OFFICE OF THE INDEPENDENT BUDGET ANALYST REPORT

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Considerations Associated with the Proposed Adoption and Implementation of an Open Data Policy

OVERVIEW

On July 10, 2013, the Rules and Economic Development Committee received a presentation on open data policies from software developer Jeff Johnson (who volunteers as the Brigade Captain for Code for America San Diego) with opening comments from Joe La Cava (Community Planners Committee Chair). Mr. Johnson has been working with Mr. La Cava to develop new software applications using City data to assist Community Planning Groups and other stakeholders in more easily providing useful input related to City CIP projects. These developing applications are intended to demonstrate how available public data combined with software applications can help citizens be more involved in government decisions affecting their communities. These applications were last presented to the Infrastructure Committee on June 24, 2013.

Code for America is a nonprofit that self-describes as "an organizing force for local civic engagement - a national network of civic-minded volunteers who contribute their skills toward using the web as a platform for local government and community service." Their stated goals are to help: 1) governments leverage technology more effectively; 2) citizens and community groups solving civic issues; 3) cities collaborate to work better; and 4) develop civic applications built on linked, open data.

The presentation defined **open data** as data produced or commissioned by governments or government controlled entities that can be easily and freely used, reused and redistributed by anyone, for any purpose. Code for America is advocating for the City Council to adopt a policy "that provides a framework for delivering municipal government data in an accessible and open way that can be used by civic, social, community and business groups as well as by other city departments." This advocacy and assistance has been initially supported by members of the City Council, citizens, nonprofits and private sector interests.

In his presentation, Mr. Johnson stated why he believed open data is important. Borrowing from Mr. Johnson's PowerPoint presentation, he specifically described open data as:

A Public Good
Information is a valuable societal asset whose value is multiplied when it is made easily accessible to the public. Municipal governments control many datasets that are very useful to social services, community planning groups, health advocates, and many other civic and social organizations as well as businesses and entrepreneurs and should commit to publishing these data sets rather than requiring data users to request them.

A Catalyst for Economic Development
In a digital age, data is a key resource for social and commercial activities. Everything from finding your local post office to building a search engine requires access to data, much of which is created or held by government. By opening up data, government can help drive the creation of innovative business and services that deliver social and commercial value.

A Means of Ensuring Transparency
In a well-functioning, democratic society citizens need to know what their government is doing. To do that, they must be able to freely access government data and information and to share that information with other citizens. Transparency isn't just about access, it is also about sharing and reuse — often, to understand material it needs to be analyzed and visualized, and this requires that the material be open and easily accessible so that it can be freely used and reused.

An Enabler of Participatory Governance
Much of the time citizens are only able to engage with their government sporadically — maybe just at an election every four years. By opening up data, citizens are enabled to be much more directly informed and involved in decision-making. This is more than just transparency: it's about making a full "read/write" society, not just about knowing what is happening in the process of governance but being able to contribute to it.

Mr. Johnson further noted that most major cities have adopted resolutions, ordinances or policies in support of open data. He cited a few examples of open data success stories including applications that helped citizens: 1) better understand a city's street sweeping schedule; 2) easily explore and understand where their tax dollars are going and 3) view an interactive map of crimes in order to better understand what's happening in their community. Mr. Johnson concluded his presentation by recommending the City develop an open data policy and implementation plan in the next year considering best practices, resources required and legal issues.

Following the presentation, the Committee requested the IBA prepare a report on open data with the following information:

- Review and assess best practices in other cities.
- Identify City departments with the most Public Records Act requests and the types of information or data that is most requested.

- Identify resources (staff and funding) needed to develop and implement an Open Data Policy.
- Develop recommendations related to the timeline for implementing a policy.
- Develop recommendations for a strategy to move forward.
- An analysis by the City Attorney's Office regarding any potential legal issues.

The IBA has endeavored to be responsive to the Committee's direction. This report responds to each of these items in the order presented.

FISCAL/POLICY DISCUSSION

Notable Elements of Open Data Efforts in other Major Cities

As part of our analysis, we examined the existing practices of other cities in the country that maintain or are creating open data policies and programs. We specifically examined how their policies are overseen and implemented, whether those cities have hired dedicated staff to implement and maintain their open data programs, the timelines associated with the implementation of their open data programs, what types of data sets those cities have made public and restrictions on any data they have not, and the back-end systems the cities use to maintain their open data programs. We note that Chicago, Boston, New York, Austin, Oakland, San Francisco, and Los Angeles use programs based on the Socrata Open Data platform, with other cities using either self-created platforms or those of other providers.

