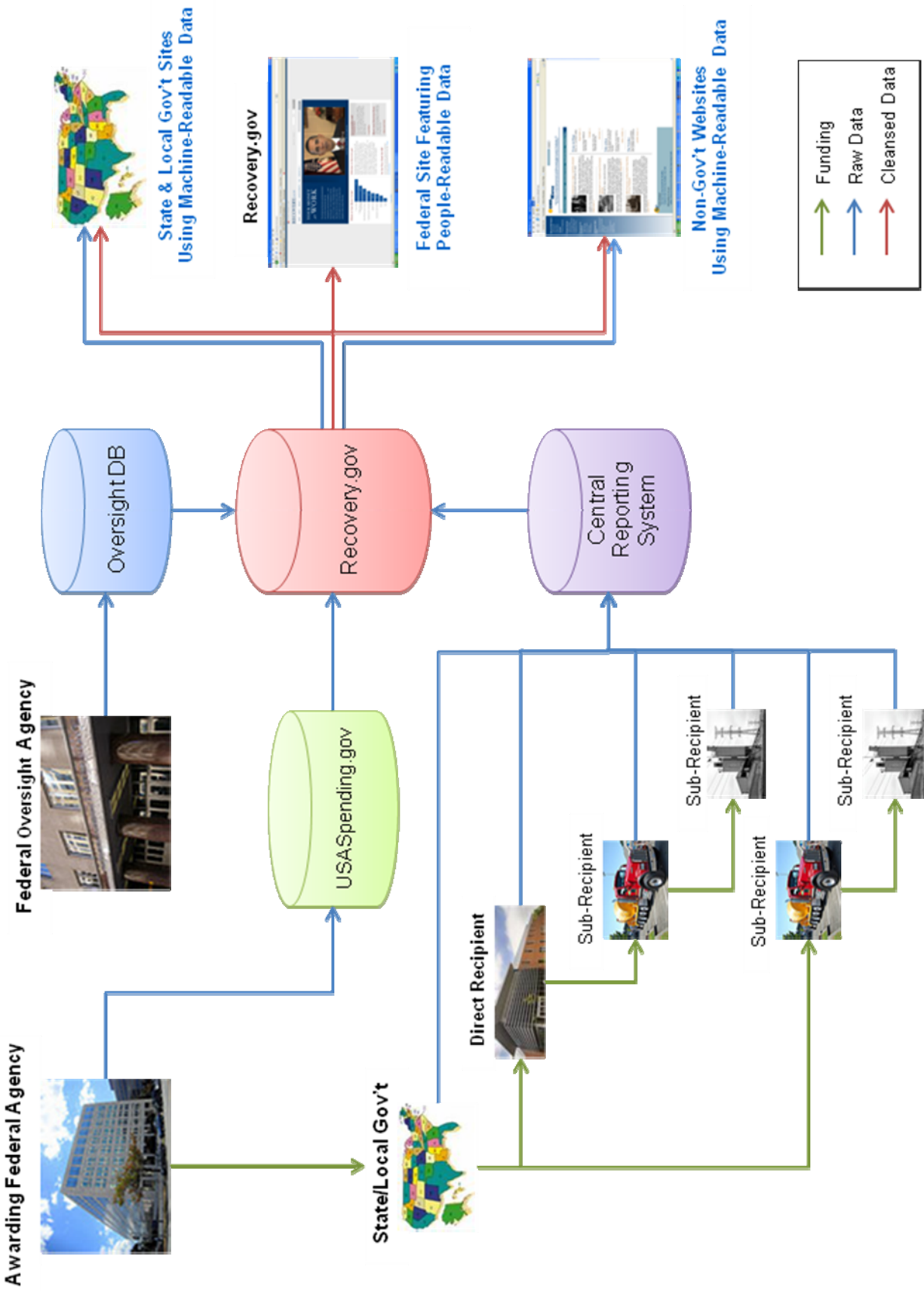
2.4 Reporting Formats

All reporting should be done electronically for maximum speed and accuracy. The federal government must establish clear standards and formatting for the electronic reporting to avoid confusion and misreporting. One standard that is increasingly used – and the SEC has familiarity with using – is eXtensible Business Reporting Language (XBRL). XBRL is based on XML (eXtensible Markup Language), a widely accepted standard, that has the ability to "tag" or code each element of a Recovery Act report with information such as description, amount spent, jobs created or saved, etc., so that it is easy to identify and understand for users of the information. All the elements are grouped together into a collection of reporting terms called a "taxonomy". XBRL is extensible, meaning that the terms available for use can be customized so that companies using XBRL can create their own elements – called "extensions" – to describe a unique reporting situation. XBRL is not an accounting standard and will not change what is reported, only how it's reported. The XML tagging means that the information in a report is computer-readable and can be more easily extracted, searched and analyzed by users of that information. The information can also then be reliably extracted and analyzed across companies with no manual intervention. Developing this standard is essential for data interoperability and can also improve data quality.

