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What Is Open Data?

As per the Office of the Chief Information Officer, open data is "public data that are freely available, machine readable, and structured in a way that enables the data to be fully discoverable and usable by end users." Structured open data formats can be as simple as a table provided in a tab-delimited text file to as complex as an Application Programming Interface (API) that provides content via a module for use by other applications.

The purpose of WSDOT open data is to provide the public the greater transparency and accessibility to the data without the necessity and/or burden of public disclosure.

Additionally, access to official agency data will provide efficient access to the public for analytic purposes. Only data that is considered official agency data will be considered for open data. Draft project data used for temporary public engagement is not considered eligible for open data.

Open Data is an important component of Open Government. The goal of Open Government is to provide transparency in governmental operations, to ensure accountability, and to prevent corruption. Open Government is based upon the Public Records Act, Chapter 42.56 RCW, and the Open Public Meetings Act, Chapter 42.30 RCW. Open Government includes the provision of open data along with the provision of other forms of information like documents, emails, recordings, images, etc.

Some examples of the department's open data offerings include:

WA State Crash Data Portal
Mapping layers (Geo.wa.gov)

What Are The Benefits To WSDOT In Providing Open Data?

Benefits the community and promotes transparency of government operations

Open data is a valuable resource that is used by citizens and businesses of the state to fuel entrepreneurship, innovation, and scientific discovery. It increases government transparency, inter-governmental data sharing, effectiveness, and accountability and supports community engagement. In short, open data supports jobs, justice, analysis, and civic action. WSDOT’s open data promotes engagement with our stakeholders, helps travelers make informed travel choices, provides business partners with guidance and information, and helps the public monitor our work.

Users of open data include hobbyist and professional associations of developers, builders of apps and prototypes, hackathons, meetups, data scientists, external transportation partners, schools, and the public.

Facilitates Fulfillment of Public Disclosure Requests

Making open data available to the public also streamlines the fulfillment of Public Disclosure Requests. For example, providing an internet address and link on the agency’s website to the specific records requested is considered a complete response to a Public Disclosure Request.
Increases the chance that decision packages receive funding

The Office of the Chief Information Officer (OCIO) reviews IT Decision Packages as they are submitted for inclusion in the Governor’s Budget. Decision Packages are drafted by WSDOT business units, including the Information Technology Division, to ask the legislature for resources for new application development, for the adoption of hosted vendor applications, and for major application enhancements. Including considerations for the provision of open data in IT Decision Packages helps to elevate the packages’ prioritization level – increasing the likelihood that the budget request will be funded. The enhanced data transparency associated with open data does not only benefit IT decision packages. For instance, publicly providing travel demand and usage data can furnish justifications for transportation infrastructure improvements, increasing the likelihood of both public and legislative support for their funding.

Streamlines inter-governmental data sharing

The provision of open data via portals like geo.wa.gov and data.wa.gov helps federal, state, regional, county, municipal, and tribal agencies find needed information with minimal effort. The overall cost of data collection is reduced for all involved since data does not have to be redundantly collected. State governments providing open data also receive an additional benefit in that local agencies may adopt the data used by the state as a basis to collect and provide their own information. This simplifies data integration between government entities. Open data also provides contact information that can lead to collaborative partnerships to improve data resources.

The OCIO oversees the IT activities of all Washington State agencies. Office of the Chief Information Officer (OCIO) Policy 187 stipulates, “Washington State agencies must develop, implement, and maintain an Open Data Plan that outlines how the agency will routinely work to make open data publicly available.” WSDOT’s Open Data Committee oversees these efforts for the agency.

OCIO Policy 187 was created in response to past, broad-sweeping open data legislation efforts. The OCIO Policy strives to meet the spirit of proposed legislation while allowing state agencies more control over the information published.

Ensures that WSDOT adheres to OCIO directives and responds to past open data legislation attempts

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What Are The Risks In Providing Open Data?

Type of data content

Not all data is appropriate to be shared as open data. The following types of data content are not suitable for open data:

- Data identified by the state agency holding it as category 3 or category 4 data under the data categorization provisions of the state policy “Securing Information Technology Assets” (OCIO Standard 141.10, Section 4).
  - Category 3 Data is termed “Confidential Information.” This is information that is specifically protected from either release or disclosure by law, which includes but is not limited to:
    - Personal information as defined in RCW 42.56.590 and RCW 19.255.010.
    - Information about public employees as defined in RCW 42.56.250.
    - Lists of individuals for commercial purposes as defined in RCW 42.56.070(9).
  - Category 4 Data is termed Confidential Information Requiring Special Handling. This is information that is specially protected from disclosure by law and for which especially strict handling requirements are dictated and/or serious consequences could arise from unauthorized disclosure.

