

Plan Overview

A Data Management Plan created using DMP Tool

DMP ID: <https://doi.org/10.48321/D18675>

Title: Portland, leading by example: A Technology-enabled Zero Emission Zone

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Funder: United States Department of Transportation (DOT) ([transportation.gov](https://www.transportation.gov))

Grant: SMARTFY22N1P1G48

Template: SMART Grants Stage 1 Data Management Plan (DMP)

Project abstract:

With the launch of a 25-acre Zero Emission Delivery Zone (ZEDZ), the City of Portland will be the first U.S. city to implement a regulated zero emission zone. The City will use public- and private-sector partnerships, innovative curb management strategies, open-source data standards, and sensor technologies to reduce greenhouse gas (GHG) while enabling efficient goods movement in a Justice40 (J40)-designated Disadvantaged Community (DAC). This ZEDZ prototype will advance the City's ambitious adopted policies to decarbonize the movement of goods while acknowledging that an industry shift to cleaner modes takes time and incentives.

This project tests a new regulatory structure at a manageable scale, uses 21st century data to evaluate its efficacy, and supports compliance with requirements by incentivizing zero emissions last-mile delivery. An important dynamic is how the City will lead by example—serving as an anchor tenant within the ZEDZ. This project will reduce GHG emissions and promote efficiency near Portland's public-sector institutions by testing three interrelated interventions:

- Establishing a Zero Emission Delivery Zone: To increase multimodal accessibility and incentivize industry's use of zero emission vehicles (ZEV) (e.g., electric-assist cargo bicycles, electric vehicles) in a 16-block area where conventional loading zones will be restricted for use by ZEV only.
- Using Data, Sensors, and Curb Access to Manage the ZEDZ: To address data gaps about curb usage by freight vehicles; develop open-source standards; evaluate the efficacy of curb management strategies, including issues with non-compliance; and create new strategies that better address freight loading/unloading operational needs.
- Facilitating Micro-Distribution Hub (MicroHub) Operations and Last-Mile Solutions: To support the reduction of heavy delivery vehicles entering a J40 DAC in downtown Portland and leverage deliveries via a ZEV auto-fleet and an urban consolidation center that offers zero emission last-mile operations through an existing electric-assist cargo bike fleet and existing bicycle infrastructure from the existing MicroHub into the new ZEDZ.

A technology-enabled ZEDZ provides the framework for testing strategies to create a safer, cleaner, and more equitable transportation system in the City of Portland, while boosting economic opportunities, and leveraging partnerships between the public and private sector. Prototyping this framework is critical given that cities like Portland have strong policy direction to reduce GHG emissions, but limited authority to regulate them.

Start date: 09-15-2023

End date: 06-15-2025

Last modified: 10-25-2024

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Portland, leading by example: A Technology-enabled Zero Emission Zone

Dataset and Contact Information

Please provide as much of the the following information as possible:

1. Name of the project;
2. Grant number;
3. Name of the person submitting this DMP;
4. ORCID of the person submitting this DMP (need an ORCID? Register here: <https://orcid.org/>);
5. Email and phone number of the person submitting this DMP;
6. Name of the organization for which the person submitting this DMP is working;
7. Email and phone number for the organization;
8. Link to organization or project website, if applicable; and,
9. Date the DMP was written.

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8. <https://www.portland.gov/transportation> and <https://www.portland.gov/transportation/planning/zero-emission-delivery/zero-emission-delivery-zone>
9. December 15, 2023

Please note, responses for Portland's Data Management Plan are grouped in the following categories:

City of Portland- SMART Grant project lead, includes a cross-functional team from the Portland Bureau of Transportation (PBOT) and the Smart City PDX Team at Portland Bureau of Planning and Sustainability (BPS). It also may include consultants contracted to provide project management, public engagement, communications, task-related support, and more to the City of Portland.

Research Partners- This group includes academic research partners Portland State University's (PSU) Transportation Research & Education Center (TREC) and University of Washington's (UW) Urban Freight Lab (UFL).

Technology Partners- This group includes transportation data and analytics company Ride Report (acquired by INRIX in December 2023), loading zone sensor company(ies) still to be determined, and delivery/logistics company B-Line Urban Delivery.

Data Description

Please provide as much information as possible:

1. Provide a description of the data that you will be gathering in the course of your project or data from a third party that you will re-use, if any;
 1. If there will be no data collected or re-used from another source, state that this is case;
2. Address the expected nature, scope, and scale of the data that will be collected, as best as you can at this stage;
3. As best as you can, describe the characteristics of the data, their relationship to other data, and provide sufficient detail so that reviewers will understand any disclosure risks that may apply;
 1. If data might be sensitive, please describe how you will protect privacy and security, if you know that now;
 2. You may need to update your DMP later to add more detail;
4. Discuss the expected value of the data over the long-term.

1. Provide a description of the data that you will be gathering in the course of your project or data from a third party that you will re-use, if any

City of Portland:

Through the course of the SMART Grant project, City of Portland will amass project management data, including contact information of stakeholders, administrative information related to project budget and milestones, monthly self reflection surveys, and general in-person and electronic dialogue between project manager and project partners. These data are not expected to have long-term value and, outside of the City's public records request policies and retention schedules, will not

be shared or preserved.

Data will also include educational, website, and outreach material content, which includes information about the Zero-Emission Delivery Zone (ZEDZ) project that is formalized in the form of digital and printed materials, online communications, and translated materials. This will be consolidated onto the project website (<https://www.portland.gov/transportation/planning/zero-emission-delivery>), which will contain anonymized data visualizations and descriptions. The project website will be hosted by the City of Portland and maintained via the City's accessibility standards.

