Open Government Data: an analysis of the potential impacts of an Open Data law for Washington State

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A Capstone project presented in partial fulfillment of the requirements for the degree of

Master of Arts in Policy Studies

Interdisciplinary Arts & Sciences

University of Washington Bothell

2015

Master of Arts in Policy Studies
Interdisciplinary Arts and Sciences
University of Washington Bothell

This is to certify that I have examined this copy of the Capstone manuscript by

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and found that it is complete and satisfactory in all respects and that any and all revisions required by the faculty and reviewers have been made

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Chapter 1: Abstract

Open data is a growing movement that encourages Governments to open up as many of their data sets as possible, making it freely available and machine-readable, in order to promote and facilitate Governmental transparency and accountability, increased civic engagement and economic growth. The purpose of this study is to perform a policy analysis on the possible implications of a proposed open data law for Washington State. Such a bill was submitted to the Washington State Legislature (House Bill 2202) in the 2013-2014 biennial legislative session, but failed to become law and was not resubmitted in the 2015-2016 biennial legislative session. To perform the analysis, existing data from the HB 2202 bill proposal was examined, including written and verbal testimony by key supporters and opponents of an open data law for Washington State. Secondary data regarding the implementation of open Data laws in other US States was gathered, including supplemental data on their outcomes to date where available. The research findings highlight potential impacts of open data laws in key sectors such as economic, legal and political, civic engagement, and technology and research. Finally, recommendations were provided regarding amendments that could be added to any future version of such an open data bill which could aid with the successful passing and implementation of an open data law for Washington State.

Chapter 2: Purpose of the study

Statement of the problem

Considerable energy is being channeled into the establishment and implementation of open data laws across the United States at the present time. These laws and policies are being developed and enacted at the city, county, state and federal levels. There appears to be a deficiency of knowledge regarding the consequences, intended or unintended, of these laws and policies and these data could prove useful to policy makers as open data laws become more prevalent over time. As such, further research on developing our understanding of the implications of such open data laws within the United States is desirable.

Background

Open Government Data, or Open Data as it is more widely known, is an idea that has been growing in importance with policy makers and citizen advocates alike over the last decade. While this movement has been most prevalent in the United Kingdom and the United States to date, it is also a significant worldwide movement and several recent studies have highlighted the growing influence and impact of open data policies around the world (World Wide Web Foundation, 2015). In the United States, open data came to political prominence with the nation's first open data policy being instituted by President Obama in May 2009 (White House, 2009), decreeing that all federal spending data be free and open to the public via http://USASpending.gov and the creation of an open data portal for the Federal Government at http://data.gov. A second Executive Order was issued in 2013 (White House , 2103) in order to strengthen the original policy through the creation of new rules for Government agencies to follow regarding opening their datasets and to help "enhance Government efficiency and fuel economic growth".

These policies have coincided with the advent of powerful cloud-based technology solutions that can underpin the release of vast quantities of data, thereby allowing Governments to begin facilitating these open data policies and enabling citizens and other interested parties to easily access and interpret these data. In some key ways, open data is a concept similar to other 'Open' movements such as Open Source software; and indeed one of

the key aspects of the technologies used to date to enable this open government data movement is that they themselves are open source.

Open data has no single definition to date. Several organizations have published their interpretation of what open data means, such as the Open Data Institute, Open Knowledge network, and the Open Definition organization. For the purposes of this research paper, we will define open data as follows:

1. Data produced or commissioned by Government or Government controlled entities
2. Data which is open as defined in the Open Definition – that is, it can be freely used, reused and redistributed by anyone[1]
3. Data which is machine-readable by default

The concept of "machine-readable" is important as it is a key component of how Government data needs to be formatted in order for it be published as "open data". Having data be "machine-readable" means that researchers and other consumers of these data can use software to quickly capture and analyze these data without the need for manual effort to clean these data beforehand. Examples of machine-readable data formats are Excel spreadsheets and XML file formats, whereas PDF files would typically not be considered to be "machine-readable". This is important as the bulk of legacy and even newly created data in Government systems would not be considered to be "machine-readable" by default today, which is a potentially large supply-side barrier to the frictionless publishing of open data. (Tauberer, 2014)

It is also important to understand the goals of open data. Similar to the definition of open data, there is no single standard list of goals for open data, which appear to be tailored in each jurisdiction to take consideration of local laws and regulations, economic and political motivations and various other motivations. So for the purposes of this research paper, we will think about four key goals of open data which are frequently cited in the available literature as we analyze its importance and implications.

[1] http://opendefinition.org

1. Improve Governmental transparency and accountability
2. Help create a more efficient Government
3. Create a new data platform: “Government as a Platform”
4. Unleash the potential economic impact of Open Data

While improvements in Governmental transparency, accountability and efficiency are often cited as major goals of open data, it is the potential economic impact of open data that is the most easily quantifiable. Recent studies suggest that as much as $3 trillion of added annual value worldwide could be unlocked, with $1.1 trillion of that in the US alone (McKinsey , 2013). That economic activity is mainly unleashed through the idea of “Government as a Platform”, in that the Government controlled datasets that are published begin to form a new platform of information that businesses and entrepreneurs can build upon to create new economic opportunities, in addition to the advocacy uses that spur changes to the way that Governments are run.

The varied uses of open data are also of interest. To date, most efforts surrounding the release of open data has been via portals such as http://data.gov and its State, City and County variants. While important steps in their own right, they are of limited value to the general population and mostly provide those with data analysis skills a method with which to obtain varying quantities of data for research purposes. Less widely known is the fact that some major corporations rely on open data as key drivers of their businesses. Examples include LinkedIn using open data from the Departments of Labor and Education, and Zillow using open data from agencies such as the Bureau of Labor Statistics, Federal Housing Finance Agency, Census Bureau and the American Community Survey. [2] In addition, making open data more discoverable and accessible is becoming an important aspect of this movement in order to increase its utility. Services have begun devise methods through which open data can be exposed via apps in everyday use, such as Yelp which now exposes restaurant inspection data

[2] http://www.data.gov/impact

as part of its service. [3] It is efforts such as these to improve the discoverability and accessibility of open data that will aid with increasing awareness of it with citizens and policymakers alike.

Justification of importance of the study

There is evidence to suggest that there are issues impacting the effective implementation of these open data policies, and the concept of both user-side and supply-side barriers to the effective implementation of these open data policies are of particular research interest. Some of these barriers can be the concepts of *Privacy* and *Security*, but other lesser known barriers also exist such as *Cost* and *Data Integrity*. One of the objectives of this research is to explore such questions as:

- What supply-side barriers exist for a Government such as Washington State that wishes to expose its datasets via open data portals?
- What consumer-side barriers exist for ordinary citizens, policy advocates, researchers, technology companies and other interested parties that wish to consume these data?
- What are the implications, positive or negative, intended or unintended, that result from the implementation of open data policies?

It is questions such as these that have resulted in this research study attempting to understand the possible consequences of an open data law for Washington State should such a law come into effect in the future.

[3] http://officialblog.yelp.com/2015/02/yelp-open-data-the-end-of-food-poisoning.html

Chapter 3: Literature Review

One the challenges with this particular area of research is that open data is a relatively new phenomenon in policy terms and one that has only recently begun to attract the interest of scholars and researchers. As such, there is a limited body of peer-reviewed research work in this field, and as such I had to rely primarily on other forms of publication to gather sufficient relevant literature for this Capstone research project. On the positive side, several recently published studies and books provide a rich source of the latest thinking and key insights on open data initiatives, including quantitative and qualitative data to factor into this research. This literature reviewed has been broken down into key concepts within which I can identify key takeaways that are addressed as part of this Capstone project.

The concept of *Talent* is a good starting point, as it underpins all of the other concepts to a greater or lesser degree. By talent, we think about the significant numbers of highly skilled people from the technology, policy and legal worlds that are required to help fully realize the potential of open data. A 2013 paper titled "A Future of Failure: The Flow of Technology Talent into Government and Civil Society" (Freedman Foundation, 2013) gives a deep insight into limited flow of technical talent from the private sector into Government entities, and provides several actionable suggestions for how to enlarge this talent pipeline. The report was triggered in part by the failure of the rollout of the HealthCare.gov site and the reliance on external contractors and executives from large software companies in order to get the site fully functioning, and speaks to the notion that as technology becomes more integral to the delivery of Government services and as society becomes more data driven, it will be vital for the Government to have a rich intake of talent from the private sector who can help drive projects to scale. As open data infrastructure is also heavily reliant on most of the same technologies as what underpins HealthCare.gov, especially cloud computing solutions, increasing the flow of expertise from the private sector needs to be an important consideration when developing a long term open data strategy. In "Innovative State" (Chopra, 2014), the very first Chief Technology Officer (CTO) of the US Government discusses how new technologies can completely transform Government and references the importance of having this healthy pipeline of technical talent flowing into the Government from the private sector, with their

deep knowledge of the software tools and platforms that can enable this transformation. Evidence of this can be found in the caliber of recent appointments made by the White House when appointing new Chief Technology Officers,[4] and also in the appointment of senior executives from the technology sector to aid with the rollout of the HeathCare.Gov website, a key pillar of the Affordable Healthcare Act.[5] While these readings focus heavily on the technical expertise needed for such programs to succeed, they also reference the need for increasing the numbers of legal and policy experts in order to help navigate the complex issues that arise with the rollout of broad Government innovative programs such as open data initiatives.

This leads into the related concept of *Civic Engagement*, where the focus of the thinking is on how to enable more citizens to become involved in activities where they can have an impact on the effectiveness of their Governments. There are several prisms through which we can view this concept. In the essay "A Peace Corp for Programmers" (Burton, 2010), the author advocates for a system where talented programmers can avail of a Peace Corps type organization which would allow them to take leave from their private sector careers to spend time working within Government agencies. One of the key goals of such a program is the introduction of modern software development concepts such experimentation, fast failure, and rapid iteration into Government-related projects they are engaged on; thereby helping spawn a new culture of innovation within those Government agencies where they are placed. By getting exposure to the workings of the Government, the hope is that this experience will trigger an interest in them returning into public sector roles in the future, in other words increasing the volume of people in the technology talent pipeline. Similar arguments are made in the essay "Enabling Innovation for Civic Engagement" (Robinson, Yu, & Felten, 2010), where they state that the Government should "harness the creativity and innovation of the open market" to spur new developments that will speed up the process of liberating vast troves of Government data. When looking at this problem from the view of ordinary citizens, Pearson and Young in their book explore the notion that even though the United States is considered to be a highly

[4] https://www.whitehouse.gov/blog/2014/09/04/president-obama-names-megan-smith-us-cto-alexander-macgillivray-deputy-us-cto
[5] https://www.whitehouse.gov/the-press-office/2013/12/17/readout-president-s-meeting-ceos

technologically advanced society, its citizens are not well equipped to make good decisions about, or think critically of, new technologies. It explores in depth the issues with technical literacy in the US and how this is impeding civic engagement when it comes to taking advantage of new technologies (Pearson & Young, 2002). Although this book predates the open data movement to some extent, the concepts within it are pertinent to this research.