- Any data set or portion of a data set to which the state agency may deny access pursuant to the public records act, chapter 42.56 RCW, or any other provision of a federal or state law, rule, interpretive policy statement, regulation or local law.

- Data that reflects the internal deliberative process of a state agency or agencies, including but not limited to:
  - Negotiating positions.
  - Future procurements.
  - Pending or reasonably anticipated legal or administrative proceedings.

- Data subject to copyright, patent, trademark, confidentiality agreements, or trade secret protection.

- Proprietary applications, computer code, software, operating systems, or similar materials.

- Data related to internal state agency administration, including employment records, internal employee-related directories or lists, and facilities data.

- Any unstructured data that cannot feasibly be converted to an open format as required by uniform standards adopted by the OCIO without undue financial, operative, or administrative burden on the state agency.

- Data requiring heavy redaction which would impose undue financial, operative, or administrative burden on the agency.

Data content within a single open data set is not the only consideration. The agency has to also assess data content over the entire collection of open data offerings. This must be done to avoid the possibility of combining open data sets to reveal confidential information.
Inconsistent data content between what appear to be similar open data offerings

The context of data matters. The answers to the following questions reveal more details to discern the differences between apparently similar open data offerings:

Does the data reflect content taken directly out of a source system with no additional processing?

Does the data reflect a particular time period?

Was the data provided by the authoritative source for the subject matter in question? If the data has been processed, what modifications have been made to the data?

Ideally, open data should be provided by the subject area's authoritative source and will include descriptive documentation of the content – metadata.

Stale data content

If the data lacks a maintenance plan, there is a risk that the data will become less relevant and accurate over time.

Data more appropriate to be hosted elsewhere

In some cases, WSDOT may not have a complete or authoritative source of data to publish, although the agency may still have data worth contributing and making open. In such a case, it may be more appropriate to contribute to existing crowd-sourced or other statewide open data sources rather than publish our own limited data independently.

Additionally, it may be appropriate to refer requesters to pre-existing open data sources outside of WSDOT for certain data requests.

Lack of a “Limitation of Liability” clause –

An open data product could be used for any number of purposes and it is possible – even with good descriptive information – for the data to be misused. Data misuse could result in erroneous analyses and possibly even financial loss for the open data consumer. Including a Limitation of Liability clause in the data’s metadata helps protect the agency from litigation.

In certain cases, stronger disclaimer wording may be required if the data is partial, incomplete, or transient.

The WSDOT Open Data Distribution Site's disclaimer states:

The data on this website is provided for informational purposes as a service to the public. WSDOT endeavors to provide reliable information on this website; however, information and/or materials contained herein are provided “as is,” without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, non-infringement, or any other implied warranty under the uniform computer information transactions act as enacted by any state.
What Data Is Most Suitable To Be Made Available As Open Data?

WSDOT’s open data assets are approved agency data resources that adhere to WSDOT policy and state and federal law. Several WSDOT data resources could become open data offerings. It is beneficial to be selective to minimize workload for those who provide open data and to minimize information overload for those who consume open data.

Ideal open data candidates include:

- Data that is frequently requested by external entities. This includes data that is already provided for public use via the website and data that can be publicly downloaded via agency Tableau, ArcGIS Online, and Washington Geospatial Open Data Portal sites (geo.wa.gov).

- Data that supports the agency’s delivery of strategic objectives. For instance, this could include data that supports Corridor Sketch discussions or other community engagement activities.

- Data that could be readily provided as an open data offering. This might include data currently published in PDF format that could easily be made available in a machine-readable format, or other data that is in development for publication.

- Data that is frequently requested via Public Records requests.
I Want to Publish Open Data. How Do I Get Started?

Publication Process

What do I need to do to publish open data?