Research Partners:

Portland State University (PSU) will gather survey and interview data from representatives of businesses in the ZEDZ focusing on themes of types of goods and services coming into and out of the ZEDZ, along with policies, practices and challenges related to these deliveries. Survey data will be collected primarily via an online form and downloaded to .csv for analysis. Data from interviews will consist of notes documents.

PSU will also gather curb usage data will be collected videos at a minimum of 3 sites, including the designated commercial loading zones in the ZEDZ, which will be reviewed and coded for analysis (e.g., arrival and departure times, duration of stay, vehicle occupancy rates, vehicle types, etc.).

The University of Washington (UW) Urban Freight Lab (UFL) will gather survey and interview data from carriers that make deliveries within the ZEDZ and in the greater City of Portland area. Survey data will be collected primarily via an online form. Written notes taken during interviews will be reviewed, aggregated and anonymized.

Technology Partners:

Ride Report will be ingesting all required fields in the Mobility Data Specification (MDS) Provider Application Programming Interface (API) (<https://github.com/openmobilityfoundation/mobility-data-specification/tree/main/provider>) and Curb Data Specification (CDS) Events API (<https://github.com/openmobilityfoundation/curb-data-specification/tree/main/events>) from B-Line as part of its delivery operations.

INRIX will provide CDS Curbs API (<https://github.com/openmobilityfoundation/curb-data-specification/tree/main/curbs>) data for the entire City of Portland. INRIX and Ride Report will visualize these curbs to include all relevant information around curb rules. The APIs will be consumed by B-Line for use as part their ongoing operations and to ensure accuracy of the Events API data provided above.

Ride Report will consume CDS Events API data from sensor companies to be selected later in the project. This will provide a complete picture of use of the curb in the ZEDZ and other select locations beyond the participating partners.

Ride Report will then aggregate the data across trips and time to protect privacy/anonymity in line with its existing protocols (<https://www.ridereport.com/privacy-policy>) while also creating useful metrics available to PBOT staff. This includes summaries of trip starts and ends, routes/street segments taken, time of day/day of week, curb spaces used, etc.

Ride Report will also summarize curb usage, including things like capacity, occupancy, duration, etc.

B-Line will provide CDS Curbs data that will be consumed by Ride Report/INRIX via Curb Data Specification (CDS) API. CDS events, such as delivery park events and area presence events will be produced by Ride Report using CDS API. B-Line's route data will be produced using MDS API.

The details of the data collected by the sensors depends on the company selected. The City anticipates that camera sensor hardware will capture vehicle types and parking event data (e.g., time, duration, precise location, vehicle type, etc.) for specific loading zone and/or block-face geographies. The data is anticipated to be transmitted to Ride Report via the CDS Events API. The specific nature, scope and scale of data collected by the sensors depends on the company selected. The City has not completed that process at this time.

2. Address the expected nature, scope, and scale of the data that will be collected, as best as you can at this stage

City of Portland:

City project management data will include contact information and communications with freight and logistics companies and businesses operating within the Zero-Emission Delivery Zone, and other relevant stakeholders. Educational, website, and outreach material content will include pilot program updates and high-level summaries and findings of aggregated data from partners, such as takeaways from surveys and interviews and trends observed from sensor and route data.

Research Partners:

PSU will collect survey data from tenants and businesses within the ZEDZ. Due to the limited area of the ZEDZ, the survey data will naturally be limited to around 50 to 100 responses, and approximately 10-15 interviews, with a scope narrowly focused on purchasing and delivery activities.

PSU will videotape 5 commercial loading zones within or adjacent to the ZEDZ to better understand loading/unloading and parking observations. The video data will then be reviewed and analyzed. Video collection and review will be focused on 5 locations, for approximately 10-14 days per location, to assess activity.

UFL will collect survey data from local, regional and national freight and logistics companies that operate within the City of Portland and conduct interviews of key freight stakeholders.

Technology Partners:

Ride Report will collect and process Mobility Data Specification (MDS) (<https://github.com/openmobilityfoundation/mobility-data-specification/tree/main/provider>) and Curb Data Specification (CDS) data (<https://github.com/openmobilityfoundation/curb-data-specification/tree/main/events>). The MDS and CDS data fields are well summarized in the embedded links. MDS fields convey detailed trip data from mobility devices, including GPS breadcrumb/route data. CDS fields convey detailed curb inventory and usage information, including location, time, and vehicle type. Ride Report anticipates providing citywide curb inventory and capturing every trip taken by B-Line and

every parking event at locations with sensors.

Camera sensor hardware will capture vehicle types and parking event data (e.g., time, duration, precise location, vehicle type, etc.) for specific loading zone and/or block-face geographies. The data is anticipated to be transmitted to Ride Report via the CDS Events API. The specific nature, scope and scale of data collected by the sensors depends on the company selected and the City has not completed that process.

B-Line data that will be collected includes delivery details of B-Line vehicles. The scope and scale of the data is all trike activity within the defined ZEDZ as well as delivery routes to and from the ZEDZ will be communicated via MDS and CDS.

3. As best as you can, describe the characteristics of the data, their relationship to other data, and provide sufficient detail so that reviewers will understand any disclosure risks that may apply

City of Portland:

Stakeholder contact information and communications through the City of Portland may be related to interview data collected by research partners. Additionally, educational, website, and outreach material content will likely be a high-level aggregate summary of the detailed and disaggregated data collected by partners.

