HOMELAND SECURITY STUDIES AND ANALYSIS INSTITUTE

The Homeland Security Act of 2002 (Section 305 of PL 107-296, as codified in 6 U.S.C. § 185) authorizes the Secretary of the Department of Homeland Security (DHS), acting through the Under Secretary for Science and Technology, to establish one or more federally funded research and development centers (FFRDCs) to provide independent analysis of homeland security issues. Analytic Services Inc. operates the Homeland Security Studies and Analysis Institute (HSSAI) as an FFRDC for DHS under contract HSHQDC-09-D-00003.

HSSAI provides the government with the necessary expertise to conduct crosscutting mission analysis, strategic studies and assessments, development of models that baseline current capabilities, development of simulations and technical evaluations to evaluate mission trade-offs, creation and evolution of high-level operational and system concepts, development of top-level system and operational requirements and performance metrics, operational analysis across the homeland security enterprise, and analytic support for operational testing evaluation in tandem with the government’s acquisition process. HSSAI also works with and supports other federal, state, local, tribal, public and private sector organizations that make up the homeland security enterprise.

HSSAI’s research is undertaken by mutual consent with DHS and is organized as a set of discrete tasks. This report presents the results of research and analysis conducted under

**Task 15-13, DHS Cargo Time Release Study, Phase 1**

The purpose of this task is to conduct phase 1 of the two-phase DHS time release study that measures the average time taken between the arrival of goods at the border and their release by the government. This task will develop the data collection and analysis methodology for the time release study.

The results presented in this report do not necessarily reflect official DHS opinion or policy.
TASK LEAD
Jennifer Jacobs, PhD

TASK TEAM
Chris Adams
Isadora Blachmann-Biatch
Taryn Laster-Whitehead
Steven Weiss, PhD

Howard Smith, PhD
Manager, Policy and Programs Division

Robert Tuohy
Vice President and Deputy Director

CARGO TIME RELEASE STUDY, PHASE 1

Final Report

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For information about this publication or other research, contact

**HOMELAND SECURITY STUDIES AND ANALYSIS INSTITUTE**

Analytic Services Incorporated
5275 Leesburg Pike, Suite N-5000
Falls Church, Virginia 22041
Tel (703) 416-3229 • Fax (703) 379-2550
www.homelandsecurity.org

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GLOSSARY

Bill (of lading)  document issued by a carrier to the exporter and importer detailing the cargo on-board. Contains similar information as the manifest

Broker  actor hired by importers to prepare and file customs entries, arrange customs payments, and represent the importer in customs matters

Carrier  actor that physically moves the goods to the U.S. port of entry

Entry  forms submitted by importer or broker to CBP for approval of admittance to the United States

Entry release  when CBP clears an entry

Entry submission  when the filer submits their entry to CBP

Exporter  actor that obtains foreign goods and arranges their export to the United States

Filer  entity, either the importer directly or the broker representing them, who submits an entry to CBP

Hold  order issued by CBP or a select few PGAs to prevent imports from leaving a port until some action has occurred

Importer  principal actor that caused the imported goods to arrive in the United States and has the sole right to make entry for those goods

In-bond  refers to goods for which the filer decides to hold off making entry upon arrival and issue a bond to customs in lieu of payment of duties. These goods can either move to another port within the country or be held in a bonded warehouse for up to 30 days, at which point entry must be made and duties paid.

Manifest  document issued by a carrier to customs officials detailing the cargo, passengers, and crew onboard. Contains similar information as the bill of lading

Partner Government Agency (PGA)  U.S. government entity other than CBP with an interest in international trade to the country

Port of arrival  port where a specific shipment first arrives on U.S. soil. Some PGAs require inspections be done at the port of arrival if it differs from the port of entry.

Port of entry  port where filers submit entries for a specific shipment

Port of unlading  port where a specific shipment is unloaded from the international conveyance. This can differ from the port of arrival for airborne shipments.
Release into commerce: point at which all government holds are removed from a shipment and no further government actions are required. The broker or importer is then free to take the goods.

Shipment: data artifice created by CBP for tracking purposes, linking zero to one entries (from importers) to zero to one manifests (from carriers).

Start point: point at which a study begins timing the time to release. Generally, this will be the arrival time for a shipment.

Stop point: point at which a study stops timing the time to release. Generally, this will be the latest of entry release, the last hold removed, or the last PGA action for a shipment.

Time to release: time required for imports to enter commerce following their arrival in a country.