- Contact the WSDOT Open Data Coordinator
- Discuss the intent of publishing the data and the content
- Determine the most technically viable manner to provide the data

Do not publish

- A record of the request will be kept for future reference
- Determine a mitigation strategy if there are risks in publishing the data

Publish

- Help develop a support plan for the data and define your support role
- Review user feedback; Periodically review data’s suitability and relevance

Do not publish

- Review and validate the generated data; Create metadata

Data is published

If needed, help plan the data’s retirement
If you wish to make data publicly available as open data, your first step is to contact the WSDOT Open Data Coordinator. The WSDOT Open Data Coordinator will kick off and lead you through the process. The WSDOT Open Data Coordinator will also engage expertise from the Open Data Committee as needed. (Please note, many of the steps listed below will be accomplished via email and remote meetings to make the most efficient use of everyone’s time.)

Be prepared to discuss:

a. The business intent of publishing the data.

b. The content to be published.

c. The stewardship of the data. It is ideal for the data’s steward to publish the data.

The WSDOT Open Data Coordinator will then call upon the WSDOT Open Data Committee to determine the risk of publishing the data. You may be asked some additional questions on the content at this point, and you will be involved in decisions as to how to proceed if it is determined that there is a risk that needs to be mitigated.

Then the Open Data Committee will evaluate the technical viability of providing the data. Here again, you may be asked for additional information, and you will be involved in the decision making process.

The Open Data Committee will then work with you to determine a support plan for the data. The goal of a support plan is to ensure that the data remains correct and relevant. The support plan describes how often the data is refreshed, when the data should be archived, what support is needed, and who will provide that support. You will help provide input to the plan and you will likely have a role in the support plan. In order to enable better support and limit liability, it is also possible to publish “semi-open” data using an automated or manual gate requiring consumers to provide contact information or receive approval. However, such steps are discouraged unless absolutely necessary, as even low barriers to open data consumption may dramatically reduce the content’s effectiveness.

Now, we get to the actual generation of the open data set and its metadata. In this step, you will be asked to review and validate the generated data set and you will be asked to provide information on the data set’s content (metadata). The Open Data Coordinator will assist you with formatting and creating metadata if you are unfamiliar with the process. Remember - Metadata is your friend. The better the job you do of describing the data set and its context, the fewer questions you will receive and the less likely it will be that someone will misuse or misinterpret the data. If the dataset is transient, incomplete, or part of a larger ensemble, then appropriate clarification in the metadata is critical to ensure the best chance of proper use of the content.
• Once you give your final approval of the generated data set and associated metadata, the data will be made publicly available. The data may be made available via a data download site and/or via an agency Tableau or Washington Geospatial Open Data Portal site (geo.wa.gov). The statewide Open Data Portal (data.wa.gov) is the most appropriate central location for tabular data, however, the Washington Geospatial Open Data Portal site is also very suitable and has a well established publication process through Transportation Data and GIS Office. You may wish to advertise your data set’s publication to your business partners and stakeholders.

• Once the data is publicly available, you will receive any feedback from the user community and will be involved in periodic reviews of the data to ensure that the content is still relevant and suitable. If you deem it is time to retire the data, you will help plan the decommissioning of the data and will help inform the user community of the change.

WSDOT’s Open Data Publication Procedures – In Depth

Publishing a file-based open data set involves choosing the data to distribute, assessing the risk in providing that data, building the data set and its documentation, planning for its maintenance, and disseminating the data for use so that others can find it and assess its suitability.

Publication of open data products via an Application Programming Interface (API) follows many of the same steps. APIs, though, tend to require additional development time to create and are often managed as an application enhancement effort or as a formal IT project. The following procedures specifically address the publication of file-based open data products.

“Publishing” open data means to provide data products and the documentation that describes their content to visitors of public web sites. The public web sites through which WSDOT publishes open data products include wsdot.wa.gov, wsdot.maps.arcgis.com, data.wa.gov, agency Tableau sites, and geo.wa.gov.

The information management and data science communities generally agree that open data is “machine readable,” which means the data is published or is downloadable as delimited-text files or other standard cross-platform file formats (Shapefile, KML, File Geodatabase, Excel, etc.) that can be read directly by a computer program. Open data may be published in conjunction with other formats, like PDF, Excel, or images, to meet the needs of different audiences.