Research Partners:

The survey data collected by both PSU and UFL will likely ask respondents for voluntary organization and contact information to give researchers the option to follow up on interview requests or other concerns that may arise. Typically, the data will be focused on delivery activity, and not connected to other types of data.

Video data collected and analyzed by PSU at 3-5 loading zones within and adjacent to the ZEDZ will be collected via cameras mounted at selected locations to observe the delivery locations and identify occupancy type, vehicle types, dwell times, etc.

Technology Partners:

Ride Report will primarily be working with MDS and CDS data. Raw, disaggregated MDS Provider and some CDS Events data are commercially sensitive and may be sensitive for individual privacy, particularly when combined with other data sets such as land use, Census, and other data describing individual characteristics. Clean, processed, and aggregated data and findings of data collected by Ride Report will be provided to the City of Portland and research partners.

B-Line's delivery details will include vehicle ID, delivery time and location, and vehicle route. Delivery person and delivery contents will not be collected. B-Line will develop a restful API with authentication and authorization to ensure that only trusted partners have access to only the defined CDS and MDS information.

The characteristics of the data collected by the sensors, and their relationship to other data depends on the company selected and the City has not completed that process.

4. If data might be sensitive, please describe how you will protect privacy and security, if you know that now

City of Portland:

According to City of Portland Bureau of Technology Services Administrative Rules, all data repositories must align with City standards and requirements for data governance, ownership, privacy and security and any sensitive data are subject to additional compliance requirements. These requirements will be included in and enforced through the City's contracts.

As a founding member of the Open Mobility Foundation (OMF), the City will also use the OMF's "Privacy Guide for Cities" as it considers additional practices it may put into place to protect privacy

(<https://github.com/openmobilityfoundation/governance/blob/main/documents/OMF-MDS-Privacy-Guide-for-Cities.pdf>).

This offers a starting point for developing appropriate standards, making policy decisions, and implementing new mobility programs with well-protected data privacy and security. Finally, as Portland Bureau of Transportation acquires new and more detailed transportation data, we will work across City Bureaus, including the Bureau of Technology Services and BPS Smart City PDX representatives to develop and implement privacy and security policies. This will include conducting a Privacy Impact Assessment on technologies with the City's subject matter experts on privacy digital justice from the Bureau of Planning and Sustainability. Privacy practices may also be reviewed and approved by PBOT's Data Governance Committee, which the SMART grant Project Manager serves on.

Research Partners:

Academic partners (UFL and PSU) will complete separate Institutional Review Board (IRB) reviews at their respective organizations to review all protocols and procedures related to data collection from human subjects (interviews and surveys).

PSU may capture data that may be sensitive, including respondents' names and contact information through survey data and some people or vehicles in the video data may be identifiable. Survey and video data will be stored on a password protected drive to limit access to who can see or use the data. After an initial review of the survey data to determine if follow-up is required (e.g. for interview requests), PSU will de-identify survey data.

University of Washington does not plan to collect sensitive, personal data. They will anonymize and aggregate feedback collected from carriers around business interests and anything deemed proprietary. Per IRB requirements, they will store all information in a secure drive and limit user access.

Technology Partners:

Ride Report's raw MDS and CDS Events data will not be stored on PBOT servers. Ride Report

([https://www.ridereport.com/privacy-policy#:~:text=Security%20of%20your%20information,-](https://www.ridereport.com/privacy-policy#:~:text=Security%20of%20your%20information,-We%20use%20administrative&text=While%20we%20have%20taken%20reasonable,or%20other%20type%20of%20misuse)

[We%20use%20administrative&text=While%20we%20have%20taken%20reasonable,or%20other%20type%20of%20misuse](https://www.ridereport.com/privacy-policy#:~:text=Security%20of%20your%20information,-We%20use%20administrative&text=While%20we%20have%20taken%20reasonable,or%20other%20type%20of%20misuse))

and INRIX (<https://inrix.com/site-privacy->

policy/#:~:text=We%20will%20share%20your%20personal,law%20enforcement%20or%20national%20security) both have Information Security Policies included in their Privacy Policies and INRIX is Service Organization Control Type 2 (SOC 2) compliant. SOC 2 is a cybersecurity compliance framework established by the American Institute of Public Accountants to ensure the security of client data handled by third-party service providers. SOC 2 specifies how organizations should manage, process, and store client and consumer data in ways that protect it from unauthorized access, security incidents, and other vulnerabilities and signals a commitment to information security. All metrics will be aggregated at the geography and time levels to protect individual user privacy and to protect proprietary data secrets from individual companies. Ride Report and PBOT have a more than 6-year partnership working with this type of data and software that ensures staff have the tools they need while minimizing risk of security breaches.

All of B-Line's data transactions will be authorized via JSON Web Tokens and OAuth 2.0 as per the OMF CDS specification.

The nature and sensitivity of the data collected by the sensors, and how it will be protected depends on the company selected and the City has not completed that process. The City has a robust privacy impact assessment process that will be conducted prior to selected the sensor company that will provide additional transparency into the company's data privacy and management practices.