Washington, D.C.
Washington, D.C. was one of the earliest cities to adopt an open data policy. The city began to consolidate its own data in a common format and central site for internal use in 2004, and in 2006 it began making that data publically accessible. The city began by releasing data sets including service requests, property classifications, and crime incidents, and currently maintains over 400 data sets. The city developed its own platform, and releases data sets in various formats depending on the type of data being released, including xml, text/csv, RSS, and shape file formats.

Chicago
Chicago's open data policy was established through an executive order of its mayor in 2012. The policy requires all city data to eventually be made accessible through one portal, with certain specified exceptions for data relating to ongoing negotiations or that contains private or otherwise sensitive information. In order to implement the policy, the city hired a Chief Data Officer (CDO) and created a data advisory committee consisting of the CDO and an appointee from each city agency to identify and prepare data sets for upload to the city's program. While the city had made some data sets public prior to establishing its official policy, the number of data sets made available has accelerated since adoption of its policy, with over 900 being available as of this report (some of the most popularly accessed sets including the shape files of city parks and transportation routes of busses and trains). The City received a $300,000 grant and assistance from local universities to prepare data for release.

Philadelphia

Philadelphia's mayor issued an executive order promoting open data in April 2012, after consideration over the previous six months. The order called for the hiring of a Chief Data Officer, the creation of an open data governance advisory board, and the development of an open governance plan. While the CDO initially had no supporting staff outside of the city's web-development team, he has since been given an additional three positions and other web development resources. The city combined its open data efforts with an existing site that contained a community maintained repository of already released data sets. The city has released over 60 data sets since inception of its policy, with the CDO and a working group of city departments determining which sets of data are complete and ready to be released. Data sets that are released generally do not contain personal information or addresses, but are instead limited to providing block-level data. Frequently accessed data sets include information on crime statistics, transit routes, and property data.

Boston

The city of Boston maintains an open data program that was first launched last year after several months of planning. The program is managed by the city's Chief Information Officer, and data is made available based on the number of requests for a type of data received by the city and by a determination of which sets of data owned by the city are complete, accurate, and up-to-date. Some data sets are not included in the program, including those that could have public safety impacts and that relate to ongoing litigation in the city. Over 300 data sets are currently available through Boston's program, with frequently accessed sets including service requests to the mayor, crime incident reports, and maps of potholes reported by residents. Boston also hired a dedicated civic software developer to work with the local software development community to generate applications using city data.

New York

New York established an open data policy in March of 2012. The program required the city's Department of Information Technology to within one year provide and maintain a website containing data sets from all the city's departments. New York's policy requires that *all* city data sets be made open and public, and requires that any department that is unable to make any data set public provide an explanation of why it is unable to make that data available and to provide a timeline for when it will become available. To date New York has released over 2,400 data sets, with popularly viewed sets including wifi hotspot locations, 311 service requests, and subway entrance locations.

Austin

In 2011, the City of Austin adopted an Open Government Framework which required its City Manager to work with the city's Community Technology and Telecommunications Commission to develop a policy providing for open data, open source platforms, and development of mobile applications using city data. The policy developed requires each city department to make reasonable efforts to provide data for inclusion in the city's open data program. At present the program currently makes over 200 data sets available – most frequently viewed data sets include maps of dangerous dogs, restaurant inspection scores, and water quality sampling data.

Oakland
Oakland began a pilot program to make open data available to the public in January of this year after eight months of planning. Its program is managed by its Department of Information Technology, and currently provides over 100 data sets (frequently viewed data sets include crime maps and park information). At its launch, 35 data sets were included, with more data sets being added as they became available, as determined by the Oakland's City Administrator and the Department of Information Technology. The city has since adopted an additional policy requiring its City Administrator to perform outreach to determine how to adjust their program, and to establish a data advisory committee consisting of members from all city departments in order to catalogue and prepare data sets for upload.