Documentation that guides consumers in the use of open data content will be provided along with the open data itself. The WSDOT Open Data Committee recommends providing such documentation in keeping with the schema described in the WSDOT Data Set Metadata Schema document. More detailed metadata schema formats, like those of the Federal Geographic Data Committee (FGDC), are also acceptable.
Roles and Responsibilities

WSDOT’s Open Data Committee is key to guiding this process and mitigating agency risk. The WSDOT Open Data Committee is comprised of staff representing key responsibilities for information management at WSDOT. WSDOT Open Data Coordinator (chair)

- Communications
- Enterprise Risk Management
- IT Division Application Development
- IT Division Data Resource Management
- IT Division Information Resource Management
- Knowledge Strategy
- Library Services
- Risk Management & Legal Services
- State Computer Aided Engineering (CAE) Support
- Strategic Assessment and Performance Analysis
- Transportation Data, GIS & Modeling

The goal of the Open Data Committee is to provide open data in a consistent, standardized way so that individual citizens, public agencies, and community organizations can independently analyze and interpret transportation data. The Open Data Committee needs to be responsive to requests while minimizing impact to existing work.

The Open Data Coordinator maintains information on open data offerings, facilitates communication for participants in open data activities, sustains consistent procedures for open data publishing, and represents WSDOT at statewide open data groups. The open data coordinator is responsible for the following:

- An inventory and enumeration of WSDOT data that is distributed to parties outside the wsdot.wa.gov domain. These include open data, data-download sites, application program interfaces (APIs), and applications for conducting on-line business-to-business activities. Public web pages, social media communications, and printed materials are not in scope.

- Communication and coordination for the staff who are active in producing and managing open-data offerings. This will include meetings, documentation, and reports necessary for the participants to operate as an effective team. The Open Data Coordinator organizes and maintains a team of staff in key roles to enable open data publication. This group will comprise the WSDOT Open Data Committee.

- Maintaining a set of procedures that enable open data publication. These procedures describe how a candidate open data set can be evaluated for risk and feasibility and who will do what to implement the publication and periodically refresh it. These procedures will be reviewed and revised as needed by the Open Data Coordinator, with the advice and consent of the WSDOT Open Data Committee. The procedures will comprise a framework of recommended practices that is versatile enough for adaptation to circumstances.
• Representing WSDOT on the topic of open data to other agencies and organizations. This involves supporting participation in the open data program of the Office of the Chief Information Officer, and participation in other open data forums as appropriate. The Open Data Coordinator will maintain the WSDOT Open Data Plan and produce the annual report on WSDOT’s open data to the OCIO.

• Performance measurements.

Aside from the WSDOT Open Data Coordinator and members of the WSDOT Open Data Committee, other key roles in the WSDOT Open Data Publication Process include the “Data Steward” and the “Data Requestor”.

**Data Stewards** are business professionals with responsibility for the creation, maintenance, or interpretation of data for which they have expertise or authority. They are the caretakers for the data and it is their responsibility to help make the data as useful and valuable as possible for others to use. It is important for stewardship to extend beyond an individual – a business area must holistically be prepared to steward or sunset open data, so that the departure of a single person does not place the support of public content in jeopardy.

A **Data Requestor** may be a member of the public or an external entity like another state agency who is seeking data for his or her own personal knowledge, for data analysis, and/or for use by an application.

**Process Steps for Publishing Open Data at WSDOT**

A high-level overview of the process flow is provided below. The process will be kept simple and flexible, will be adapted as needed, and will employ email and remote meeting capabilities whenever it is feasible to do so.

Requests to publish an open data offering are directed to the WSDOT Open Data Coordinator. The WSDOT Open Data Coordinator will kick off the process and will engage expertise from the Open Data Committee as needed.
The Process Steps for Publishing Open Data at WSDOT (included on the next page) provides additional detail as to each of the steps, who all is involved at what point in the process, and what resources are needed and when.
### Process Steps for Publishing Open Data at WSDOT

