**Ocean Shipping Reform Act of 2022 Section 16 Chassis Data Collection Methods**

**Background**

The [*Ocean Shipping Reform Act of 2022* (OSRA 22)](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.congress.gov%2Fbill%2F117th-congress%2Fsenate-bill%2F3580&data=05%7C01%7Capril.gadsby%40dot.gov%7C084b0b29c5ce43b4913308dadd45aa55%7Cc4cd245b44f04395a1aa3848d258f78b%7C0%7C0%7C638065588858674360%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=h7q2elMx0PG56NbO8mmLuDpDUPyJmRMQMpHTYp3T%2FOQ%3D&reserved=0) (Public Law 117-146) was passed in June 2022 in response to the supply chain challenges during the Covid-19 pandemic. Section 16 of [OSRA](https://gcc02.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.congress.gov%2Fbill%2F117th-congress%2Fsenate-bill%2F3580&data=05%7C01%7Capril.gadsby%40dot.gov%7C084b0b29c5ce43b4913308dadd45aa55%7Cc4cd245b44f04395a1aa3848d258f78b%7C0%7C0%7C638065588858674360%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=h7q2elMx0PG56NbO8mmLuDpDUPyJmRMQMpHTYp3T%2FOQ%3D&reserved=0) 22 mandates that the Bureau of Transportation Statistics (BTS) produce statistics on “the total street dwell time from all causes of marine containers and chassis and the average out of service percentage of chassis” at the top 25 ports. OSRA 22 grants BTS authority to collect data from “each port, marine terminal operator, and chassis owner or provider with a fleet of over 50 chassis that supply chassis for a fee” as deemed necessary to produce these statistics. The results from the initial data collection will be published by February 10, 2023, and every month thereafter until the sunset of the program. These statistics will be used as leading indicators for supply chain congestion.

**Population of interest**

Per Section 16 of OSRA 22, the population of interest includes “each port, marine terminal operator, and chassis owner or provider with a fleet of over 50 chassis that supply chassis for a fee.” Chassis included are all chassis “not less than 20 feet and not greater than 45 feet.” Any combination chassis that can serve as 40- and/or 45-foot chassis will be included in the population and treated as 40-foot chassis.

**Data Frame**

At this time, the best accounting of the population of in-scope chassis providers available to BTS is the [Global Intermodal Equipment Registry (gierregistry.com)](https://gierregistry.com/) database. It’s estimated that this database contains over 90% of the chassis in operation in the United States and the in-scope chassis providers are about 40% of those in the database. This data collection is a census, so there will be no sampling.

**Confidentiality**

BTS has invoked *Confidential Information Protection and Statistical Efficiency Act* (CIPSEA) to collect the dwell time statistics as required in OSRA 22. CIPSEA assures data providers that their reported information will be kept confidential and will only be used for statistical purposes. Data collected under CIPSEA are immune from legal processes and cannot be admitted as evidence in court and are exempt from *Freedom of Information Act* (FOIA) requests. The data can only be accessed by BTS staff with a business need to know.

All data are submitted through a secure data portal, [OSRA Data Portal (bts.gov)](https://www.c3rs.bts.gov/osra/login?r=/). The data are kept on the BTS private network. The private network is designed for protected data. The private network does not have direct internet access and there is no sharing of files between the DOT main network and BTS private network. Backups are maintained within the private network.

Prior to dissemination all data products will be reviewed using the BTS confidentiality review process. This process allows for analysis of the data to determine that all confidential information submitted into OSRA 22 is protected such that any data released does not allow for the identification of who submitted data or what data they submitted. For further information, please see the BTS Confidentiality Policy at <https://www.bts.gov/confidentiality>.

**Data Collection**

* + Collection Period: January 2023 until the sunset of the program
  + Collection dates: 10th-15th of every month
  + Data Period: Prior calendar month
  + Collection format: Electronic submission through the OSRA secure data portal
  + Data should be sent in the data template provided with the formal data request. The data requested include:

Dwell Time Data:

Note: Include all out gate movements within the month, even if the chassis has not in gated. Include both the true out gate and in gate for all chassis that in gate during the month.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Data Format** | **Description** | **Example** |
| **ChassisID** | Alpha numeric |  | Unique number ID for all chassis | TAJJ167333 |
| **Size** | Text |  | Chassis length | 20, 40, 45, etc. |
| **Outgate\_Date** | Datetime | MM/DD/YYYY  HH:MM | EDI date and time stamp at time of exit during the data month | 8/5/2022 17:08 |
| **Outgate\_Location** | Text |  | The street address of the out-gate location | 123 Port Street, City, State, Zip |
| **Ingate\_Date** | Datetime | MM/DD/YYYY  HH:MM | EDI date and time stamp at time of re-entry during the data month | 8/23/2022 19:35 |
| **Ingate\_Location** | Text |  | The street address of the in-gate location | 123 Port Street, City, State, Zip |
| **Market** | Text |  | The market name | Savannah |

Out of Service (OOS) Data:

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Description** | **Example** |
| **Market** | Text | The market name | Savannah |
| **Size\*** | Text | Chassis length | 20, 40, 45, etc. |
| **OOS\_Location** | Text | The street address of the location | 123 Port Street, City, State, ZIP |
| **OOS\_Chassis** | Integer | The total count of OOS chassis within the data month\*\* | 200 |
| **Total\_Chassis** | Integer | The total count of all chassis assets originating at the location within the data month (on-site and on-street) | 5,000 |

\* If at all available

\*\* See glossary for definition of OOS

**Defining Geography**

The provided addresses will be used to geocode each data entry. Due to proximity of some ports (ex. Los Angeles and Long Beach, Sea ports and associated rail terminals/inland ports, etc.) BTS has decided to define the local level specified in the mandate as a Metropolitan Statistical Area (MSA). For the sake of this data collection, local and market will mean MSA.

The mandate calls for statistics at the top 25 ports. The top 25 ports will be defined by the ports with the most chassis movements in a month and the data will be aggregated at the MSA.

The MSAs and any data associated with a location outside one of the MSAs will be aggregated to regional data as specified in the mandate. Regions will be defined by the Census Regions.

After this process each data entry will be assigned region and, if possible, an MSA.

**Data Cleaning**

1. Data should be submitted following the template and data descriptions provided, but BTS will check the format of data to ensure consistency. Data will be reformatted as necessary for all data files to have the same column names and data types.
2. A missing value check will be performed. Missing values will be addressed by follow-up, imputation, or removal of that data point as deemed reasonable and appropriate.
3. Data will be geocoded and assigned an MSA and region.
4. After data from all providers are combined, duplicates based on chassis number and timestamp will be identified. Only one of the data points will be retained.
5. Next, dwell time will be calculated (see analysis section) and any dwell times below 5 minutes will be removed. Based on feedback from data providers, these short dwells could represent derived/missing values or bare movements from depot to container yard that aren’t representative of street dwell time. These represented less than 0.5% of all dwell times in the test data we received.

**Analysis**

* Dwell Time
  + For each movement,
  + The dwell time statistics will be calculated by taking the statistic of all dwell times in the location (i.e., MSA, region, and nation).
  + Statistics may include mean (average), median, quartiles, variance, and any others deemed relevant and useful.
  + The statistics will be weighted or imputed to adjust for non-response. The exact method will be chosen once BTS has a better understanding of the response rate.
  + Released information will be the dwell time statistics at geographic areas (to be determined) for that month by chassis size, when disclosure avoidance requirements are met. Any detailed data not meeting disclosure avoidance requirements will not be published at that level but will be aggregated into the data at the coarser geographic resolution that meets disclosure avoidance requirements.
* OOS Rate
  + The OOS percentage will be calculated at each location as the total count of all OOS chassis divided by total inventory count of all chassis as follows:
  + The statistics will be weighted or imputed to adjust for non-response. The exact method will be chosen once BTS has a better understanding of the response rate.
  + Released information will be the OOS rate statistics at a geographic areas (to be determined) for that month, when disclosure avoidance requirements are met. Any detailed data not meeting disclosure avoidance requirements will not be published at that level but will be aggregated into the data at the coarser geographic resolution that meets disclosure avoidance requirements.

**Dissemination**

All data products will go through the BTS confidentiality review process to ensure strict confidentiality of all data. When necessary, some data may be suppressed to preserve the confidentiality of the data providers as well as the data they have provided to BTS. The data release will include tables of dwell time and OOS rate at the MSA, regional, and national level. These will be downloadable as CSV and Excel files. Data products will be released on the 10th of every month for the prior month. The data products will be published to the BTS website, [Ocean Shipping Reform Act of 2022 (OSRA 22)](https://www.bts.gov/browse-statistical-products-and-data/surveys/ocean-shipping-reform-act-2022-osra-22) *(bts.gov).*

<https://www.bts.gov/browse-statistical-products-and-data/surveys/ocean-shipping-reform-act-2022-osra-22>

**Glossary**

BTS – Bureau of Transportation Statistics, federal statistical agency mandated to collect this data

Chassis – A wheeled piece of equipment designed to carry containers

Closed Cycle – A single out-gate to in-gate trip

EDI – Electronic Data Interchange format

In gate – Movement into a terminal or depot, ending the dwell time measurement

Market – Area a chassis operates in, for this data collection defined as a Metropolitan Statistical Area (MSA)

For-Hire – Available to be used in exchange for payment

Metropolitan Statistical Area (MSA) – Area delineated by the Office of Management and Budget that contains at least one city with a minimum population of 50,000 people.

Out gate – Movement out of a terminal or deport, start of the dwell time measurement

Out of Service (OOS) – Chassis that need maintenance and repair, in need of inspection, are not roadable, or are damaged but serviceable. Any chassis damaged beyond repair or otherwise not serviceable should not be considered OOS or within the chassis inventory.

Port – For this data collection, the top 25 ports will be top 25 MSA

Region – Census regions which divide the country into 4 groups of states based on location

Street Dwell Time – Quantity of time during which a chassis is in use outside of the terminal