San Francisco
San Francisco has adopted multiple policies stating the desirability of making data publicly accessible, in 2009, 2010, and 2012. It's most recent policy proposed the creation of a Chief Data Officer to coordinate the gathering of data sets to be released, the platform on which they are released, and to facilitate use of the data in the city. The city is currently recruiting a CDO, although it also currently maintains an open data portal that includes over 700 data sets (frequently viewed data sets include recent crime information, business registration, and film locations in the city).

Los Angeles
Earlier this year the city of Los Angeles approved a pilot program managed by the city's Information and Technology Agency that provides GIS mapping data that is currently ongoing. Their City Controller recently also released a data program that provides financial data sets, including salary information, outgoing city payments, and incoming city revenues. There is no single portal through which all the city's released data sets can be viewed.

Information Related to Public Record Act Requests

The Committee requested the IBA to identify City departments with the most Public Record Act (PRA) requests and provide the type of information typically requested. Using information gathered by the City's PRA Request Coordinator for the three month period between April and June 2013, the IBA presents the requested information in the table on the following page. Only departments with more than 10 PRA requests are shown. It should be noted that the type of information requested varies greatly; however, we have endeavored to identify the most requested categories of information for each department.

Public Record Act Requests (April - June 2013)		
Department Receiving Request	# of Requests	Type of Data Requested
PRA Request Coordinator	53	Various: Documentation, Employment Status, Payroll Records, Claims Against the City, Correspondence, etc.
Development Services	26	Contact Information of Project Managers, Construction Records, Development Permits
City Attorney	26	Case Information, Copies of Legal Memos, Closed Session Records, Other Miscellaneous Requests
Office of the Mayor	25	E-mails, Correspondence, Project Expenses, Invoices, Travel Records
EOC	21	Payroll Records for various projects or groups
Transportation & Storm Water	19	Records & documents related to various Projects: Storm Water, Streetlights, Traffic, Roads, Sidewalks
Police Department	13	Investigation Information, Police Records, Towing Contract, Information related to Legislation
Park & Recreation	12	Miscellaneous: Correspondence, Project Manager Info, Info on Permits, Projects, Inspections, Contracts, Seals
Real Estate Assets	11	Specific Property Related Documentation, Lease Information, Accounting Information

As PRA requested data is often maintained in different formats, the task of converting this information into machine-readable formats in support of an open data policy needs to be evaluated in terms of process and required staff time.

Resources needed to Develop and Implement an Open Data Policy

It is difficult to accurately estimate the resources needed for an Open Data Policy without a better understanding of the desired scope of the policy and the timeframe for its implementation. There currently are a number of unknowns that will impact the cost of an Open Data Policy. These include but are not limited to:

- The availability and capacity of existing staff to perform work in support of open data.
- An inventory and readiness assessment of the City's existing data sets.
- Costs associated with converting information into machine readable formats.
- Costs of a Software as a Service provider (to create a public portal for open data).
- Any needed system programming costs to access certain data sets.
- The cost of maintaining and updating City data sets on the public portal.

Despite these unknowns, the IBA believes the City Council can adopt a resolution and initiate processes in support of open data with a relatively modest expenditure of funds in FY 2014. These efforts will be more effective if they are complimented by a mayoral commitment to develop open data processes.

In order to roughly estimate the resources needed to initiate open data processes, we assume a limited approach and a more robust approach to implementation. Both approaches involve 1) appointing an Open Data Advisory Group to provide input and guide initial implementation of open data and 2) hiring a Chief Data Officer (total annual estimated cost $200,000) to internally

lead the City's open data efforts. We recommend an Open Data Advisory Group be comprised of representatives from the Office of the Mayor (perhaps led by the ACOO), Office of the City Attorney, directors from the Communications and IT Departments, key data-owning departments, a few City Council offices, IBA, Code for America San Diego and a representative or two from the public. Other participants could be invited to provide testimony or otherwise assist the Oversight Committee as needed (i.e., the public sector efficiency expert recently approved in the action to improve government operations).

The IBA discussed possible approaches for open data implementation with the IT Director and the CFO. They shared the following important thoughts:

1. The primary work to facilitate open data needs resides within the data owning departments and not the IT Department.

2. Data owning departments have limited staff capacity to do substantive work on open data. There is some capacity to move open data forward in a limited way with existing resources, but it may involve trade-offs with existing responsibilities.