Flowing from those ideas, the notion of *Transparency* is one of the most important concepts when thinking about open data. Transparency is often cited as one of the main goals of making data open, and usually this desire for increased Governmental transparency is driven by civic minded individuals and groups. If those citizens don't have the wherewithal to be able to effectively advocate for this right, then Governments continue with traditional opaque practices, such as those related to the lack of transparency into the workings of the House and Senate (Koelkebeck, 2010). Efforts by agencies such as the Sunlight Foundation have resulted in bills such as the "Standards for the Electronic Posting of House and Committee Documents & Data"[6] being passed, which lead to the establishment of http://docs.house.gov as a

"…a one stop website where the public can access all House bills, amendments, resolutions for floor consideration, and conference reports in XML, as well as information on floor proceedings and more. Information will ultimately be published online in real time and archived for perpetuity"[7].

In the essay "When is transparency useful?" (Swartz, 2010), the author argues that the notion of transparency is one to be somewhat skeptical of, in terms of how challenging it can be to prove or disprove. He argues it is similar to how Governments approach the idea of 'reform'. Instead, the author argues that simply putting the data out into the open is not enough, that as much energy again needs to be applied into making all that data useful, and properly holding Government to account. In the essay "Democracy, Under Everything" (Schacht, 2010), the author details her frustration with the difficulty in seeing Government in action (both in person

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6 http://cha.house.gov/sites/republicans.cha.house.gov/files/documents/hearing_docs/2011_12_16_posting_standards.pdf

7 http://sunlightfoundation.com/policy/success

and online) and how effective implementation of open data policies could help lift the veil of secrecy that still exists in many areas of the US Government. Related to that concern, in the essay "Transparency Inside Out" (Koelkebeck, 2010), the author instead focuses on the issues of internal transparency inside these vast Government bureaucracies and how that needs to be addressed, as "these complex systems are fundamentally difficult to render transparent". He argues that if the workings of Government agencies are opaque to the insiders (i.e. Government employees), then how can ordinary citizens hope to gain more effective transparency into those same organizations? The key needs to be the creation and implementation of standardized software solutions across our vast US Government agencies, in order to give ideals like open data a real possibility of success.

Perhaps the most frequently thought of and one of the most complex issues surrounding open data is the question of *Privacy*. Often privacy and security are grouped together. These concepts have been increasingly in the public eye in recent years, due in part to the revelations about covert National Security Agency (NSA) data collection programs, breaches of customers' data from credit card companies to major retailers, and hacks related to cloud-based storage systems. These breaches have resulted in an ongoing public debate about the issues of privacy and security and a gradual rise in the general public's understanding of their lack of perceived privacy when using various services online. The fact that Governments hold vast amounts of personal data is also becoming better understood, and protecting citizens' privacy while fully unleashing the full potential of open data is a difficult problem to address. In the essay "Open Government: The Privacy Imperative" (Jonas & Harper, 2010) a list of "privacy-enhancing practices", such as data minimization, controlled backups, anonymous access, data retention and data decommissioning among others were discussed as methods by which Governments can ensure that the data they do expose through their open data initiatives are not compromised, or result in other unintended consequences such as enabling analyses that could be used for nefarious purposes. In a recent study by academics at the University of Washington Technology Policy Lab, researchers assessed the "considerable concern about the current accessibility of these records exists, along with a precautionary indication that such open access may reduce public participation for some individuals" (Munson, 2011). One of their

findings concluded that "respondents were generally comfortable with the public records information being searchable by large geographic areas (state, city, ZIP code), but less comfortable at the individual level and generally uncomfortable being searchable by last name, first name and last name, employer, or occupation." These assessments highlight the need for more research into the area of privacy in particular, and to provide data to help open data policy makers in particular create robust policies and laws that reduce the risk of privacy breaches while instilling confidence in the general public around open data and its benefits. Within Washington State itself, efforts are currently underway to harness the legal and technical expertise in the state to research and address these issues, in particular within the City of Seattle. [8]

Next we think about the concept of *Infrastructure*, which for open data most commonly means cloud computing based solutions. Cloud computing technologies are a key technology in enabling open data to reach its full potential, as only cloud-based infrastructure has the ability to provide the vast quantities of storage required at low cost while also providing the processing power required to analyze these vast datasets efficiently. Several recent papers explore this topic, such as a KPMG study where 430 public-sector government executives and 808 private sector executives from 10 countries were surveyed to learn more about their cloud strategies and expectations; and lists recommendations for how specific branches of Government can take steps internally as well as partner externally in order to migrate more of their infrastructure to the cloud (KPMG, 2013). Similarly in his paper, Shin focuses on the technology acceptance model and investigates how public sector staff in Korea would accept cloud-based solutions, listing a series of recommendations. The thrust of these and other recent similar studies, is that cloud computing will be the central platform for data in the future and Governments should begin to rapidly assess these technologies and begin planning for their deployment, or to migrate into existing cloud-based systems within their current Government infrastructure, while factoring in all of the nascent risks such as Privacy and Security (Shin, 2013).

[8] http://www.seattle.gov/information-technology/initiatives/privacy-initiative

Finally, we review the concept of *Open Government Data* itself and what really constitutes open data, review what progress has been made to date in releasing datasets, and discuss what barriers to adoption still exist or may not yet have manifested themselves. The "Open Data Barometer" study (World Wide Web Foundation, 2015) is the first multiyear study that has been undertaken worldwide to develop a snapshot of the current state of open government data initiatives, across more than 80 countries. The studies focused on issues such as Readiness, Implementation and Emerging Impacts and provide insights into how developed nations (such as the United States and the United Kingdom) are leading the way in open government data, whereas many developing countries are still in the early stages of their implementations of open data. These reports provide key learnings for the development of open data policies worldwide, and highlight the various potential positive impacts for developing countries. At the United States level, the Open Government Data Benchmark Studies conducted by Socrata, a software company whose mission is solely focused on creating open data and data-driven government solutions, provide another set of insightful data. These studies assess the state of open data from three perspectives: the public, Government and (software) developers (Socrata, 2014). These studies revealed strong support for open data among citizens and government employees alike, with strong support for politicians who advocate for open data policies over those that don't. Studies such as these highlight the emerging importance of open data and how it is becoming a more central issue within government policy, at the national, state and city levels.

One of the key barriers to the effective implementation of open data policies is the issue of *Data Integrity*, which essentially refers to the efforts required to maintain the accuracy and consistency of data over time (Kitchin, 2014). This is a complex topic and is likely the most significant supply-side barrier regarding open data implantations that exists today; mostly from a technical and cost perspective due to the large volumes of Government data that exist in legacy systems and formats that need to be converted into machine-readable formats, and once migrated those datasets will need to be maintained on an ongoing basis. As more and more datasets get released, this work will increase in scale dramatically. Open data utility is maximized when these datasets are refreshed on a frequent basis. This requires a dedicated set

of resources to be funded in perpetuity. Aside from the machine-readable aspects, other important considerations need to be taken into account, such as the quality of the data being released. Considerable work can be required to prepare existing data to a desired level of quality. In addition, a better understanding of the ideas of ‘small data’ and ‘big data’ is useful when considering open data policies. Small Data typically refers to smaller datasets, or samples, whereas Big Data is thought of as a deluge of data which one can consider to be gathered from the entire population rather than a sample (Kitchin, 2014). Both of these notions of big data and small data provide us with important opportunities to think through the issues of open data within government entities, as both kinds of data streams can exist and could be released as part of an open data policy, and both forms of data could have different kinds of consequences upon release.

Chapter 4: Methodology

In order to attempt to develop an understanding of the possible implications of an open data law for Washington State, it is also necessary to look to the other US States that have successfully implemented such a law and to analyze their results to date. While both Program Evaluation (FitzPatrick, Sanders, & Worthen, 2011) and Comparative Case Study (Yin, 2009) approaches were considered to accomplish this analysis, the chosen methodology to perform this work is a comparative policy analysis (Gupta, 2010), with the unit of analysis being existing open data laws at the US State level. This method was chosen in part due to the flexibility it allowed in providing a descriptive analysis, especially in light of the infancy of most of the open data laws currently being implemented across the United States at the State level.

In addition, four key areas of potential impact were identified for the analysis:

1. Economic
2. Legal and Political
3. Civic Engagement
4. Technology and Research

These four areas were identified by this researcher for a variety of reasons. As referenced earlier in this study, frequently cited goals for open data include improving Governmental transparency, accountability, and efficiency. The idea of "Government data as a Platform" creates opportunities for increased civic engagements with government, through technology and advocacy; and also helping unleash the potential economic impact of open data. The legal and political issues surrounding open data laws and their consequences are of interest, especially as House Bill 2202, brought to the Washington State legislature in the 2013/2014 biennium legislative session, did not become law and it is important to develop our understanding of why that occurred. Finally, the area of Technology and Research is of special interest in Washington State for several reasons. Washington State is home to some of the largest software companies in the world, has a huge aerospace industry, a rapidly growing technology startup ecosystem including companies that are leaders in the open data technology sector, world class universities including the University of Washington which is one

of the State entities that would have been under the remit of HB 2202 had it become law. The State has large reserves of intellectual horsepower which could be tapped to help develop new solutions to the implementation of open data laws, and also to devise ways to make open data more accessible to ordinary citizens. Together, the analysis of existing open data laws with the analysis of the proposed open data law for Washington State would provide the key findings for this study.

Data Collection

No primary data were gathered, and data was collected from several secondary data sources which are listed below. The primary source of secondary data for the current state of open data laws in the US is the Sunlight Foundation, a non-profit agency in Washington DC which focuses on open data policies and laws, and advocates for their implementation more broadly.