5. Discuss the expected value of the data over the long-term

City of Portland:

Portland, like many U.S. cities, has a very limited understanding of how freight/logistics companies use the transportation system each day. Insights from data collected by the City and its partners through this project (curb use, delivery activity, stakeholder interviews, etc.) may provide the factual basis for informed decision-making and transportation system policies and plans that can increase the operational efficiency of the transportation system, promote safety, and inform Stage 2 SMART Grant planning. The value of the data lies not in monetary value per se, but in the new insights and significant details it can provide City staff and partners to better understand and improve performance of the transportation system. This data is typically difficult to collect due to cost and proprietary nature of freight and delivery activity and will provide insights that can improve policymaking, transportation system planning and performance, as well as operational efficiency for companies. The data collected in the near term also has longer term value by setting a baseline against which to assess future activities. As electric urban freight delivery is an emerging topic area, data collected for this project will also help provide a foundation for understanding the potential of this approach.

Research Partners:

PSU and UFL recognize that the data collected in the near term has a longer-term value by setting a baseline against which to assess future activities. As electric urban freight delivery is an emerging topic area, data collected for this project will also help provide a foundation for understanding the potential of this approach. Additionally, insights gathered from commercial businesses about their purchasing behavior and desires for more sustainable delivery options could be beneficial to freight/logistics industry stakeholders associated with the project. These insights could provide a factual basis for companies to assess or adapt their business strategy in order to develop a competitive advantage that could be leveraged into financial value.

Technology Partners:

Ride Report's product visualizes use of the public right of way by a variety of different transportation system users (i.e. car-share, e-scooters, bike-share). By adding last mile freight delivery data to the product, the City will better understand how that transportation need fits into the broader context of other street and curb uses. The City will gain insights into how customers want to use last mile freight delivery data and explore use cases related to zero-emission zones and curb usage more broadly. While the specific data collected as part of this project is unlikely to be further commercialized in and of itself, the data ingestions and processing can be replicated in ways that could lead to further commercialization at other scales and in other geographies.

Additionally, actual delivery times and location data collected by B-Line will give it new insights into the cost drivers of its operations. This detailed information will be valuable in improving the company's financial performance and scaling B-Line's operations.

Information collected by sensor company(s) will continue to help the company calibrate and improve its devices. Any additional expected value will depend on the exact data collected and goals of the company. A specific vendor has not yet been identified by the City.

Data Format and Metadata Standards Employed

Please provide as much information as you can:

1. Describe the anticipated file formats of your data and related files;
2. To the maximum extent practicable, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future;
 1. If you are unable to use platform-independent and non-proprietary formats, you should specify the standards and formats that will be used and the rationale for using those standards and formats.
3. Identify the metadata standards you will use to describe the data.

1. At least one metadata file should be a DCAT-US v1.1 (<https://resources.data.gov/resources/dcat-us/>) .JSON file, the federal standard for data search and discovery.

1. Describe the anticipated file formats of your data and related files:

City of Portland:

The City's first category of data is project management data. Most of this data will be correspondence communicated online via email, or verbal communication during meetings that may be compiled in project management notes via software such as Microsoft Word (.doc), Microsoft Excel (.xlsx) or Google documents. The format of these data will remain as such until, as necessary, the data is transformed into a shareable format for the public and industry stakeholders as PDFs.

The City will also have educational, website, and outreach material content. All text files, visual files, presentations, and/or design files will be saved as PDFs to ensure public access. Additionally, this data will be provided on a project website, which will contain compiled outreach content, as well as charts, figures, etc. These data are summarized from other sources and do not require independent validation.

Finally, the City may also have GIS location data as part of the project. These data include geospatial information and associated attribute information and will be formatted in shapefile (.SHP, .DBF, .SHX), and Geographic JavaScript Objects (.GEOJSON, .JSON). These formats were selected due to staff expertise and ease of use in sharing. Data is validated through traditional GIS validation techniques (tabular consistency checks of metadata) and through coordination between the professionals providing the different sources of GIS data to identify and rectify any data irregularities.

Research Partners:

Both PSU and UFL survey data will likely be in .CSV or .SPSS file format (for analysis) and interview data will be primarily in notes documented in Google Sheets and MS Word (.doc).

The PSU raw video will be in .MPEG, .MP4, or .WAV formats and reduced/summarized findings from the video data will be tabulated in MS Excel and .CSV formats.

Technology Partners:

MDS Provider APIs include specific trip and status change fields that document time, location, trip routing, and other relevant fields that show the broader movement patterns of vehicles. CDS Curbs API includes fields describing location, size, and rules around curb zones and spaces. CDS Events API includes fields describing vehicles, time, duration and other relevant information on how specific parking zones are used. Formats are well documented.

Data ingested from INRIX curb inventory will use CDS Curbs API format.

Data ingested from camera-based sensor companies will use CDS Events API format and may use other formats (TBD) as well.

More information on MDS, including specific field formats, can be found at: <https://github.com/openmobilityfoundation/mobility-data-specification/tree/main/provider>

More information on CDS, including specific field formats, can be found at: <https://github.com/openmobilityfoundation/curb-data-specification/tree/main/events>

B-Line's raw data collected from IoT devices on trikes will use MQTT protocol with JSON payloads. The structure of the JSON payloads will be specific to the IoT devices and the hardware on the trike. This data will be stored on B-Line servers and is not considered as data delivered as part of this project. CDS and MDS data will be extracted from the IoT raw data and shared via APIs for consumption by Ride Report. All data transactions with Ride Report will conform to the OMF CDS and MDS API definitions and use JSON payloads as per the specification.

The file formats of data collected by the sensor company depends on the company selected and the City has not yet completed that process. The City intends that data collected from sensors will use CDS Events API format and may use other formats (TBD) as well.