3. The IT Department should collaborate with the Chief Data Officer and data owning departments to: develop protocols and costs for transferring data, coordinate the costs of programming requests related to open data through CGI, and assist in the development of a cost effective plan for disseminating information through a public portal.

If management supports the movement towards open data, the IBA strongly recommends consideration be given to quickly hire a Chief Data Officer reporting to the ACOO. Based on our research, we believe effective open data requires a significant organizational commitment that necessitates dedicated leadership, funding and management support. If Council and management agree to pursue open data, a limited inventory of the City's data sets could be performed and reported back to the Advisory Group. The Advisory Group could then review and recommend certain data sets be readied, if necessary, for release to a public portal.

In researching the open data practices of other major cities, the IBA learned that most are using an outside company (i.e., Socrata) to serve as their open data repository and to create a portal for free public access. We estimate these companies will have an initial charge of approximately $50,000 for set-up and training and an annual charge of approximately $60,000 to serve as the City's open data portal. It should be noted that these companies often provide analytical tools and applications to assist the public in manipulating and extracting public data.

Our assumed limited approach to open data implementation would use existing staff to perform a limited inventory of City data sets. A select few data sets would then be readied for release to a public data portal. This approach would initiate the process for making City data available through a public portal late in FY 2014 and better position the City to adopt a thoughtful, comprehensive Open Data Policy in FY 2015. If the City were to immediately initiate efforts to advance open data in a limited way, we estimate the cost to be roughly $150,000 in FY 2014 to hire a Chief Data Officer and establish an open data portal.

A more robust approach for implementing open data assumes 5.00 new FTEs will be needed to perform a comprehensive evaluation of all City data sets. These new positions would actively develop and ready useful data sets for transmission to a public portal. For purposes of estimating costs, we further assume the 5.00 new data management positions would cost approximately $130,000/year for total cost of $650,000. We envision these positions working for the Chief Data Officer and in collaboration with designated staff in the key data owning departments and the City's public information officers.

This second more robust approach requires more time to implement but results in a greater amount of information being initially released to a public portal. The Chief Data Officer should be hired first and lead the effort to hire the 5.00 new data management positions. While the Chief Data Officer could be authorized with a mid-year budget action, the new positions would have to be studied, classified and funded. If a decision is made to aggressively go forward with open data, these new positions should be included in the Proposed Budget for FY 2015. We estimate the total annual cost for a more robust implementation of open data to be roughly $1 million beginning in FY 2015, with a one-time set-up expense of $50,000 for the public portal.

Timeline for Implementing an Open Data Policy

While efforts to initiate open data can begin immediately, the IBA recommends the City appoint an Open Data Advisory Group and hire a Chief Data Officer before adopting a comprehensive Open Data Policy. The initial work of the Advisory Group and the Chief Data Officer will help the City to better understand its open data capabilities, related limitations and cost considerations. This information will better enable the City Council to adopt a comprehensive Open Data Policy in FY 2015.

Other Considerations Related to Open Data
A few other comments, observations and considerations:

Legal and Operational Data Limitations
The IBA believes there are types of City data that cannot or should not be released to the public. For example, the City may acquire proprietary data that we are legally precluded from sharing. Alternatively, there may be data (i.e., security measures or information related to ongoing investigations) that would jeopardize City operations and/or public safety if released. There may also be City data (i.e., certain information related to City personnel or members of the public) that would create adverse privacy issues if released. Although we have not been able to thoroughly research these issues, we recommend the Advisory Group be tasked with evaluating and explaining types of City data that may not be suitable for posting on a public portal.

Open Data as an enabler of Participatory Governance
Proponents suggest open data enables citizens to be much more directly informed and involved in decision-making. The IBA agrees that open data increasingly has this potential; however, we also note that 1) there are other means (i.e., City TV and/or departmental websites) for cost-effectively disseminating useful public information in a way that enhances participatory governance and 2) not everyone has the education, aptitude, resources or inclination to extract and utilize information from an online data repository to become more involved in government.

If a public investment is to be made in open data, consideration should be given as to how it can be made to be accessible, in a useful and user-friendly way, to the greatest number of citizens.