Additional secondary data was gathered from several sources. The US Federal open data portal (known as data.gov) has a comprehensive section regarding local open data portals across the United States at the state, city and county level, as well as data regarding the impact of open data laws. Existing open data laws were gathered from each respective State and analyzed, and any available annual reports were also gathered and analyzed. Due to the small number of annual reports at the State level, it was decided to include annual reports from the City level in order to supplement the data being used for the findings and recommendations. The website for the Office of the Chief Information Officer (CIO) for Washington State also contained secondary data that was included in this research, in particular their section regarding open data. The Office of the Chief Information Officer, or OCIO, is the body within the Washington State apparatus that would be tasked with driving the implementation of any open data law for the State and thus their data was considered to be of high value for the purposes of this study. Finally, the data from the HB 2202 legislative process was gathered and analyzed. This included all Washington State HB 2202 public hearing records, including Policy Analysis documents, Bill Amendments, and written and verbal Testimonies by actors for and against the bill. Key data points relating to each of the four key areas of impact to be used as part of the overall analysis (Economic, Legal and Political, Civic Engagement, Technology and Research)

were captured. In addition, budget projections from the HB 2202 Fiscal Note were manually entered into Excel and these data then provided the ability to perform a financial analysis of the costs of the Bill versus its projected savings estimates.

Data from both the Sunlight Foundation (State and Local Open Data Policy datasets) and the US Federal open data portal (Local Government) sources were recoded to allow for statistical analysis and for the creation of visualizations to aid with highlighting the diffusion of open data policies and laws across the United States to date. Data recoding was performed using Excel, and visualizations were created using this recoded data in Tableau. All of the recoded data is stored in the appendix section of this paper.

All available annual reports from both States and Cities in the United States with existing open data policies were identified and their contents analyzed to establish examples of each of the four key areas of impact to be used as part of the overall analysis (Economic, Legal and Political, Civic Engagement, Technology and Research).

Using these combined data, a set of key observations regarding the implementations of open data laws across the United States to date were generated. These observations, along with the analysis of the Washington State House Bill 2202 public hearing records, allowed for a set of potential impacts to be identified for a proposed open data law for Washington State and also to provide the basis for a set of policy recommendations for any future version of such a Bill.

Chapter 5: Results and Discussion

Prior to discussing the results of the HB 2202 analysis, first we review the findings from the analysis of the open data laws that are currently being implemented in the United States at the State and City level. The findings from both sets of analyses will provide a framework for generating a series of high level observations related to open data laws in general, before helping to devise a set of potential impacts for an open data law for Washington State.

Section 1: Discussion

Open data laws being implemented in the US

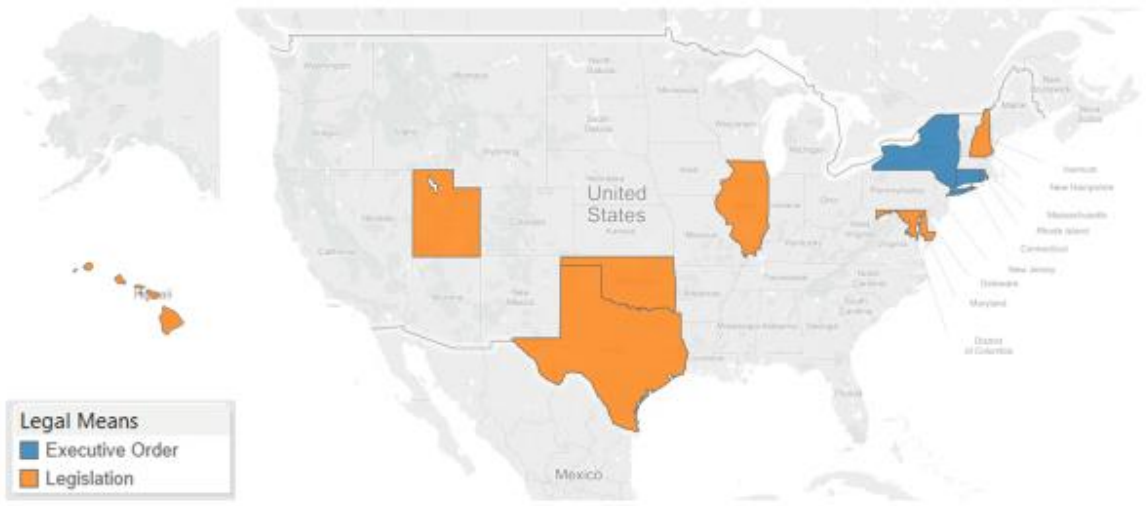
At present, there are ten US States that have officially instituted and implemented open data laws. These laws came into effect between 2011 and 2014, and through two different mechanisms. Seven of the States passed these laws via the legislative process (similar to what Washington State was attempting to do with HB 2202), whereas three of the States (Connecticut, New York and Rhode Island) passed such laws via an Executive Order. It is worth noting that this mixture of the legal means for open data law enactments is repeated at the City level also across the United States.

These State level data are represented below in tabular and visualization formats.

Table 1: US States with open data laws enacted

State	Year Enacted	Legal Means
Connecticut	2014	Executive Order
Maryland	2014	Legislation
Hawaii	2013	Legislation
New Hampshire	2013	Legislation
New York	2013	Executive Order
Rhode Island	2013	Executive Order
Utah	2013	Legislation
Illinois	2012	Legislation
Texas	2011	Legislation
Oklahoma	2011	Legislation

Figure 1: US States with open data laws enacted



One observation from these data are that these laws are all very recent, ranging from 2011 to 2014. No new open data laws at the US State level have come into existence in 2015. Considering the first open data Executive Order from President Obama occurred in 2009, it had taken just two years before the first wave of states began to enact their own open data laws. These laws were in addition to states following the Federal Data.Gov model and creating open data portals with no backing state legislation.

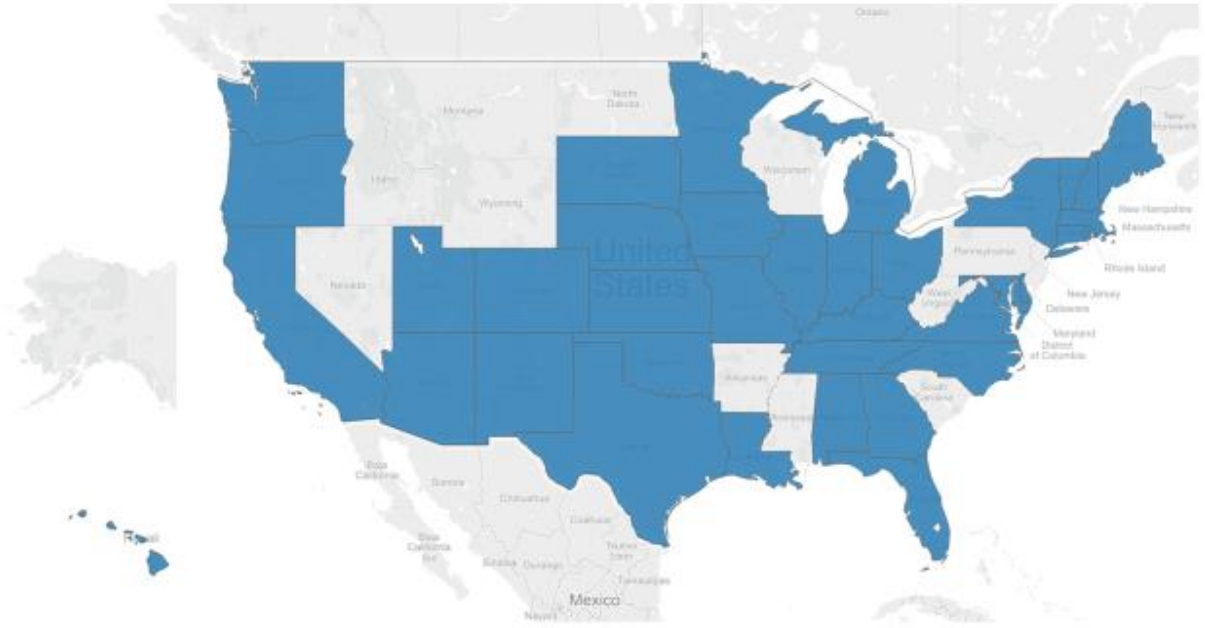
Some state open data laws have also had amendments made to them since they were first passed, in order to strengthen them. The states which have amended their open data laws are Illinois and New Hampshire, both of which passed their open data laws through legislation. According to the Maryland annual report on their open data law implementation (2014), the legislature there plans to strike out redundant Public Record acts (Executive Orders 01.01.2012.04 and 01.01.2012.18) rather than strengthen the existing open data law.

US States with an Open Data portal (Data.Gov)

According to the data available at the US Federal open data portal (http://data.gov), currently there are thirty nine US States who have implemented a version of the Data.Gov open

data portal at the State level. In effect, these States have been implementing the Executive Orders issued by President Obama in 2009 and 2013. These open data portal implementations have been occurring *independently* of the establishment of open data laws at the US State level, which creates a somewhat confusing policy mix. These states are highlighted in the visualization below in Figure 2, and the full listing of US State with a Data.Gov portal is listed in the Appendices.

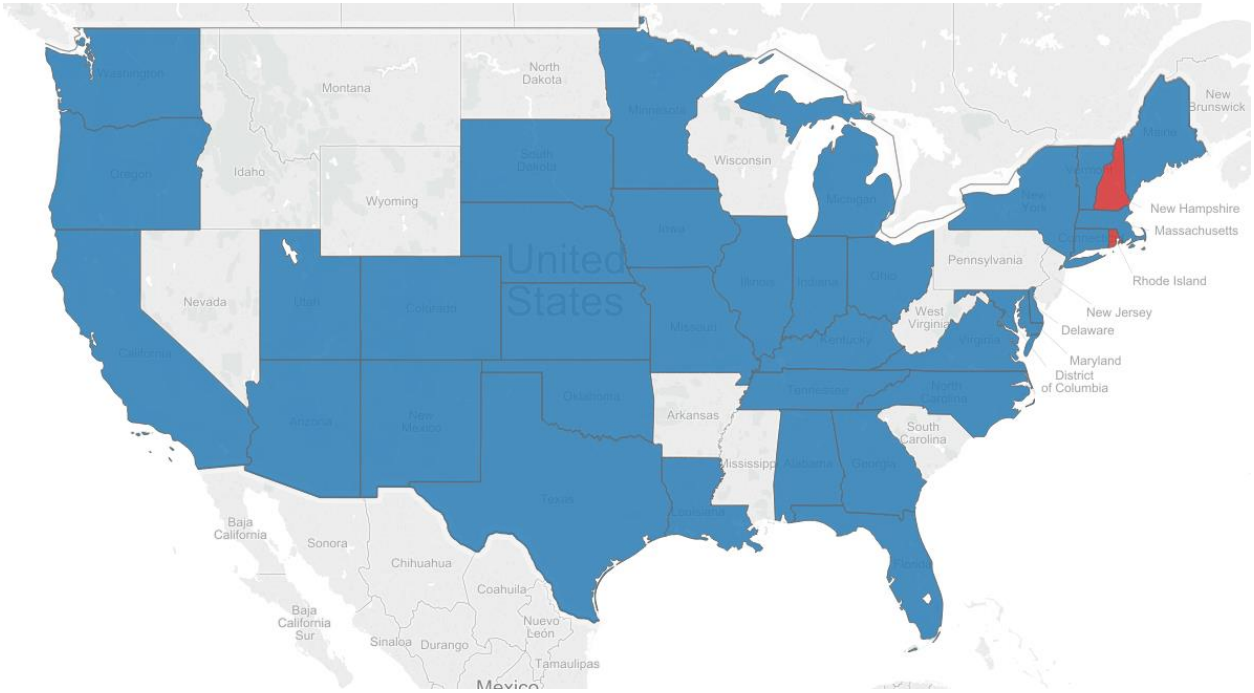
Figure 2: US States with an Open Data portal (Data.Gov)



Source: *http://www.data.gov/open-gov*

As can be seen, Washington State is among those states with a Data.Gov open data portal, in this case the URL is http://data.wa.gov. One of the questions these observations raise is why do most of these states have open data portals (following from the Federal Data.Gov model), and no open data law at the State level? Or another question would be why do some States with an open data law not have a Data.Gov portal? Two states (New Hampshire and Rhode Island) comply with the latter condition, as shown in Figure 3.