2. To the maximum extent practicable, your DMP should address how you will use platform-independent and non-proprietary formats to ensure maximum utility of the data in the future. If you are unable to use platform-independent and non-proprietary formats, you should specify the standards and formats that will be used and the rationale for using those standards and formats

Research Partners:

PSU and UFL data files will be outputted in CSV format for storage.

Technology Partners:

Ride Report will be primarily using MDS and CDS, which are platform-independent and open-source formats. The data Ride Report will source from INRIX for CDS is platform-dependent and proprietary. This data from INRIX will be used because the company has already mapped the entire City of Portland and, given the relatively short length of this project, having data immediately is important.

All of B-Line's data transactions with Ride Report will conform to the OMF CDS and MDS API definitions and use JSON payloads as per the specification.

The platform used and format of data from the sensor company depends on the company selected and the City has not yet completed that process.

3. Identify the metadata standards you will use to describe the data. At least one metadata file should be a DCAT-US v1.1 (<https://resources.data.gov/resources/dcat-us/>) .JSON file, the federal standard for data search and discovery.

City of Portland:

The datasets and metadata that will be archived after the project are not yet defined as they will be developed as the project scope takes shape and technology is procured. However, as datasets develop, the City will create metadata that is compliant with the

Federal Government DCAT-US Metadata Scheme v1.1 to ensure discoverability when archived.

Research Partners:

PSU and UFL will use DCAT-US v1.1 metadata standard.

Technology Partners:

Ride Report's data transactions will conform to the OMF MDS and CDS API definitions and use JSON payloads as per the specifications (<https://github.com/openmobilityfoundation/curb-data-specification/tree/main> and <https://github.com/openmobilityfoundation/mobility-data-specification/tree/main/provider>).

B-Line's data transactions will conform to the OMF CDS API definitions and use JSON payloads as per the specification.

The metadata standards of data collected by the sensor company depends on the company selected. The City is still assessing technology needs and has not completed that process at this time.

Access Policies

In general, data from DOT-funded projects must be made publicly accessible. Exceptions to this policy are: data that contain personally identifiable information (PII) that cannot be anonymized; confidential business information; or classified information. Protecting research participants and guarding against the disclosure of identities and/or confidential business information is an essential norm in scientific research. Your DMP should address these issues and outline the efforts you will take to provide informed consent statements to participants, the steps you will take to protect privacy and confidentiality prior to archiving your data, and any additional concerns. In general, in matters of human subject research, your DMP should describe how your informed consent forms will permit sharing with the research community and whether additional steps, such as an Institutional Review Board (IRB), may be used to protect privacy and confidentiality. Additionally, when working with, or conducting research that includes Indigenous populations or Tribal communities, researcher will adhere to the CARE Principles for Indigenous Data Governance <https://www.gida-global.org/care> and make an explicit statement to that effect in this portion of the DMP.

Please provide as much information as possible:

- 1. Describe any sensitive data that may be collected or used;**
- 2. Describe how you will protect PII or other sensitive data, including IRB review, application of CARE Principles guidelines, or other ethical norms and practices;**
 - 1. If you will not be able to deidentify the data in a manner that protects privacy and confidentiality while maintaining the utility of the dataset, you should describe the necessary restrictions on access and use;**
- 3. Describe any access restrictions that may apply to your data;**
- 4. If necessary, describe any division of responsibilities for stewarding and protecting the data among Principal Investigators or other project staff.**

Statement about Access Policies

City of Portland:

The City of Portland is committed to transparency and is interested in sharing project learnings with the public. Access to insights and data from this project will be captured in a final report prepared by the City, which will be made readily available to the public online and archived by the City.

The City's commitment to transparency is reflected by the City's Open Data Policy (Ordinance 188356) which commits the City to the publication, accessibility, and equitable and widespread sharing of data collected and generated by all City bureaus and organizations working on behalf of the City. The Open Data Policy also created an Open Data Program to implement the policy and a Data Governance Team who provides guidance to the City. Some data will be protected by data sharing agreements with partners to protect private or confidential business information, and those data sharing agreements are part of contracts that have yet to be executed. All City records, regardless of physical or electronic form or media, created or maintained by City employees are subject to the State of Oregon's public records laws, which include provisions for safeguarding records from improper destruction or alteration and for providing public access to those records. The City of Portland Archives & Records Management Administrative Rule ARA-8.03 governs Public Records Requests.

Research Partners:

PSU and UFL will protect PII and other sensitive data by submitting survey and interview procedures to their respective Institutional Review Board (IRB) for review and approval. All data will be stored and maintained to meet the required IRB standards. Consent forms will clearly indicate that survey and interview results will be shared in aggregate form, and/or with any personally identifying information removed.

Technology Partners:

Ride Report has a history of making data public through tools such as its Global Micromobility Index and Impacts. PBOT participates in these initiatives, and we anticipate similar public facing data sharing and tools that allows useful data to be made accessible without compromising privacy and security.

B-Line develops impact reports (<https://b-linepdx.com/our-vision/>) that quantify and daylight their environmental impacts, client

impacts, social impacts, and employee experience on an annual basis. More robust data collected as part of the ZEDZ project will enhance B-Line's transparency and understanding of opportunities for potential operational improvements.

1. Describe any sensitive data that may be collected or used

City of Portland:

The Oregon Consumer Privacy Act (OCPA), passed on July 18, 2023 and effective July 1, 2024, defines "sensitive data" broadly relative to other state privacy laws and includes information revealing an Oregon consumer's racial or ethnic background, national origin, religious beliefs, mental or physical condition or diagnosis, sexual orientation, status as transgender or non-binary, status as a victim of crime, or citizenship or immigration status, as well as specified precise location data, children's data, and genetic and biometric data.