Trade: refers to the private entities involved in importing goods to the United States, particularly importers, exporters, and their representatives.

Vessel: Seagoing craft capable of transiting international cargo.
Executive Summary

Executive Order 13659, “Streamlining the Export/Import Process for America’s Businesses” (February 2014), directs all federal agencies involved in trade to support development of a single system for processing export and import cargo. This system, known as the International Trade Data System, is being developed as part of U.S. Customs and Border Protection’s (CBP) Automated Commercial Environment system. The executive order also directs agencies to measurably improve supply chain processes and identification of illicit or noncompliant shipments. The Homeland Security Studies and Analysis Institute is in process of completing a cargo time-release study (TRS) to establish baseline measurements of times for processing and releasing imported cargo. This report captures the first phase of the TRS, culminating in a study plan for the TRS.

The purpose of this first phase of the TRS was to develop the data collection and analysis methodology for the TRS. The scope of phase 1 mirrors the scope of the full study. This TRS will include analysis of goods arriving by sea, air, and vehicle ports of entry. It will exclude consideration of imports via mail. Rail imports and imports via courier services were considered during phase 1, and it remains an open question whether these will be included in execution of the TRS. The scope of the TRS is strongly dependent upon the data provided by CBP and partner government agencies (PGAs) with the ability to hold cargo at the border.

Following guidance of government, the study team examined the following nine PGAs for closer consideration (in alphabetical order):

- Agricultural Marketing Service (USDA/AMS)
- Animal and Plant Health Inspection Service (USDA/APHIS)
- Consumer Product Safety Commission (CPSC)
- U.S. Environmental Protection Agency (EPA)
- U.S. Fish and Wildlife Service (DOI/FWS)
- U.S. Food and Drug Administration (FDA)
- U.S. Food Safety and Inspection Service (USDA/FSIS)
- Fisheries service of the National Oceanic and Atmospheric Administration (NOAA-F)
- National Highway Transportation Safety Administration (DOT/NHTSA)

In this first phase of the TRS, the study team followed guidance of the World Customs Organization to create a detailed TRS study plan. In particular, the study team conducted a literature review and interviewed subject-matter experts, especially from PGAs. Based on this research, we developed process diagrams that specifically focused on the challenges of measuring times for cargo processes. Based on some initial data sets
provided by the government, we have characterized the available data to identify the analytic methodology to be used to establish the baseline time-to-release measures. Finally, the study team has leveraged the support of the PGAs and the Border Interagency Executive Council to establish a governance oversight committee to support and review the study plan developed in phase 1 and ongoing execution of the TRS.

Based on the data collected, the data identified but yet to be collected, and the analytic methodology constructed from process models and our characterization of the data received thus far, the study team has drafted a study plan, which is published as an annex to this report.
1. **INTRODUCTION AND BACKGROUND**

This report describes work performed by the Homeland Security Studies and Analysis Institute (HSSAI) during phase 1 of a cargo time-release study (TRS). This phase of the study was to conduct research and analyze potential sources of data in order to develop a plan for execution of the TRS. The primary result of phase 1 was preparation of a study plan for phase 2. This report offers details of the work conducted in preparing this study plan. The study plan itself is presented as a stand-alone document in a separate annex.

1.1. **Background**

Executive Order 13659, “Streamlining the Export/Import Process for America’s Businesses,” signed by President Barack Obama on 19 February 2014, directs all U.S. federal agencies with a role in trade to complete development of a single electronic system for receiving and processing all export and import cargo, known as the International Trade Data System (ITDS), by December 2016. ITDS, which is being developed as part of U.S. Customs and Border Protection’s (CBP) Automated Commercial Environment system, will provide a single electronic window that eliminates paper processes and duplicative reporting requirements. Executive Order 13659 also directs agencies to measurably improve supply chain processes and the identification of illicit or noncompliant shipments. To accomplish this, as well as assess the impact of the deployment of ITDS, the U.S. government must first establish a baseline measurement of current processes.

The Department of Homeland Security (DHS), in partnership with other key agencies with border responsibilities, seeks to complete a TRS that measures the average time between the arrival of goods at the border and their release by the government. This TRS would establish baseline trade facilitation performance measurements; help to identify bottlenecks, inefficiencies, and other potential areas of improvement in the cargo release process; assess newly introduced and modified techniques, procedures, technologies and infrastructure; and inform recommendations to improve trade processes. It will be particularly informative as the U.S. government works to implement the ITDS and related trade process improvements as required by Executive Order 13659.