Figure 3: US States with an Open Data law but no Data.Gov equivalent portal



Note: New Hampshire and Rhode Island are shown in red to signify that they have no Data.Gov portal, yet have open data laws at the State level.

My research has uncovered some inaccuracies in the data being reported about which states have Data.Gov portals. New Hampshire is reported as having a Data.Gov portal, yet no such portal currently exists and so for the purposes of this research paper, I am discounting the Data.Gov record for New Hampshire. In addition, it is interesting to note the variation in the Enacting Bodies who are tasked with the implementations of these open data laws. As can be seen from Table 2, no two States have identical models and some States have not nominated any agency at all. This suggests that there are a wide range of possible outcomes from an implementation perspective, and highlights a potential weakness in the open data accountability in some of these States.

Table 2: US States with Open Data laws enacted

State	Year Enacted	Legal Means	Enacting Body	Open Data Portal	Data.gov Portal	Annual Report
Connecticut	2014	Executive Order	Chief Data Officer, Agency Data Officer, and Open Data Advisory Panel	Yes	Yes	No
Hawaii	2013	Legislation	Chief Information Officer	Yes	Yes	No
Illinois	2012	Legislation	Office of the Governor	Yes	Yes	No
Maryland	2014	Legislation	Council on Open Data	Yes	Yes	Yes
New Hampshire	2013	Legislation	Department of Information Technology	No	No	No
New York	2013	Executive Order	Chief Technology Officer and Chief Data Officer	Yes	Yes	Yes
Rhode Island	2013	Executive Order	n/a	Yes	No	No
Texas	2011	Legislation	n/a	Yes	Yes	No
Utah	2013	Legislation	Transparency Advisory Board	Yes	Yes	No
Oklahoma	2011	Legislation	Office of State Finance and OK.gov	Yes	Yes	No

The purpose of these data and visualizations is to highlight the broad mix of open data policies and laws being enacted at the US State level currently, and to highlight some of the overlap and redundancy in this policy mix. Other questions from this analysis arise, such as whether these new laws enacted structural Governmental differences across the states, or did the new laws simply recognize pre-existing differences? For example, did Utah already have a

Transparency Advisory Board, or did Hawaii already have a Chief Information Officer (CIO) prior to the introduction of this open data law? These data also suggest the existence of open data proliferation, otherwise known as 'policy diffusion', in action across the United States.

Evidence of Policy Diffusion

The result of this mixture of policies is that we see evidence of policy innovation and by extension policy diffusion (Sabatier, 2007) in action at the US State level. It can be argued that we are seeing evidence of top-down diffusion from the Federal level through the Presidential Executive Orders regarding open data and the subsequent establishment of Data.Gov portals at the federal, state and city level (White House, 2009). There is also evidence in the data presented in this paper of bottom-up diffusion from the city and county level where some cities and counties, in US States where neither an open data law or a Data.Gov portal exists at the State level, have implemented open data polices and portals. An examination of these kinds of policy innovations and their subsequent diffusion is desirable in aiding with this research, as these models can potentially provide insights on the possible motivations in play regarding open data laws and could provide policy makers with fresh insights into the effective establishment of an open data law for Washington State in the near future.

At the Federal policy level, it can be argued that we are observing the "Vertical Influence Model" in operation, where States emulating the policies not of other States, but of the national government (Sabatier, 2007). In this case, the national government has mandated the implementation of this policy, however no federal funding was provided and the relatively slow rollout of these policies and portals across all fifty states is perhaps indicative of the lack of an incentive to do so. Studies have shown that policies for which the federal government offer incentives diffuse more rapidly than so-called "state preserve" policies, where states have some discretion about when policies are implemented (Welch & Thompson, 1980). This appears to be the case with the open data federal directives to date lacking any real tangible implementation incentives.

At the US State level, different models of policy diffusion may be in play. In "Figure 1: US States with open data laws enacted", we see some evidence of a Regional Diffusion Model

(Sabatier, 2007) in operation. The Regional Diffusion Model posits that states are primarily influenced by those states most geographically approximate, and we can observe this in the cases of Texas and Oklahoma, and with a cluster of several Northeastern states also having implemented open data laws. Factors explaining this kind of policy diffusion include states learning from nearby neighbor states with approximate economic and social problems such that policy actions may have similar effects in these states. The Isomorphism Model (Sabatier, 2007) posits that states can share similarities with other states that are not geographically approximate, such as an ideological similarity on the liberal – conservative continuum. Other studies have shown that policies can also diffuse upon a wide range of "political, demographic and budgetary similarities across states" (Volden, 2006).

If we analyze policy innovation and diffusion within a particular state, such as Washington, then an examination of the Internal Determinants Model (Sabatier, 2007) is warranted. This model presumes that the factors causing a state to adopt a new policy are primarily the political, economic and social characteristics of the state. Once a state, such as Washington, becomes aware of a policy innovation (such as other states implementing open data laws and policies) then the internal characteristics of the state are more likely to determine if and when the policy adoption will occur, rather than external pressures. It is a reasonable assumption to make that in the case of HB 2202, it was internal determinants that caused the open data law not to be passed. The analysis of that failure in this paper could potentially lead to a deeper understanding of those internal determinants and thus aid with a future attempt to pass such a bill into law.

Review of the open data annual reports

As only two annual reports were available at the State level (New York and Maryland), I have also included the annual reports from two major cities (New York and Chicago) that have advanced open data law implementations into this analysis, as these city level reports can reveal important insights and policy innovations that could diffuse to the State level. Also, the scale of their open data implementations rival if not exceed those of most US states.

These reports were analyzed using the four areas of impact that will be used to identify potential consequences arising from an open data law for Washington State: Economic, Legal and Political, Civic Engagement, and Technology and Research.

At the State level only two annual reports have been issued, one in 2014 and one in 2015. Both reports made references to the fact that each State consider themselves to be at the forefront of the open data movement, and that this was listed as a highlight. While both reports were mostly descriptive in nature, the Maryland report provided a structured "Findings and Recommendations" table which provided a list of key results of their open data implementation to date and objectives based on those findings for the coming year (State of Maryland, 2015). The New York state report was similarly structured to the Maryland report in that it included both a review of the current state of their open data law implementation, and also a forward looking statement; however it did not contain a structured table of objectives but rather a list of some high level goals (State of New York, 2014). In both cases, neither report listed dates by which these objectives needed to be met nor who the responsible agency is, which highlighted the potential absence of accountability outside of these reports.

In the following table, a synopsis of the key takeaways from the analysis of these state level reports is shown. Both key findings and future goals are captured in the same table.

Table 3: Analysis of annual reports at the US State level

	Economic	**Legal & Political**	**Civic Engagement**	**Technology & Research**
NY State (2014)	More than 50 State agencies and localities are currently publishing data on Data.NY.Gov County, city, town, and/or village information is accessible in a	Continue integrating open data into the core mission of government	Will publish Data.NY.Gov quarterly reports	Innovative usage of Github, great support for developers New apps utilizing data from Data.NY.Gov

	wide variety of datasets			
Maryland (2015)	Track FOIA requests centrally Smaller jurisdictions to take advantage of open data infrastructure	Old Public Information Executive Orders now defunct Current law is inconsistent with the intent of the open data Act, treats GIS data separately Use open data to assist with Gubernatorial Transition	GIS Data: law has raised the cost and lowered the velocity of data distribution Ask: Create a Statewide Data Inventory Ask: Merge existing portals into one open data portal	Ask: Improve the quality of the data to aid research

At the City level, reports for the cities of Chicago and New York were analyzed using a similar method. Both cities were chosen as they have substantial open data policy implementations and are also recognized to be at the forefront of the open data movement (like the States, something both cities were keen to highlight in their reports); and because of their scale they can provide a good comparison with a state such as Washington.

One of the main differences in the City reports was their focus on the metrics for datasets released, data downloaded, and visits per month to their open data portals. This was useful as a way of providing tangible statistics to the report recipients on the increase in usage trends, and also to provide targets for future years, such as a target number of datasets to release. Based on these usage statistics in the report, there are also direct linkages being made between these usage statistics and increase in datasets and the perceived effects of these data being accessed; such as “By making data accessible, the City’s significant expansion of content and growth in traffic has facilitated the development of numerous innovative civic applications by independent developers” and providing a list of applications (City of Chicago, 2013). A future

objective of Chicago is to publish a list of the most frequent FOIA requests, in an attempt to reduce the number of FOIA requests being made to the city in the future. They cite the successful example of their Department of Public Health, when "in the 9 months after releasing environmental records, the Department of Public Health (CDPH) experienced a 65% drop in the number of FOIA requests for environmental records" (City of Chicago, 2013). Finally, they list a set of targeted datasets that they wish to target in the coming year for release without providing any hard deadlines or identifying who precisely is responsible for completing the work (City of Chicago, 2013).

The report by the City of New York is quite similar to that of Chicago, in terms of its focus on key metrics surrounding the numbers of datasets, the number of downloads and so on. It also provides a linkage between the ever increasing availability of open data and its impact for New York, in terms of applications and other civic uses. It also calls out a series of concerns and recommendations for both increasing the availability of datasets and also ways in which the current law could be strengthened through increased accountability and the creation of a public right of action (City of New York, 2013).

In the following table, a synopsis of the key takeaways from the analysis of these city level reports is shown. Both key findings and future goals are captured in the same table.