<u>Open Data as a Catalyst for Economic Development</u>
Proponents also suggest that open data can help drive the creation of innovative business and services that deliver social and commercial value. The IBA agrees with this assertion. It is difficult, if not impossible, to foresee all of the economic and public benefits that may result from innovative applications making use of public data. While citizens and nonprofits will develop some of these innovative applications, we believe private sector interests will generate the lion's share. It appears to us that commercial interests, as opposed to the general citizenry, are the major catalyst for public investment in open data and that is okay. Interestingly, some opponents of free public data argue if public funds are used to aggregate public data and if the public data will bring commercial (private) benefits to only a small number of users, then the users should reimburse government for the cost of providing the data.

<u>Open Data as a Resource Decision</u>
There are several potential benefits associated with open data. Some of these potential benefits (public good, economic development, transparency, participatory governance) were discussed at the beginning of this report and there may be other unanticipated benefits (i.e., some open data cities indicate their own city departments are the biggest users of the public information portal). Given City resource constraints, the potential benefits of open data will need to be evaluated against the potential public benefits of other unmet City needs (public safety, infrastructure, restoring public services levels, etc.). In order to be successful, open data requires organizational commitment and resources which we have roughly estimated to be $1 million annually based on a robust implementation approach.

Next Steps

If the City wishes to make open data an operational priority, the following steps can be taken:
1. The City Council can immediately convey their support of open data by adopting a resolution committing to make City data available through a public portal.
2. The Mayor can similarly issue an executive order in support of open data.
3. The Rules & Economic Development Committee can take action to appoint an Open Data Advisory Group to guide implementation efforts.
4. Mid-year FY 2014 budget proposals and actions can be taken to facilitate the hiring of a Chief Data Officer.
5. Councilmembers may wish to include additional staffing in furtherance of open data in their budget priority memorandums for FY 2015.

CONCLUSION

At the conclusion of a July 10, 2013 presentation to the Rules & Economic Development Committee on open data policies, the IBA was asked to develop a report on various considerations associated with the proposed adoption and implementation of an Open Data

Policy. In response to that direction, this report comments on open data practices in other major cities, provides detail on Public Records Act requests, estimates resources needed to effectuate open data, and provides timeline and next step recommendations. Additionally, we provide a few other comments, observations and considerations related to open data.

It is difficult to estimate the resources needed for an Open Data Policy without a better understanding of the desired scope of the policy and the timeframe for its implementation. Despite some of the unknowns related to implementation, the IBA believes the City Council could adopt a resolution and initiate limited processes in support of open data with existing staff for approximately $150,000 in FY 2014. We estimate the total annual cost for a more robust implementation of open data to be roughly $1 million beginning in FY 2015, with a one-time set-up expense of $50,000 for the public portal.
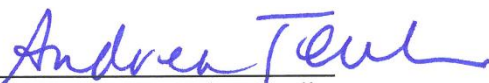
In order to be effective, City Council implementation efforts will need to be supported by a mayoral commitment to develop open data processes. While efforts to initiate open data can begin immediately, the IBA recommends the City appoint an Open Data Advisory Group and hire a Chief Data Officer reporting to the ACOO before adopting a comprehensive Open Data Policy. The initial work of the Advisory Group and the Chief Data Officer will help the City to better understand its open data capabilities, related limitations and cost considerations. This information will better enable the City Council to adopt a comprehensive Open Data Policy in FY 2015.

Proponents cite several public benefits associated with open data. Some of these potential benefits (public good, economic development, transparency, participatory governance) are briefly discussed in this report and there may be other unanticipated benefits (i.e., some open data cities indicate their own city departments are big users of the public information portal). The IBA acknowledges these potential benefits; however, we also note that 1) there are other means (i.e., City TV and/or departmental websites) for cost-effectively disseminating useful public information in a way that enhances participatory governance and 2) not everyone has the education, aptitude, resources or inclination to extract and utilize information from an online data repository to become more involved in government. If a public investment is to be made in open data, consideration should be given as to how it can be made to be accessible, in a useful and user-friendly way, to the greatest number of citizens.

Given City resource constraints, the potential benefits of open data implementation need to be evaluated against the potential public benefits of other unmet City needs (public safety, infrastructure, restoring public services levels, etc.). In order to be successful, open data requires a strong organizational commitment and resources which we have preliminarily estimated to cost approximately $1 million annually.

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