With regards to precise location data, OCPA provisions apply to information that accurately identifies a consumer's current or past location within a radius of 1,750 feet, or the location of a device connected to that consumer using technology like a GPS system. It is worth noting that parking sensors that will be trialed as part of the City's SMART grant will be focused on understanding use of the City's commercial loading zones. These commercial loading zones are used by corporations and their employees; they are not used by "consumers" in the traditional sense.

The City does not expect to collect sensitive data through its SMART grant project.

Research Partners:

PSU and UFL expect some survey responses to have names and contract information, for example if respondents indicate that they are interested in sharing more information via an interview. PSU will be collecting video files that may have identifiable people in the images. However, none of these data rise to the threshold of sensitive data per OCPA.

Technology Partners:

While there are different laws and interpretations around the sensitivity of geolocation data stemming from the rapidly changing nature of the technology, Ride Report considers MDS Provider data to be Personally Identifiable Information for the purposes of data storage and management. Curb Events data may be considered proprietary and sensitive for private companies. As such Ride Report will protect the data as outlined in this document.

B-Line will not be collecting sensitive data with PII.

The nature and sensitivity of the data collected by the sensors, and how it will be protected depends on the company selected and the City has not completed that process. However, as noted above, these data are not focused on consumers and therefore may not be classified as sensitive data.

2. Describe how you will protect PII or other sensitive data, including IRB review, application of CARE Principles guidelines, or other ethical norms and practices. If you will not be able to deidentify the data in a manner that protects privacy and confidentiality while maintaining the utility of the dataset, you should describe the necessary restrictions on access and use

City of Portland:

The City of Portland does not intend to collect any Personally Identifiable Information (PII) as part of its SMART grant project. According to Oregon state law, PII includes a person's first name, or first initial and last name, in combination with their Social Security number, driver license number or state ID card number, passport number, financial account numbers, physical characteristics data to authenticate identification such as fingerprints, health insurance policy number or other subscriber identification number, or medical history information.

The Oregon Consumer Privacy Act (OCPA), passed on July 18, 2023 and effective July 1, 2024, defines "sensitive data" broadly relative to other state privacy laws and includes information revealing an Oregon consumer's racial or ethnic background, national origin, religious beliefs, mental or physical condition or diagnosis, sexual orientation, status as transgender or non-binary, status as a victim of crime, or citizenship or immigration status, as well as specified precise location data, children's data, and genetic and biometric data. The City does not intend to collect sensitive data through its SMART grant project.

Research Partners:

PSU will protect PII and other sensitive data by submitting survey and interview procedures to the PSU Institutional Review Board (IRB) for review and approval. All data will be stored and maintained to meet PSU's IRB standards. Consent forms will clearly indicate that survey and interview results will be shared in aggregate form, and/or with any personally identifying information removed. Video data will be reported in aggregate. Original video data files will not be shared.

UFL will protect PII and other sensitive data by submitting survey and interview procedures to the UW Institutional Review Board (IRB) for review and approval. All data will be stored and maintained to meet UW's IRB standards. Consent forms will clearly indicate that survey and interview results will be shared in aggregate form, and/or with any personally identifying information removed.

Technology Partners:

Ride Report will protect PII and other sensitive data in a variety of ways. Raw MDS and CDS Events data will not be stored on PBOT servers. Additionally, Ride Report (<https://www.ridereport.com/privacy-policy/#:~:text=Security%20of%20your%20information,-We%20use%20administrative&text=While%20we%20have%20taken%20reasonable,or%20other%20type%20of%20misuse>) and

INRIX (<https://inrix.com/site-privacy-policy/#:~:text=We%20will%20share%20your%20personal,law%20enforcement%20or%20national%20security>) both have Information Security Policies embedded in their Privacy Policies and INRIX is SOC 2 compliant (see question 4 on data privacy and security for more information on SOC 2). Finally, all metrics will be aggregated at the geography and time levels to protect individual user privacy and to protect proprietary data secrets from individual companies. Ride Report and PBOT have a more

than 6-year partnership working with this type of data and software that ensures staff have the tools they need while minimizing risk of security breaches

B-Line Urban Delivery will not have any PII or other sensitive data.

The nature and sensitivity of the data collected by the sensors, and how it will be protected depends on the company selected and the City has not completed that process. The City has a robust Privacy Impact Assessment process that will be conducted to ensure whichever company selected adequately protects privacy and security per the City's policies.

3. Describe any access restrictions that may apply to your data

Research Partners:

PSU and UW will store original study files on a protected drive with limited access. Only members of the research teams will have access to the raw data. Video files will be stored by PSU through the end of the project.

Technology Partners:

Ride Report and INRIX Information Security Protocols dictate that people only access sensitive data on an "as needed" basis, largely software engineers. Even the less sensitive data displayed in the software tools are password protected with individual user logins.

B-Line does not expect any access restrictions to apply to their data.

Any access restrictions that apply to data collected by sensor companies will be determined by the sensor company selected, which has yet to be determined.

4. If necessary, describe any division of responsibilities for stewarding and protecting the data among Principal Investigators or other project staff.