Considering the wide variety of formats agencies and companies may be using to track the Recovery Act data, the federal government should not mandate the software used for reporting information. Instead it should focus on the standard. Thus, the issue is not whether Microsoft Word or Excel is used to maintain the data, but rather whether the information is consistently coded in a standard format, such as XBRL. At the same time, the government should establish a webform for reporting directly into the central reporting system. This would allow a variety of vendors, institutions, and open source developers to create new reporting tools for filing information. For example, SAP or Oracle could create a module that allows their systems to file data with the central reporting system.

2.5 Merging Data

With accurate company and parent company identifiers and other identifiers (e.g., award identifier), along with a data standard such as XBRL, it will be possible to merge data from USASpending.gov and the central reporting system. Recovery.gov should be the website where these merged data sets come together. (When moving beyond Recovery Act funding, USASpending.gov should be the site for merged data sets. However, that website will need substantial overhaul to make that happen.)

State & Local Gov't Sites Using Machine-Readable Data

Recovery.gov

Federal Site Featuring People-Readable Data

Non-Gov't Websites Using Machine-Readable Data

Funding
Raw Data
Cleansed Data

Oversight DB

Recovery.gov

Central Reporting System

Federal Oversight Agency

USASpending.gov

Awarding Federal Agency

State/Local Gov't

Direct Recipient

Sub-Recipient

Sub-Recipient

Sub-Recipient

Sub-Recipient

Sub-Recipient

3. Data Access

3.1 Data Standards

To help with existing and new data fields, we suggest that OMB establish a data dictionary. Multiple agencies, 50 states, hundreds of municipalities, and thousands of contractors will be exchanging information, and under this architecture, it will all converge in one location. Without universally accepted parameters that explicitly define each element of data, computer systems and humans alike will be confused about what information exactly is being exchanged or reported, rendering Recovery.gov virtually unusable.

When a library of required and optional collected data is established, a data dictionary that explicitly defines the parameters of each data field (e.g. "A 'city' is no more than 35 characters and describes a unified, geographically defined, autonomous municipal entity") should be promulgated before agencies, states, localities, and contractors begin implementing reporting systems.

The federal government should encourage states to adopt federal spending reporting data standards to facilitate not only the development of individual state spending data collection systems, but to facilitate the electronic exchange of data between states and the federal government. A universal spending data dictionary would also facilitate the development of third-party data analysis tools. For example, a nonprofit research advocacy organization could produce a website like FedSpending.org that could easily be used for state spending analysis and adapted for multiple states.

3.2 Machine-Readable Data

It is of primary importance that all that data that are collected through the Recovery.gov be available in an electronic format and accessed from Recovery.gov by machines. The underlying details of the implementation of such access methods are better left to a more technical document, but what does get implemented should function as an open programming interface such as an Application Programming Interface (API). An API is a commonly used method by which computers exchange information. Enabling such machine-readable access to Recovery.gov data through an API is essential to allowing outside stakeholders to analyze collected data. In addition to API access, Recovery.gov should also provide bulk access to structured data. Digital copies of contracts as well as CSV or Microsoft Excel files, QuickBooks files or other reporting application files can be easily organized into simple directory structures and made accessible via FTP or HTTP.

But making the data available via APIs or FTP must also be accompanied by clear documentation and help files to assist developers in building applications around Recovery.gov data. Developers should also have access to an address to which they can email questions to a Recovery.gov expert.

3.3 Raw-Data Access

Human-created data will be imperfect even when a standard such as XBRL is employed. Data standards and machine access to data, while decreasing the probability that the data will be corrupted, cannot eliminate inevitable errors in human data entry. Data entered by humans, scanned in from bar codes, or transcribed from paper documents are considered "raw" data.

They will contain trivial (e.g. "Street" instead of "Lane") and substantial errors (e.g. "$1,000,000" instead of "$10,000,000"). There are a host of data correction tools that can be built into the central reporting system in order to standardize information. For example, it will not be unusual for someone to abbreviate "association" with "assn" while another filer will use "assoc". The reporting system should normalize these terms to a common standard. Errors in company spelling, such as "Acme" and "Acme Inc." and "Acme Inc" can be addressed through the company and parent identifiers.

Simple data corrections will be necessary to improve the accuracy of the data, but transparency advocates have concerns over the degree to which the data will be "cleaned." On the one hand, "dirty" data may do more to obstruct transparency in that the reported data do not reflect the reality of the world the data are supposed to describe. On the other hand, cleansing of data provides an opportunity for government officials to insert inaccurate information. For example, a project completion date might be altered by a month to create the appearance of timely execution. To elide this problem, both sets of data should be made available, and both sets should be associated with a set of provisos indicating the potential problems associated with each.