Table 4: Analysis of annual reports at the US City level

	Economic	**Legal & Political**	**Civic Engagement**	**Technology & Research**
NYC (2014)	Agencies are using the open data portal for internal purposes Developers are using the open data portal to build apps for public use	Strengthen the open data Law: by a public right of action Create accountability for statutory deadlines. Clarify which agencies are subject	High value data sets are being released. Journalists are using the open data portal. e.g. to help with Hurricane Sandy Create a better understanding	Academics are using the open data portal (less spend on licensing fees) Goal: Improve the portal's technical deficiencies

	City Agency Performance data not released	to the open data Law	of what data the public wants Agencies must stop selling data & publish data in a machine readable format	
Chicago (2014)	City Procurement data to be published Publishing Most Frequent FOIA Requests	Improve City-County Coordination re: open data	Improve methods for Dataset Requests Create an open data Status Blog	Use open data to gain a deeper perspective on service requests made by Chicago's residents

HB 2202 testimony

House Bill 2202 (HB 2202: Concerning the establishment of an open data policy to facilitate sharing and publication of government data)[9] was a bill was submitted to the Washington State Legislature in the 2013-2014 biennial legislative session, but failed to become law and was not resubmitted in the 2015-2016 biennial legislative session. The bill was proposed by five Democratic Representatives; Carlyle, Pollet, Bergquist, Hudgins, and Riccelli. The Bill passed through the House on February 10th, 2014 but failed to get through the Senate in subsequent sessions.

The goals of the substituted HB 2202 were as follows:

1. It required the Washington State CIO to coordinate the implementation and expansion of a unified open data portal at the State level.
2. It required that certain agencies from the Executive Branch only to provide the CIO with a compliance plan, and to designate a Data Officer to oversee the data integrity process.

[9] http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2202&year=2013

3. It encouraged local governments & other branches of State government to prepare public data sets for publication into the open data portal, but it did not mandate this work.
4. It would prohibit the CIO from making subsequent changes to the source data of a public data set that was published onto the open data portal.

Washington State already has several portals that could be considered as open data portals, in addition to the http://data.wa.gov portal. According to the OCIO's website, "*Geography.wa.gov is the open data portal for Washington's geospatial community. It offers professional grade geospatial data, managed by a community governance group, with enterprise data standards to back it up. Fiscal.wa.gov offers citizens and analysts' data and insights into state spending, budgets and staffing. Workforce Explorer offers a broad array of information for citizens, companies and communities navigating the state's dynamic job market. Results Washington is data-driven for performance assessment. This is where the Governor goes to see the whole spectrum of programs and prospects. Data.wa.gov completes the picture, with citizen-accessible tabular data, data visualizations like charts, graphs and maps, and a simple but powerful interface for programmers and data professionals in large and small organizations. This is the preferred and general-purpose hub of the state's* open data *initiative.*" [10]

As such, one of the key goals of HB 2202 was to begin a process of consolidating these portals into the centralized open data portal, which would lead to improved discoverability and reduced costs and administrative overheads.

The bill was first introduced on January 10th, 2014 and public testimony began on January 24th. Two substitute bills were introduced, and HB 2202 passed the House on January 31st, 2014. It failed to pass the Senate however, and appears to have stalled at the Rules Committee stage in the Senate process. No secondary data in the public testimony exists to explain exactly why the bill stalled.

[10] https://ocio.wa.gov/initiatives/open-data

The public testimony has offered some evidence on why this bill required two substitute bills to be produced and why it may have failed to pass the Senate. Representative Carlyle was the primary driver of the supporting testimony from the five Representatives who were sponsoring the bill, and his testimony was primarily focused on the ideas of cost reduction, Government efficiency and how open data would be the primary driver of Goal 5 of the Results Washington initiative "Efficient, effective & accountable government"[11]. He focused heavily on the suggestion that the creation of this law would lead to a substantial reduction in the number of FOIA requests, and also made several very general statements such as the passing of an open data law "sets the default of public information to open". Statements such as these immediately prompted concerns to be raised, where the notion of "data creep" was used to describe the idea that every single Excel file on every computer could be under the jurisdiction of this new law. There were related concerns raised about the scope of the "open data set" definition and how that needed to be narrower in definition. The University of Washington, a key supporter of the bill, also raised this concern. The lack of a Fiscal Note during some of the key committee testimony was also noted, and in general there was a lack of financial data to support some of the key estimates, such as potential Freedom of Information Act (FOIA) savings, or an accurate costing of the implementation costs of HB 2202 should it become law.

The following table provides a high level summary of some of the key points raised during the public testimony.

Table 5: HB 2202 testimony summary

Supporting Arguments	Concerns raised	Researcher Observations
"Sets the default of public information to open"	"Data Creep" – every Excel on every computer?	Committees didn't fully understand the intent of the Bill
"This will make State Government more effective" (Results Washington)	Costs as barrier - Fiscal Note was 'indeterminate'	Significant portions of the testimony was spent educating Committee members on "open data"

[11] http://results.wa.gov/what-we-do/measure-results/effective-efficient-accountable-government

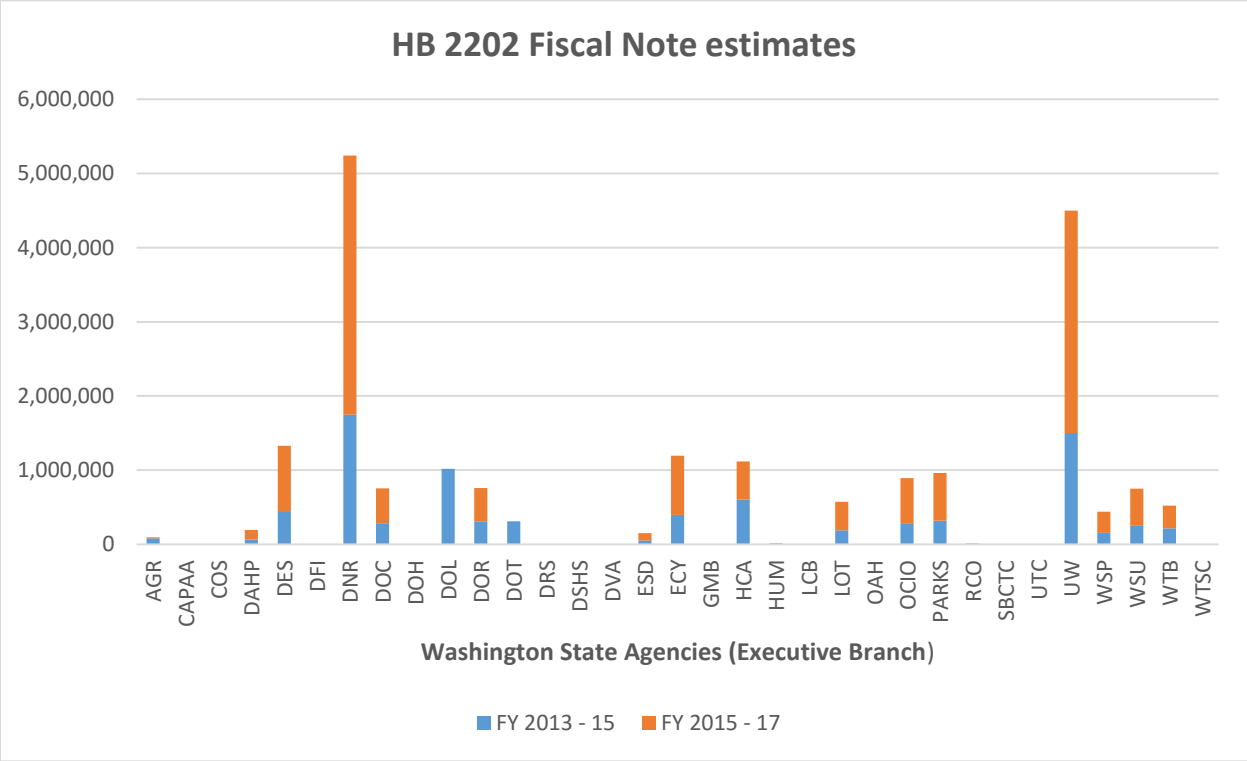
"…that will have a positive economic impact"	"…narrowing the 'open data set' definition…" UW also cited this concern	Little or no supporting data for Supporting Arguments (e.g. FOIA requests)
"this bill is critical in reducing our long-term costs in the public arena"	Clarifications sought re: scope (Executive Branch only, didn't affect Public Records Act RCW 43.41A.125)	
"Framework for a policy that allows the CIO to organize the public's data in a much more responsible way"	Aggressive timelines for implementation were called out as a concern	
Continual references to the probable decline in FOIA requests and the resulting savings		

Upon looking further at the Fiscal Note that was provided, it is interesting to note that several of the State agencies provided no data at all, and those that did provided quite varied estimates. When all of the available estimates were calculated over the following two bi-annual budget cycles, we come to a total cost estimate of $20.84 million. As not all agencies gave estimates, the true total cost estimate would have been higher. An interesting comparison would be to compare the total projected costs of HB 2202 against the estimated savings brought about the reduction in FOIA requests. FOIA requests are expensive to process in terms of time and people resources. In 2011, a report indicated that over 4,000 Federal employees were engaged full time on processing FOIA requests across all Federal agencies[12]. It is reasonable to assume that a large proportion of these employees could be redeployed to other tasks should a comprehensive open data program be enabled which would negate a lot of the current FOIA requests being made. In addition, the Federal Government estimates that it

[12] http://www.foia.gov/2011foiapost26.html

recoups on average just 1% of the total costs of FOIA requests from the fees it charges when such requests are made by citizens[13]. A more accurate cost projection for the implementation of HB 2202 versus an accurate estimate of the FOIA cost savings due to an open data law could prove to be a useful supporting statistic for any future version of HB 2202 being proposed. In addition, there are now supporting data from other jurisdictions who have attempted such cost savings, such as the Department of Public Health example from the City of Chicago discussed earlier in this paper (City of Chicago, 2013).

Figure 4: HB 2202 Fiscal Note estimates



Section 2: Findings

When we combine the analyses of both existing open data laws at the US State level (and some major cities), and that of the HB 2202 failed 2013 – 2104 legislative process, it is

[13] http://www.foia.gov/data.html

then possible to draw up a list of several key observations regarding barriers to the successful passing and implementation of open data laws in the United States presently.