Each project partner is responsible for stewarding and protecting their own data, including managing access and sharing permissions among principal investigators and other project staff. Project partners will need to determine whether any division of responsibilities for stewarding and protecting the data should be employed. For example, the City of Portland may determine the Principal Investigator/Project Manager may have higher levels of access to certain data/information that may be restricted, aggregated, synthesized, and/or summarized before being disseminated to other members of the City's project team, the broader project team, and/or the public. The City has experience addressing issues like defining division of responsibilities around sensitive and/or Confidential Business Information and specific responsibilities for this project may be determined through the City's contracting procedures, including but not limited to data-sharing agreements and non-disclosure agreements. Contracts are still under development as of this submittal.

As noted above, other research and technology partners may also employ division of responsibilities to manage access restrictions on data.

Re-use, Redistribution, and Derivatives Products Policies

Recipients are reminded:

- 1. Data, as a collection of facts, cannot be copyrighted under US copyright law;**
- 2. Projects carried out under a US DOT SMART Grants is federally funded; therefore, as stated in grant language:**
 - 1. Recipients must comply with the US DOT Public Access Plan, meaning, among other requirements, project data must be shared with the public, either by the researchers or by US DOT;**
 - 2. That by accepting US DOT funding through this grant, recipients have granted to US DOT a comprehensive non-exclusive, paid-up, royalty-free copyright license for all project outputs (publications, datasets, software, code, etc.). This includes all rights under copyright, including, but not limited to the rights to copy, distribute, prepare derivative works, and the right to display and/or perform a work in public; and,**
 - 3. In accordance with Chapter 18 of Title 35 of the United States Code, also known as the Bayh-Dole Act, where grant recipients elect to retain title to any invention developed under this grant, US DOT retains a statutory nonexclusive, nontransferrable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any such invention throughout the world.**

Please provide as much information as possible:

- 1. Describe who will hold the intellectual property rights for the data created or used during the project;**
- 2. Describe whether you will transfer those rights to a data archive, if appropriate;**
- 3. Identify whether any licenses apply to the data;**
 - 1. If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP;**
- 4. Describe any other legal requirements that might need to be addressed.**

1. Describe who will hold the intellectual property rights for the data created or used during the project

City of Portland:

In contracts, the City of Portland's standard terms and conditions are that the City holds the intellectual property rights for anything it creates, and that the City also holds ownership over any work products produced by the Contractors. Additionally, the City acknowledges the requirements (i.e. USDOT Public Access Plan; comprehensive non-exclusive, paid up, royalty-free copyright license; Bayh-Dole Act, etc.) stemming from SMART grant funding and will include these terms and conditions in its contracts with contractors.

Included below are two standard terms and conditions the City seeks to include in all contracts. It is worth noting, that assignment of intellectual property is determined during contract processes. These contracts are still under development as of this submittal. "Intellectual Property Rights (IPR)" (11/18) means any patent rights, copyrights, trade secrets, trade names, service marks, trademarks, trade dress, moral rights, know-how and any other similar rights or intangible assets to which rights of ownership accrue, and all registrations, applications, disclosures, renewals, extensions, continuations, or reissues of the foregoing now or hereafter in force.

Ownership of Property. (06/19) All Work Product produced by the Contractor under this Contract exclusively for the City is the exclusive property of the City. "Work Product" includes, but is not limited to: research, reports, computer programs, manuals, drawings, recordings, photographs, artwork and any data or information in any form, with the exception of data or information associated with the City's Mobility Data Standards. The Contractor and the City intend that such Work Product shall be deemed "work made for hire" of which the City shall be deemed the author. If for any reason a Work Product is deemed not to be a "work made for hire," the Contractor hereby irrevocably assigns and transfers to the City all right, title and interest in such Work Product, whether arising from copyright, patent, trademark, trade secret, or any other state or federal intellectual property law or doctrines. Contractor shall obtain such interests and execute all documents necessary to fully vest such rights in the City. Contractor waives all rights relating to work product, including any rights arising under 17 USC 106A, or any other rights of authorship, identification or approval, restriction or limitation on use or subsequent modifications. If the Contractor is an architect, the Work Product is the property of the Consultant-Architect, and by execution of this Contract, the Contractor-Architect grants the City an exclusive and irrevocable license to use that Work Product.

Notwithstanding the above, all pre-existing trademarks, services marks, patents, copyrights, trade secrets, and other proprietary rights of Contractor are and will remain the exclusive property of Contractor. Contractor hereby grants to the City a non-exclusive, perpetual, irrevocable license, with the right to sublicense, to disclose, copy, distribute, display, perform, prepare derivative works of and otherwise exploit any pre-existing Intellectual Property Rights incorporated into the Work Product(s).

Research Partners:

PSU intends to hold the intellectual property rights for materials produced by PSU. UW intends hold the intellectual property rights for materials produced by UW. This will be determined during the City's contracting processes. These contracts are still under development as of this submittal.

Technology Partners:

Intellectual property rights with technology partners (Ride Report, INRIX, sensor companies, B-Line) will be determined during the City's contracting processes and comply with local, state, and federal laws and requirements, including terms and conditions of SMART grant funding. These contracts are still under development as of this submittal.

2. Describe whether you will transfer those rights to a data archive, if appropriate

Yes, if and where appropriate rights will be transferred to a data archive. Rights on Intellectual Property, Re-Use, Redistribution, and Derivative Products will be subject to existing federal, state, and local laws and will be determined during contract processes. These contracts are still under development as of this submittal.

3. Identify whether any licenses apply to the data. If you will be enforcing terms of use or a requirement for data citation through a license, indicate as much in your DMP

Licenses may apply to the data. Requirements on terms of use or data citations will be determined during contract processes and will comply with existing local, state, and federal laws and requirements, including terms and conditions of SMART grant funding. Contracts are still under development as of this submittal.