3.4 People Readable Access

3.4.1   Searchability

Once the data are collected from the various data repositories (USASpending.gov, Central Reporting System, and the Oversight database), the data should be displayed on the Recovery.gov website in a manner that allows non-expert users to easily observe the flow of federal funds and the impact those funds are having. Two dimensions should be paramount in making decisions how to display information on Recovery.gov: data knowledge of the user and technology skills of the user. Recovery.gov should serve those at the low end of both dimensions, but not at the expense of the high end for each dimension.

At a minimum, the data should be searchable by:
- Ultimate Organizational End Users of federal funds
- Geography (state, congressional district, street address, ZIP code, census tract)
- Project type
- Federal agency
- Number and type of jobs
- Dollar amount
- Other criteria

3.4.2   Display

Federal spending data should be displayed in a format similar, but not necessarily identical to the federal government's USASpending.gov. Although the user interface of the site could be improved, it should serve as the basis for how the data should be displayed. The principle is that the public should be able to search by federal agency, company, state or city, for example, to obtain aggregate information and then drill down on specific transactions.

Recovery.gov initially provided expectations in terms of jobs created or saved in each state that will result from Recovery Act funding. Development of these expectations or interim goals is laudatory (see 1.5.4 above). The aggregate data displayed on Recovery.gov should be juxtaposed against these expectations or goals.

Not only should the federal government be analyzing the data collected about Recovery Act spending, but they should provide resources to states to conduct state-specific reviews.

3.4.3   Upstream Communication

While providing information about federal spending may be the sole purpose of Recovery.gov, we believe more can be achieved. In addition to posting oversight reports and findings by various government offices, as required by law, Recovery.gov should also serve as an avenue by which citizens can send information to the federal government. There are at least three areas for interactivity:

- *Site Improvements*. There should be a section of the website inviting public feedback on site improvement, new "data mash-ups," and other innovations. There may be issues that need to be solved and inviting the public to offer solutions, data collections, or crowdsourcing fixes would be consistent with President Obama's memo to agency heads issued on Jan. 21 that said two of three principles guiding his administration will be citizen participation and collaboration.

- *Anonymous Reporting of Misuse of Funds*. Recovery.gov should provide an online form and telephone number for whistleblowers and others to identify waste, fraud, and abuse. Allowing anonymous reporting of such misuse of funds will be critical.   Additionally, there should be dedicated staff within government reviewing and acting on this information.

- *Discussion of Government Successes*. Recovery.gov should not become a public relations gloss for Recovery Act spending. But when government has achieved outcomes, there should be an opportunity for public discourse about the success and the lessons learned from that success. A key part of Recovery.gov should be presenting a theme that government needs to learn from both successes and failures in order to make things work better when moving forward.

- *Macro Measures*. Recovery.gov should have a tracking of various key measures of success, including employment statistics.

4. Changes in Policy

Changes in federal contracting regulations, OMB Guidance, and public laws may be required to implement this architecture. This subject deserves further study, but upon superficial examination it appears that several aspects of this architecture would require policy changes.

4.1 Reporting Requirements for Sub-Recipients

The initial OMB Guidance requires that federal award data be collected from the first level sub-recipient only. In the example given in the Guidance, a city that receives federal funds from a state would be the last organizational user to report on the use of federal funds. The architecture outlined herein requires that any organization that receive funds from the city – such as a contractor hired to build a school and that contractor's subcontractors and suppliers – be required to report on their use of federal funds if above a *de minimis* amount of money.

4.2 Timeliness of Reporting

Current law requires that federal award information be uploaded to USASpending.gov no more than 30 days after a contract or grant is awarded.   Like the requirements of data uploads to USASpending.gov, uploads to Recovery.gov should be no later than 30 days after receipt of an award. However, the Recovery Act and the initial OMB Guidance, in accord with the law, require that agencies report on Recovery Act fund usage on a quarterly basis.

4.3 Federal Agency Lobbying Disclosure

Current law does not require that the federal government disclose efforts undertaken by potential award recipients or their agents in persuading a federal agency to award a contract or grant to that recipient. The information that is collected by the federal agencies is minimal and is not necessarily stored in an electronic format. President Obama's Executive Order on "Ethics Commitments by Executive Branch Personnel" calls for ramped up disclosure of such lobbying activities. The administration should implement such reporting and disclosure; that information should be on USASpending.gov or Recovery.gov so that it is clear what types of influences may have gone into the award of federal funds.

4.4 Contractor Misconduct Information

The public has a right to know with whom the government does business. Too often contractors are not complying with tax requirements or fail to properly implement federal regulations related to worker safety or environmental protections, for example. With an accurate company and parent company identifier, it is possible to combine databases from various federal agencies to better describe who receives federal funds. Such a database can also help government contract managers who would be well served to have the ability to search a contractor misconduct database to identify potential risks.