Table 6: Suggested barriers to the successful passing and implementation of open data laws in the United States

Probable Barrier	Supporting comments
'open data' definition not clear	There is no single definition for 'open data'. Policy makers and legislators struggle to fully understand what these policies and laws are attempting to do. Frequently cited in the HB 2202 testimony.
More oversight & accountability required	There is a need for better oversight and accountability at the State level, to ensure that existing open data policies are successfully implemented. Referenced at the State and City level in some annual reports.
Open which Datasets? Who decides?	There is confusion over what Government datasets should be opened up, who gets to decide, and what should be considered to be a "high value" dataset. Do policymakers decide, or do citizen activists decide?
Uncoordinated roll-out of policies (Policy Diffusion)	There doesn't appear to be a coordinated approach when it comes to the implementation of open data laws and policies across the US (at the State level). Also visible at the City and County level.
Significant barriers to implementation exist (e.g. Privacy)	Concerns over Privacy, Cost and Data Integrity appear to be key barriers to successful adoption and implementation of open data policies. Frequently cited in the HB 2202 testimony as issues. Also see evidence at the US State and City level.
How to clearly show the benefit of open data laws?	Showing the "impact" of existing open data policies is difficult, and is a barrier to

	successfully furthering this policy diffusion. Metrics on open datasets, number of applications created are not enough. Economic impact can be more persuasive, e.g. FOIA cost reductions, and estimated yearly added value from open data.
Differences between open data 'law' & open data 'policy' not clear	The key difference between open data laws and open data policies appears to be primarily based on the issue of accountability & mandates. Cited in Maryland and City of New York annual reports.

Using all of these findings, it is now possible to derive a set of potential impacts regarding the establishment of an open data law for Washington State, under the four areas of impact chosen: Economic, Legal & Political, Civic Engagement, and Technology & Research.

Economic:

While no data current exists for the overall potential economic impact of open data on Washington State, there are a number of potential positive impacts that can be identified based on the analysis contained within this paper, and using local knowledge of issues pertinent to the state today, such as projected population growth. Some potential impacts in this space that could be realized by a law such as HB 2202 are listed here.

1. It could lead to fewer FOIA requests being made, enabling the State to repurpose those staff for other key functions. As highlighted earlier in this paper, processing FOIA requests is expensive and labor intensive. By analyzing the most common FOIA requests to understand which key datasets could be liberated to address those requests in future, this should result in substantial cost savings over time.
2. It could result in fewer data silos at the State level, and result in increased re-use of data. Similarly, the State would be able to clean up its data through feedback loops via

other States agencies and public consumers of the data, in other words it could aid with reducing data integrity costs.

3. It would be a key enabler of the "Results Washington" initiative Goal 5: *Efficient, Effective and Accountable Government*, and in particular the "*Transparency and Accountability*" sub-goal. While there are specific, measurable targets regarding this goal, they do not provide an estimation of the potential economic impact to the State by reaching them.[14] Providing such estimates could be helpful in establishing and then strengthening an open data law for the state.
4. It could lead to more entrepreneurs and/or startups being aware of and using open data to power their businesses, leading to increased economic activity, employment and tax revenues.
5. The population in Washington State is projected to grow steadily into the future. [15] Increased usage of open data could lead to outcomes where public and private entities can provide tools and analysis to help policy makers with planning for these changes, such as previous infrastructure development, public safety, traffic, and environmental trends.

Legal & Political:

In this space, we mainly think about potential impacts in the form of increased transparency and accountability brought about by the increasing availability and usage of open data, facilitated in part by an open data law. Some potential impacts in this space that could be realized by a law such as HB 2202 are listed here.

1. It could result in increased transparency and oversight into the Executive Branch of the Washington State government in particular. In time, the other branches of our Government (Legislative and Judicial) could be considered for inclusion once a good precedent has been established, but the privacy challenges could be considerable.

[14] http://www.results.wa.gov/what-we-do/measure-results/efficient-effective-accountable-government/goal-map
[15] http://www.wsdot.wa.gov/planning/wtp/datalibrary/population/PopGrowthCounty.htm

2. In time, once an open data law and associated unified portal has been established, this open data law could be widened to include mandating City and County municipalities to open their datasets for improved local transparency and accountability. In HB 2202, they are encouraged only to do so. Incentives to increase voluntary participation by City and County municipalities should be considered.
3. The proposed law could be strengthened to include a "public right of action". This could assist with holding the implementation bodies of this open data law more accountable. If these agencies were to miss implantation deadlines, currently there is no public recourse except applying pressure in the press or via local representatives. A "public right of action" would hugely increase the power of the open data Law by actually compelling agencies to comply with it (City of New York, 2013).
4. Recent research shows that citizens are more likely to vote for an Open Government champion by a 3 to 1 margin (Socrata, 2010).

Civic Engagement:

When we think about Civic Engagement, we typically think about traditional person-to-person interactions such as public meetings where citizens can advocate for issues with public representatives. open data provides additional opportunities for enhancing Civic Engagement; primarily through the datasets being released via an open data portal and allowing citizens to request missing datasets to be made available. The insights and visualizations that can be created using these rich data sources can lead to positive outcomes that can ultimately help strengthen our democracy, or provide technical solutions quickly to local problems that our Government might be struggling to respond to in an agile fashion. Some potential impacts in this space that could be realized by a law such as HB 2202 are listed here.

1. A single open data portal can help drive increased civic engagement activity, such as 'hackathons' where solutions (typically applications) for local issues are developed using open data. Such hackathons are already prevalent in Seattle, having a unified open data portal could lead to increased civic technology activity across the State.

2. It could lead to increased advocacy on key issues of public concern, and increased usage of open data by investigative journalists. Similar to FOIA requests, an increase in requests from the public for certain datasets to be opened could help the State prioritize which datasets to target as part of their open data expansion targets, thereby increasing utility and efficiency.
3. It could help reduce the so-called 'data divide', by enabling those in the general public with limited or no data analytics experience to have easy access to rich data visualizations provided by such a unified open data portal, or instructions on how to perform these tasks themselves using freely available software.

Technology & Research:

Open data provides exciting opportunities in the Technology and Research arena in particular. Washington State has a deep pool of highly skilled technical talent, as well as world class research facilities such as the University of Washington. Open data provides many opportunities for those communities to both avail of these data for their purposes, and also to help create the tools and applications that will allow for an enhanced citizen experience with open data. Washington State could be at the vanguard in progressing this open data movement. Some potential impacts in this space that could be realized by a law such as HB 2202 are listed here.

1. It could lead to outcomes where solutions to improve discoverability and usability of this data are created by entities within Washington state, such as startups or researchers. With our depth of technical talent in the state, Washington could become a clear leader in removing barriers to open data.
2. Washington State already has very rich Environmental open data resources. Consolidation of these data into a single portal could help with advancing research into the impacts of climate change in our state.
3. The University of Washington cited usage of open data as a key aid to its research in several areas, as part of its submission to the HB 2202 committee hearings. Increased

availability of datasets could lead to a reduction in licensing fees for researchers at universities and other educational institutions across the State.

4. Related to the previous impact, it could result in the development of better R&D frameworks for increased usage of open data within our State educational institutions in general.

A summary of these potential impacts is captured in the table below:

Table 7: Open Data Law for WA - potential impacts summary

Economic	**Legal & Political**	**Civic Engagement**	**Technology & Research**
Fewer FOIA requests (FOIA data to be made available)	Increased transparency & oversight into the Executive Branch of WA State government	Lead to more 'hackathons'	Drive improvements on discoverability and usability of open data (e.g. Yelp)
Fewer Data silos, greater reuse of data, feedback loop	Law widened to include mandating City and County municipalities to open their datasets	Increased advocacy on key issues of public concern	Help advance research into the impacts of climate change in our state (GIS data, etc.)
Key enabler of the "Results Washington" initiative Goal 5: *Efficient, Effective and Accountable Government*	Law could be strengthened to include a "public right of action" re: accountability	Increased usage of open data by investigative journalists	Push development of R&D frameworks for increased usage of open data within our State educational institutions
More Startups using open data		Help reduce the so-called 'data divide'	
Population growth projections in Washington State, aid research			

Chapter 6: Conclusion and Policy Recommendations

This study and the works cited in it point to several dynamics that strongly suggest that Open (Government) Data will continue to grow in importance - as a mechanism through which citizens can be empowered and civic engagement enhanced, data driven policy can be more rapidly produced, improvements made in Government transparency and accountability, and potentially unlocking significant additional economic activity, to name just some of the possible benefits. Specifically for Washington State, several potential impacts have been identified that could be incorporated into the policy analysis for future versions of a proposed open data law which could aid in persuading State Legislators that such a law is not just merited but highly desirable.

In addition to the potential impacts that have been identified in this paper, a number of key policy recommendations have been created based on the analysis of the attempt to bring HB 2202 into law, and also on the analysis of the existing open data laws at the State level in the United States at this time.

The key recommendations are as follows:

Recommendation 1: Reduce Privacy concerns

The frequently cited privacy concerns (and to a lesser degree, security) by Washington State legislators when assessing HB 2202 need to be addressed in a robust and comprehensive way. Privacy is a concern across a plethora of laws related to technology and is not solely related to open data. The ongoing privacy and security revelations such as the leaks surrounding classified NSA programs have contributed to a general unease among policymakers and citizens alike. Thus ongoing research being carried out by multiple agencies in the public and private sectors into the areas of privacy and security should be factored into the policy analysis process for any future version of this Bill. In the case Washington State, it is recommended that it should incorporate findings from local efforts such as the work currently being undertaken by the City of Seattle in this arena. [16]

[16] http://www.seattle.gov/information-technology/initiatives/privacy-initiative

Recommendation 2: Provide more education on the benefits of Open Data

The Office of the CIO (OCIO) should, where possible, provide better background education for legislators and all other interested stakeholders on open data in advance of any new version of this Bill being introduced in a legislative session. Specifically it should focus on highlighting the benefits of open data and address areas of key concern such as Privacy and Cost. This could go some way to alleviating concerns around potential unintended consequences of implementing open data laws in Washington State. This education doesn't need to occur just prior to the introduction of a new version of this Bill, rather it can be an ongoing effort over time to help build awareness of open data and to reinforce the benefits of open data over time. It could also provide opportunities for these policy actors to become more engaged with open data in advance of a new Bill, and even create new advocates for such a law. In addition, the various State agencies that would be required to implement this law, catalog their datasets and provide budget estimates would also benefit from this education potentially and their improved ability to provide more accurate cost estimates in particular would be highly desirable.

Recommendation 3: Costs need to be accurately projected in advance.