4. Describe any other legal requirements that might need to be addressed

City of Portland:

City of Portland data is subject to records retention requirements. Record retention schedules have been defined to establish a timetable (retention period) for a record's life cycle and provide authorization for a record's ultimate disposition, either destruction or permanent preservation. While this is not a comprehensive list, categories of data subject to records retention may include the following: Parking Citation Records, Traffic Control Equipment Inventory Records, Traffic Accident/Safety Analysis, and Traffic Research and Study Records. Additionally, all City records, regardless of physical or electronic form or media, created or maintained by City employees are subject to the State of Oregon's public records laws, which include provisions for safeguarding records from improper destruction or alteration and for providing public access to those records. The City of Portland Archives & Records Management Administrative Rule ARA-8.03 governs Public Records Requests. Some data may be protected from public release if it is classified as Protected Data and/or Confidential Business Information, protections which may apply to some data affiliated with this project. Examples may include raw, disaggregated MDS and CDS data. Formal determinations will occur later through contracting and Privacy Impact Assessment processes.

Research and Technology Partners:

Data and products created by PSU, UFL, Ride Report/INRIX, B-Line Urban Delivery and contracted sensor companies may be subject to other legal agreements based on their organization and existing local, state, and federal laws and requirements.

Archiving and Preservation Plan

Please provide as much information as possible:

1. State where you intend to archive your data and why you have chosen that particular option;
2. Provide a link to the repository;
3. You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability;
 1. Whatever archive option you choose, that archive should support the capture and provision of the US Federal Government DCAT-US Metadata Schema <https://resources.data.gov/resources/dcat-us/>
4. In addition, the archive you choose should support the creation and maintenance of persistent identifiers (e.g., DOIs, handles, etc.) and must provide for maintenance of those identifiers throughout the preservation lifecycle of the data;
5. Your plan should address how your archiving and preservation choices meet these requirements.

1. State where you intend to archive your data and why you have chosen that particular option

City of Portland:

The City will hold and store records per our records retention policies. These policies can be found at:

<https://www.portland.gov/archives/retention-schedules>

The primary archiving tool will be a final report, which will then be saved on City servers, published on the City webpage for the public, shared with the US Department of Transportation, and ultimately archived by the City of Portland Auditor's Office through the City's digital record management system, efiles.

Research Partners:

PSU will archive data via PDX Scholar (Portland State University) and efiles.

UFL will archive data via UW Google Drive and UW Sharepoint Drive and efiles.

Technology Partners:

Ride Report/INRIX, B-Line Urban Delivery and contracted sensor companies will store data and make data available per the terms and conditions of contracts with the City of Portland and relevant federal requirements. These contracts are still underdevelopment as of this submittal.

2. Provide a link to the repository

City of Portland:

City of Portland's final report will be posted on the Portland Bureau of Transportation's website and archived by the Auditor's Office through the City's digital record management system, efiles (<https://efiles.portlandoregon.gov/Search>). In the City's system, the record number becomes a permanent link. Select project information will also be available on the Open Mobility Foundation (OMF) GitHub webpage which is a publicly accessible data repository documenting the development of the Curb Data Specification.

Research Partners:

PSU's repository can be accessed here: <https://pdxscholar.library.pdx.edu/> and through efiles. UFL's data repository is internal and will be accessible through efiles.

Technology Partners:

Ride Report/INRIX, B-Line Urban Delivery and contracted sensor companies will store data and make data available per the terms and conditions of contracts with the City of Portland and relevant federal requirements. These contracts are still underdevelopment as of this submittal.

3. You must describe the dataset that is being archived with a minimum amount of metadata that ensures its discoverability. Whatever archive option you choose, that archive should support the capture and provision of the US Federal Government DCAT-US Metadata Schema <https://resources.data.gov/resources/dcat-us/>

Following guidance from Project Open Data Metadata Schema, minimum metadata will include fields like Title, Description, Keywords, Date for most current update, Publisher, Contact Point, Unique Identifiers, and Federal Agency Bureau and Program Codes (as relevant). The datasets developed will be compliant with the Federal Government DCAT-US Metadata Schema (v1.1) to ensure discoverability when archived.

4. In addition, the archive you choose should support the creation and maintenance of persistent identifiers (e.g., DOIs, handles, etc.) and must provide for maintenance of those identifiers throughout the preservation lifecycle of the data. Your plan should address how your archiving and preservation choices meet these requirements

The research team plans to archive our data long term on the PDX Scholar repository. PDX scholar provides and support persistent

identifiers through their use of DOIs and ORCIDs. PDX scholar is the archiving and storage solution for the University of Portland. All of our final research products will be made available on this repository following project completion.

Planned Research Outputs

Data paper - "City of Portland Final Report on the SMART Grant Prototype Zero-Emission Delivery Zone"

This final report published by the City of Portland will detail the process of prototyping the Zero-Emission Delivery Zone (ZEDZ) throughout Stage 1 of the Strengthening Mobility and Revolutionizing Transportation (SMART) Grant. This report will summarize all data collected, analyzed and evaluated throughout the process including, but not limited to, survey and interviews of stakeholders, loading and unloading activities at the curb as evaluated through video and sensor data, MDS and CDS, and e-trike operations from the MicroHub to the ZEDZ.

Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
City of Portland Final Report on the SMART Grant P ...	Data paper	2025-06-14	Open	None specified		None specified	None specified	No	No