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Description of Process</th>
<th>Who Is Involved</th>
<th>Resources Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify a potential data offering</td>
<td>Determine the business purpose to be met, and how publishing data will serve that purpose. Identify the data content needed to meet the purpose and the duration the data will be needed.</td>
<td>• Data Steward&lt;br&gt;• Data Requestor*&lt;br&gt;• Open Data Coordinator</td>
<td>• A record of the proposal, and a discussion of the business purpose&lt;br&gt;Technical data documentation to precisely identify and describe the content</td>
</tr>
<tr>
<td>Assess the risk of publishing</td>
<td>Review the data content in light of policy and law, and identify any risks of publishing the data. Compare the data content with the content of other public offerings to ensure that data cannot be combined to expose sensitive information. Check for redundancy. Decide how to proceed.</td>
<td>• Data Steward&lt;br&gt;• Data Requestor*&lt;br&gt;• Open Data Coordinator&lt;br&gt;• Risk Management &amp; Legal Services&lt;br&gt;• IT&lt;br&gt;• Communications&lt;br&gt;• Strategic Assessment and Performance Analysis</td>
<td>• Expertise on data security laws&lt;br&gt;• Expertise on public records&lt;br&gt;• Subject matter advice&lt;br&gt;• Data classification policy&lt;br&gt;• A record of the final recommendation</td>
</tr>
<tr>
<td>Assess the technical feasibility of providing the data</td>
<td>Determine how the proposed data publication would be executed and analyze the technical feasibility of doing so.</td>
<td>• Data Steward&lt;br&gt;• IT&lt;br&gt;• Communications</td>
<td>• Feasibility criteria (size, complexity, impact)&lt;br&gt;Technical data documentation&lt;br&gt;Expertise on data management&lt;br&gt;A record of the final recommendation</td>
</tr>
<tr>
<td>Establish a technical support plan for the data</td>
<td>Determine what support is needed to keep the data correct and relevant, and then design a support plan.</td>
<td>• Data Steward&lt;br&gt;• IT&lt;br&gt;• Communications</td>
<td>• A record of the proposal, and a discussion of the business purpose&lt;br&gt;Technical data documentation&lt;br&gt;Expertise on data management&lt;br&gt;Agreements to roles &amp; responsibilities&lt;br&gt;Documented support plan for each data set&lt;br&gt;Definition of the data content’s refresh schedule and archive schedule</td>
</tr>
<tr>
<td>Generate the data set</td>
<td>Produce the data set from the source systems.</td>
<td>• Data Steward&lt;br&gt;• IT</td>
<td>• Data set format specifications&lt;br&gt;Expertise on data management&lt;br&gt;Documented technical procedures&lt;br&gt;IT infrastructure resources</td>
</tr>
<tr>
<td>Generate the data’s metadata report</td>
<td>Produce a metadata file (documentation &amp; data dictionary)</td>
<td>• Data Steward&lt;br&gt;• IT</td>
<td>• Metadata standards&lt;br&gt;Expertise on metadata management&lt;br&gt;Documented technical procedures&lt;br&gt;IT infrastructure resources</td>
</tr>
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</thead>
</table>
| Publish the data offering & its metadata | Place the data set online Place the metadata online | • Data Steward  
• Data Requestor*  
• IT  
• Communications | • Tech support for the publishing site  
• Expertise on website management  
• Record of authorization to publish  
• Documented technical procedures  
• Communication plan |
| Review & refresh data publications | Periodically assess the relevance and accuracy of the data set, and decide to leave as is, refresh, or remove. | • Data Steward  
• Data Requestor*  
• Open Data Coordinator  
• Communications | • A record of the proposal, including a discussion of the business purpose  
• Documented support plan for each data set  
• Current technical data documentation  
• Prior technical feasibility decision  
• Prior risk assessment decision  
• Documented technical procedures  
• Communication plan  
• A decision-making process  
• A record of the final recommendation |
| Measure performance & report on status | Quantify and appraise the benefits of the data publication. | • Data Steward  
• Data Requestor*  
• Open Data Coordinator  
• Communications | • Metrics for measuring usage  
• Feedback mechanism for users  
• Request mechanism for users |

* A Data Requestor may not always be involved in the process. The process can also commence due to a Data Steward’s desire to publish. The WSDOT Open Data Committee may also solicit feedback to identify strategic open data needs.

### Summary

Under its authority to “establish standards and policies to govern information technology in the state of Washington” (RCW 43.105.054), the Office of the Chief Information Officer (OCIO) adopted a policy requiring all agencies to develop and publish an open data plan and inventory of offerings. The intent of open data is to enable citizens, colleagues, businesses, and communities to understand and amplify the civic purposes of public agencies. WSDOT’s Open Data Publication Procedures support agency efforts to openly share information with citizens, business partners, and community organizations.

Potential topics for open data will be chosen in consultation with business areas to include consideration of OCIO requirements, along with agency Strategic Plan goals and associated initiatives and what is most often requested and needed by business partners and citizens. Open data will be provided in a consistent, standardized way so that individual citizens, public agencies, and community organizations can independently analyze and interpret transportation data. Adherence to the Open Data Publication Procedures ensures that WSDOT’s open data assets are approved agency data resources that observe WSDOT policy and state and federal law.

*For more information, please contact the WSDOT Open Data Coordinator.*