The costs of implementing such a law needs to be accurately projected in advance. The lack of accurate budget estimates, especially in the House Committee stages of HB 2202, could be argued to have acted as a friction point to the successful passing of this Bill. In addition, the frequent references to the cost savings in the reduced number of FOIA requests needs to be backed up with supporting financial data. This research was unable to uncover any such FOIA data. The limited financial analysis provided in this paper also provides evidence of a lack of coordinated knowledge across the affected State entities required to implement such a Bill. In the Fiscal Note, we see that several agencies provided no cost estimates at all, and the range of cost projections across the agencies that did provide data vary significantly[17]. This signifies a potential issue in obtaining accurate cost projects in the future, which needs to be addressed.

Recommendation 4: Add provisions that would strengthen the Bill

[17] https://fortress.wa.gov/ofm/fnspublic/legsearch.aspx?BillNumber=2202&SessionNumber=63

Several States have already established open data laws and it would be desirable to strengthen future versions of this Bill using learnings from these States. Using data gathered from these States, this paper provides some examples of provisions that could be considered for future versions of the Bill, such as the 'public right of response', which would fit well with the open data ethos of openness, transparency and accountability. It is worth noting that to date no US State has rolled back an open data policy or Bill, rather we are seeing evidence of them seeking to expand and strengthen their existing laws and policies. Washington State could proactively strengthen its own proposed open data law in any new version, or better yet seek to provide some policy innovations that build upon proven concepts from other States.

Recommendation 5: Perform enhanced policy analysis

Prior to submitting an updated future version of an open data Bill, it is recommended that in addition to the existing policy analysis work that would normally be done, that the Feasibility Assessment Technique (Gupta, 2010) also be employed to attempt to predict the outcome of the legislative process by estimating the probable support of all policy actors. This could provide an early warning on possible issues that could arise in the legislative and committee processes and enable the Bill proponents to attempt to preempt possible concerns and issues ahead of time, and reduce the friction towards a successful Bill passing. Additionally, the data gathered on these policy actors could potentially be reused when performing policy analyzes on other Bills.

Chapter 7: Limitations and Future Research

Finally, we review the limitations of this study, and propose future areas of research regarding open data laws and policies within Washington State.

Limitations

There were two main limitations encountered during the course of this research. The first limitation being the very limited availability of empirical research and/or data on the effects of open data laws at the US State level (or even City level). This research relied heavily on a content analysis of a small number of annual reports that some cities and states had created within the previous twelve to fifteen months of this research being done. The structure of these reports were quite different from each other and the quality of the data varied accordingly. The report produced by the State of Maryland provided some tabular data, the only entity studied to do so. Some other anecdotal data was gathered through blog posts and other media, but this limitation highlighted the need for further research into these impacts of open data and to create a proper taxonomy into that research to help standardize future findings in this area.

The second limitation is related to the first, in that there are significant threats to external validity caused by the very small samples used to provide data, in particular the existing US State laws and annual reports. It is hoped that future studies into the consequences of open data laws will be able to avail of increased secondary data sources as more and more US States implement open data laws and report out on their impacts.

Future research

As stated above, additional research questions arose during the course of this research that, while outside the scope of this particular paper, would make for significant areas of research in their own right and could add significant value to the existing knowledge base on open data laws in general and their consequences and benefits for Washington State in particular.

These additional areas of research are listed in no particular order of importance.

1. **Gather primary data on open data law impacts**

   Due to the lack of empirical secondary data existing today, it is recommended that future research include primary data collection from key policy actors in the open data field in Washington State, to supplement our understanding of the secondary data and help validate key assumptions being made as a result of previous studies.

2. **Data integrity**

   This is an important consideration for open data implementations and further research is needed into the issues surrounding the integrity of the data being exposed. By this we mean the ongoing maintenance of these datasets and assuring the accuracy and consistency of these data over their entire life-cycle; which contributes to a large portion of the costs associated with open data implementations. This is a very complex area and would benefit from further analysis, in particular when related to an open data law proposal such as HB 2202.

3. **Privacy laws and their intersection with open data**

   It could be argued that privacy concerns rank at the top of issues that need to be addressed to ensure the continued growth of open data law implementations. It is another highly complex area within which open data activists and privacy experts are beginning to grapple with seriously, and provides a rich area of serious policy implications and related research questions for researchers to tackle.

4. **Private sector channels of influence through open data**

   Skepticism exists about the extent to which the private sector can or should substitute itself for government functions. Will open data will spawn new channels of influence by which private sector firms use their influence to monopolize the production and dissemination of information? Open data facilitates transparency with respect to government activities, but will it also facilitate transparency with respect to the relationships fostered between IT firms and the open data providers? As discussed

earlier in this paper, who gets to decide what datasets get released will become an ever more important question.

5. **Strengthening of open data laws**

   Future research into how cities and states in the United States are seeking to strengthen existing open data laws would be useful, in particular when we think about their rationales for doing so and the actual versus expected outcomes of those amendments. Do those changes help or harm the existing implementations of open data laws? What are the motivations for such amendments being introduced, and are they similar across the board?

6. **Policy Diffusion regarding open data laws**

   This paper has uncovered evidence of the theoretical frameworks regarding policy innovation and their associated policy diffusion across the states in action. While outside the scope of this paper, a closer study of this diffusion of policies could yield some fascinating and useful insights into the processes by which open data laws are propagating across the United States, and provide both researchers and policy actors with new knowledge with which to further advance the establishment of open data laws.

Acknowledgements

Sincere thanks to everyone who in some small or large way contributed to the creation of this paper.

In particular, special thanks to my Capstone Advisor Professor Dan Jacoby for his patience, insightful observations and feedback which greatly helped me to hone this study down to a manageable level. Thanks also to my Second Reader Ginger Armbruster (Privacy Program Manager, City of Seattle Department of Information Technology) who kindly offered her time to provide expert advice from the open data field when reviewing this paper.

I would also like to pay special thanks to some other key contributors, in particular the Technology & Civic Engagement team at Microsoft whose enthusiasm and interest in my work as well as providing me with data and ideas has been most welcome. Also sincere thanks to Emily Shaw (State & Local Policy Director, Sunlight Foundation (Washington D.C.)) for her willingness to meet and provide me with some great food for thought. Special thanks also to Paul Mitchell from the Technology Policy team at Microsoft, who gave very freely of his time, advice and support even before I began this program; and to Professor Gwen Ottinger of Drexel University (formally of the MA in Policy Studies faculty at UW Bothell), who somewhat unwittingly helped me discover this path into open data.

I would also like to thank the amazing MAPS cohort of 2013, one of the most incredible groups of people I've ever encountered and had the privilege to work with and learn from. I look forward to many more years of close contacts with them. And also to the MAPS facility who helped shape my understanding of policy world.

And finally, I thank my wonderful daughter Chandler, who has been very patient while I devoted so much time to my studies, and for reminding me every day about why creating good public policy is so important when it comes to the next generation.

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Appendices

Figure 1: Chart of open data portals (such as Data.Gov) within Washington State

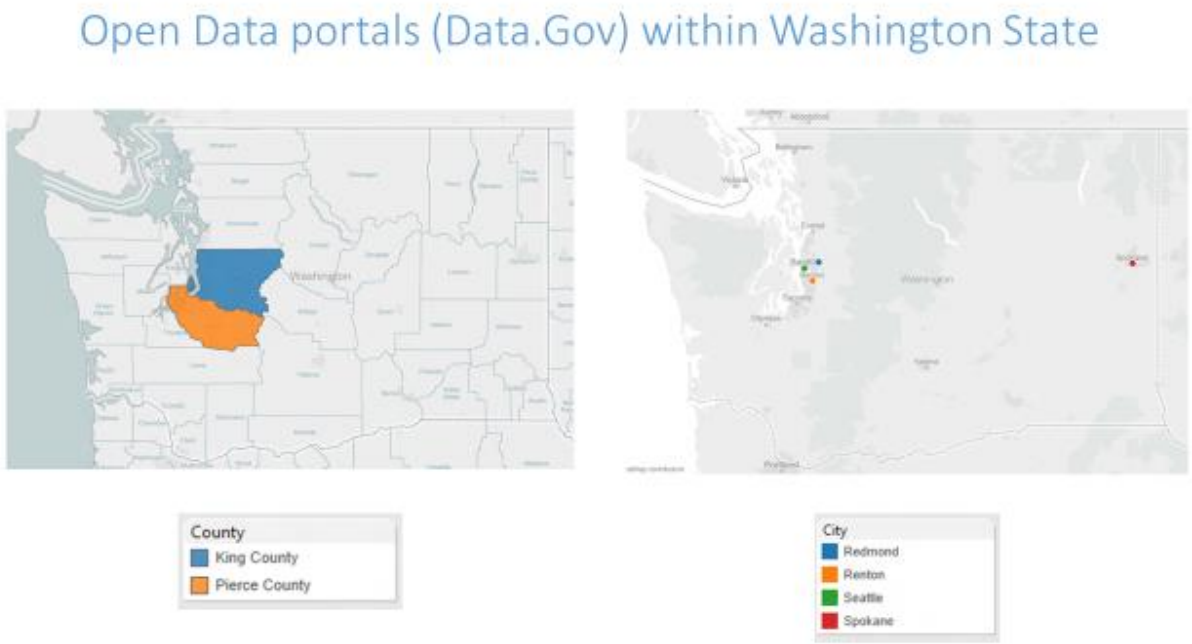

Table 1: Secondary data sources

Agency	**Link**
The Sunlight Foundation (State and Local Open Data Policy datasets)	http://sunlightfoundation.com/policy/local
US Federal open data portal (Local Government)	http://www.data.gov/local
Existing US State open data law bills, and available annual reports on their impact and progress	See Table 2:

Washington State Office of the CIO website (OCIO)	https://ocio.wa.gov
Washington State HB 2202 public hearing records (including Policy Analysis, Bill Amendments, Written and Verbal Testimonies by actors for and against the bill)	http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2202&year=2013

Table 2: Existing US State Open Data Law Bills

State	Year Enacted	Links
Connecticut	2014	https://data.ct.gov/
Hawaii	2013	https://data.hawaii.gov/
Illinois	2012	https://data.illinois.gov/
Maryland	2014	https://data.maryland.gov/
New Hampshire	2013	
New York	2013	https://data.ny.gov/
Rhode Island	2013	http://www.ri.gov/data/
Texas	2011	https://data.texas.gov/
Utah	2013	https://opendata.utah.gov/
Oklahoma	2011	https://data.ok.gov/

***Source**: http://sunlightfoundation.com/policy/local/*

Table 3: US States with Open Data portals (Data.Gov)

State	Link
Alabama	http://open.alabama.gov
Arizona	http://openbooks.az.gov/app/transparency/index.html
California	http://data.ca.gov
Colorado	http://www.colorado.gov/data
Connecticut	http://transparency.ct.gov/html/main.asp
Delaware	http://www.delaware.gov/data
District of Columbia	http://data.dc.gov
Florida	http://www.floridahasarighttoknow.com

Georgia	http://www.open.georgia.gov
Hawaii	http://data.hawaii.gov
Illinois	http://data.illinois.gov
Indiana	http://inmap.indiana.edu/viewer.htm
Iowa	http://data.iowa.gov
Kansas	http://www.kansas.gov/KanView
Kentucky	http://opendoor.ky.gov/search/Pages/spendingsearch.aspx
Louisiana	http://wwwprd.doa.louisiana.gov/LaTrac/portal.cfm
Maine	http://www.maine.gov/data
Maryland	https://data.maryland.gov
Massachusetts	https://wiki.state.ma.us/confluence/display/data/Open+Data+Initiative+Home
Michigan	http://www.michigan.gov/data
Minnesota	http://mn.gov/portal
Missouri	http://data.mo.gov
Nebraska	http://www.nebraska.gov/data
New Hampshire	http://nhopengov.org
New Mexico	http://www.sunshineportalnm.com
New York	https://data.ny.gov
North Carolina	http://www.ncopenbook.gov
North Dakota GIS Hub	http://www.nd.gov/gis
Ohio	http://transparency.ohio.gov
Oklahoma	http://www.ok.gov/about/data.html
Oregon	http://data.oregon.gov
Rhode Island	http://www.ri.gov/data
South Dakota	http://open.sd.gov
Tennessee	http://www.tn.gov/opengov
Texas	http://www.texas.gov/en/Connect/Pages/open-data.aspx
Utah	http://www.utah.gov/data
Vermont	http://www.data.gov/open-gov
Virginia	http://datapoint.apa.virginia.gov
Washington	http://data.wa.gov

***Source**: http://www.data.gov/open-gov/*

Table 4: Existing US Open Data Law Annual Reports

Place	Type	Year	Link

Chicago	City	2013	http://report.cityofchicago.org/open-data-2013
New York	City	2013	http://www.nyc.gov/html/analytics/downloads/pdf/annual_report_2013.pdf
White House	Federal	2014	https://www.whitehouse.gov/sites/default/files/microsites/ostp/us_open_data_action_plan.pdf
Maryland	State	2014	http://doit.maryland.gov/opendatacouncil/OtherDocs/CouncilOnOpenDatalReport.pdf
New York	State	2013	http://reinventalbany.org/wp-content/uploads/2013/11/nyc.opendata.challenges.final.pdf
Hawaii	State	2014	http://oip.hawaii.gov/wp-content/uploads/2015/03/ANNUAL-REPORT-2014-revised-April-2015.pdf

Table 5: HB 2202 legislative schedule

2014 REGULAR SESSION	
Jan 10	Prefiled for introduction.
Jan 13	First reading, referred to Government Operations & Elections (Not Officially read and referred until adoption of Introduction report).
Jan 24	Public hearing in the House Committee on Government Operations & Elections at 8:00 AM.
Jan 31	Executive action taken in the House Committee on Government Operations & Elections at 8:00 AM.
	GOE - Executive action taken by committee.
	GOE - Majority; 1st substitute bill be substituted, do pass.
	Minority; do not pass.
Feb 4	Referred to Appropriations.
Feb 10	Public hearing and executive action taken in the House Committee on Appropriations at 10:00 AM.
	APP - Executive action taken by committee.
	APP - Majority; 2nd substitute bill be substituted, do pass.
	Minority; do not pass.
Feb 11	Passed to Rules Committee for second reading.

***Source**: http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2202&year=2013*

Table 6: WA State City & County Open Data portals

State	County / City	Link
Washington	King County	https://data.kingcounty.gov/
Washington	Pierce County	http://gisdata.piercecowa.opendata.arcgis.com/
Washington	Seattle	https://data.seattle.gov/
Washington	Redmond	https://data.redmond.gov/
Washington	Renton	https://data.rentonwa.gov
Washington	Spokane	https://my.spokanecity.org/opendata/gis/

Table 7: US Cities with Open Data Laws

City	State	Year Enacted	Legal Means	Enacting Body	Open Data Portal
Washington	District of Columbia	2014	Executive Order	CTO	Yes
Portland	Oregon	2009	Legislation	Bureau of Technology Services	Yes
Memphis	Tennessee	2009	Executive Order	n/a	No
San Francisco	California	2009	Legislation	Chief Data Officer	Yes
Austin	Texas	2013	Executive Order	City Manager and Open Government Governing Board	Yes
Raleigh	North Carolina	2012	Legislation	n/a	Yes
New York City	New York	2012	Legislation	Department of Information Technology and Telecommunications	Yes
Providence	Rhode Island	2012	Legislation	n/a	Yes
Philadelphia	Pennsylvania	2012	Executive Order	The Data Governance Advisory Board and Open Data Working Group	Yes
Madison	Wisconsin	2012	Legislation	Information Technology Department	Yes
Chicago	Illinois	2012	Executive Order	Chief Information Officer and Chief Data Officer	Yes

Tulsa	Oklahoma	2013	Legislation	n/a	No
South Bend	Indiana	2013	Executive Order	Open Data Management Team	Yes
Louisville	Kentucky	2013	Executive Order	Open Data Management Team	Yes
Oakland	California	2013	Legislation	City Administrator	Yes
West Sacramento	California	2013	Policy	Open Data Advisory Board	Yes
Honolulu	Hawaii	2013	Legislation	Director of Information Technology	Yes
Los Angeles	California	2013	Executive Order	n/a	Yes
Sacramento	California	2013	Policy	Chief Information Officer and Open Data Advisory Group	Yes
Las Vegas	Nevada	2014	Policy	n/a	Yes
Pittsburgh	Pennsylvania	2014	Legislation	Open Data Management Team	No
Williamsville	New York	2014	Legislation	Open Government Committee	No
Hartford	Connecticut	2014	Executive Order	Open Data Management Team	No
Boston	Massachusetts	2014	Executive Order	Chief Information Officer	Yes
Nashville	Tennessee	2014	Executive Order	Data Management Team	Yes
Kansas City	Missouri	2014	Executive Order	City Manager	Yes
Jackson	Mississippi	2014	Legislation	City Manager	No
Cincinnati	Ohio	2014	Policy	Department of Enterprise Technology Solutions	Yes
Chattanooga	Tennessee	2014	Executive Order	Chief Information Officer	Yes
Salt Lake City	Utah	2014	Legislation	Oversight Committee	Yes
Minneapolis	Minnesota	2014	Legislation	Chief Information Officer	No
Bloomington	Illinois	2014	Legislation	n/a	No
Houston	Texas	2014	Policy	Enterprise Data Officer and Open Data Advisory Board	Yes
Amherst	Massachusetts	2014	Legislation	n/a	No
San Diego	California	2014	Legislation	Chief Data Officer	Yes

***Source**: http://sunlightfoundation.com/policy/local/*

Table 8: US Cities & Counties with Open Data portals

Place	Type	Link
Albuquerque	City	http://www.cabq.gov/abq-data/
Ann Arbor	City	http://www.a2gov.org/data/
Arvada	City	http://arvada.org/opendata/
Asheville	City	http://opendatacatalog.ashevillenc.gov/
Atlanta	City	http://gis.atlantaga.gov/
Austin	City	http://data.austintexas.gov/
Baltimore	City	http://data.baltimorecity.gov/
Belleville	City	https://data.illinois.gov/belleville
Boston	City	https://data.cityofboston.gov/
Burlington	City	https://data.burlingtonvt.gov/
Champaign	City	https://data.illinois.gov/champaign
Chicago	City	http://data.cityofchicago.org/
Cook County	County	http://data.cookcountyil.gov/
Denver	City	http://data.denvergov.org/
Gilpin County	County	http://data.opencolorado.org/group/gilpin-county
Honolulu	City	https://data.honolulu.gov/
Houston	City	http://data.codeforhouston.com/
Kansas City	City	https://data.kcmo.org/
King County	County	http://www.datakc.org/
Las Vegas		https://opendata.lasvegasnevada.gov/
Lexington	City	http://www.lexingtonky.gov/index.aspx?page=416
Los Angeles	City	https://controllerdata.lacity.org/browse
Louisville	City	http://portal.louisvilleky.gov/service/data
Madison	City	https://data.cityofmadison.com/
Montgomery County	County	https://data.montgomerycountymd.gov/
New Orleans	City	http://data.nola.gov/
New York City	City	http://www.nyc.gov/data/
Palo Alto	City	http://data.cityofpaloalto.org/
Philadelphia	City	http://www.opendataphilly.org/
Portland	City	http://civicapps.org/datasets/
Providence	City	https://data.providenceri.gov/
Raleigh	City	http://www.raleighnc.gov/open/
Rockford	City	https://data.illinois.gov/rockford
San Francisco	City	http://www.datasf.org/
San Mateo County	County	https://data.smcgov.org/
Santa Cruz	City	http://data.cityofsantacruz.com/

Scottsdale	City	http://data.scottsdaleaz.gov/
Seattle	City	http://data.seattle.gov/
Somerville	City	http://data.somervillema.gov/
South Bend	City	https://data.southbendin.gov/
Wake County	County	http://www.wakegov.com/data/Pages/default.aspx
Weatherford	City	http://tx-weatherford2.civicplus.com/index.aspx?NID=1448
Wellington	City	https://data.wellingtonfl.gov/

***Source**: http://sunlightfoundation.com/policy/local/*

Table 9: HB 2202 Fiscal Note

Agency	FY 2013 - 15	FY 2015 - 17		
AGR	83,324	13,230		
CAPAA	0	0		
COS	0	0		
DAHP	64,845	129,690		
DES	450,212	880,489		
DFI	0	0		
DNR	1,747,000	3,494,000		
DOC	282,802	474,155		
DOH	0	0		
DOL	1,020,162	0		
DOR	310,700	449,400		
DOT	308,422	0		
DRS	0	0		
DSHS	0	0		
DVA	0	0		
ESD	50,000	100,000		
ECY	398,128	796,256		
GMB	0	0		
HCA	603,500	513,000		
HUM	11,600	2,400		
LCB	0	0		
LOT	191,000	382,000		
OAH	0	0		
OCIO	275,146	617,650		
PARKS	320,000	640,000		

RCO	9,462	4,662		
SBCTC	0	0		
UTC	0	0		
UW	1,500,000	3,000,000		
WSP	154,000	288,000		
WSU	250,000	500,000		
WTB	215,530	304,311		
WTSC	0	0		
Totals	**8,245,833**	**12,589,243**		**20,835,076**

***Source**: http://apps.leg.wa.gov/billinfo/summary.aspx?bill=2202&year=2013*