However, U.S. government agencies currently have limited insight into the average length and causes of cargo delays at the border. CBP’s current import system receives inconsistent and sometimes incomplete time-of-arrival data. Collecting times for intervening steps between arrival and release, like unloading times or in-bond transit, is also difficult under the current system. As a result, assessing the length and common causes of cargo delays may require multiple techniques for collecting and combining data, possibly including manual collection, and the involvement of multiple agencies and filers. Similarly, a major part of the task team’s role may be to determine not only the

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1 World Customs Organization, *Time Release Study* (Brussels: World Customs Organization, 2011), 9. Other reasons to conduct a TRS per the WCO can be found on page 13 of the same report.

availability of data, but also how those data could or should be combined or evaluated to provide a more comprehensive understanding of current release times, as well as the context in which they occur.

1.2. Purpose and Objective

The purpose of this task was to conduct phase 1 of the two-phase TRS: to develop the data collection and analysis methodology for the TRS. The task team drew upon established TRS methodologies, including those provided by the World Customs Organization (WCO).

The WCO recommends that TRSs include three parts: preparation, collection and recording of data, and analysis of data and generation of conclusions. This task was concerned with the first part: the preparation for and planning of the TRS, along with some data collection to determine availability and applicability of data. This allowed the team to establish how DHS could go about conducting a TRS based on the types and amount of total data currently collected, as well as to identify data that might be collected for a TRS.

The objective of this task was to determine the processes and scope necessary to successfully conduct a TRS for DHS. The task team evaluated the feasibility of conducting a TRS based on the creation of the TRS data collection and analysis methodology. The methodology developed was based on the available data, interviews with subject matter experts (SMEs), and other relevant information. The analytic work executed under this task may direct the completion of the TRS to establish baseline trade facilitation performance. This report’s annex offers a proposed study plan to guide the execution of this TRS.

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3 An example of one such reference point would be the World Customs Organization, Guide to Measure the Time Required for the Release of Goods, version 2 (Brussels: World Customs Organization, 2011).
4 Ibid., 14.
5 Ibid., 6.
2. **Scope of Phase 1**

At the direction of DHS, this TRS will include analysis of goods arriving by sea, air, and vehicle ports of entry. It will exclude consideration of imports via mail, because differences in import procedures for postal cargo render that domain unrepresentative. Rail imports and imports via courier services were considered during phase 1, but it remains unclear whether rail and courier services (as a separate import mode) will be included in the scope of phase 2. Initially, CBP directed the task team to exclude rail on the assumption that acquiring necessary data would be too time consuming for the time available for this task. But some stakeholders have expressed an interest in including rail, and the study team has been able to gain some data on rail. As a result, the study team expects to include rail if possible. However, the high volume of in-bond cargo along with the realities of operational holds on a portion of a train manifest may limit accuracy of time release data for the rail-freight mode. The study team and guidance committee have yet to determine whether courier services may easily be separable within the volume of cargo arriving by air.

The scope of phase 1 (and thus the scope of TRS methodology developed for phase 2) was dependent on data provided by CBP and partner government agencies with the ability to hold cargo at the border. Following government guidance, the study team examined the following nine partner government agencies (PGAs) for closer consideration (in alphabetical order):

- the Agricultural Marketing Service (USDA/AMS),
- the Animal and Plant Health Inspection Service (USDA/APHIS),
- the Consumer Product Safety Commission (CPSC),
- the U.S. Environmental Protection Agency (EPA),
- the U.S. Fish and Wildlife Service (DOI/FWS),
- the U.S. Food and Drug Administration (FDA),
- the U.S. Food Safety and Inspection Service (USDA/FSIS),
- the Fisheries service of the National Oceanic and Atmospheric Administration (NOAA-F).

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6 In-bond cargo refers to goods whose filer decides to hold off making entry upon arrival and issue a bond to CBP in lieu of payment of duties. These goods can either move to another port within the country or be held in a bonded warehouse for up to 30 days, at which point entry must be made and duties paid.

7 Keith Devereaux, private communication, as e-mail to Jennifer Jacobs (copying DHS stakeholders who critically defined the scope of the effort), March 19, 2015.

8 There are 47 PGAs involved in customs work.

9 Formerly called the National Marine and Fisheries Service.
and the National Highway Transportation Safety Administration (DOT/NHTSA).

If appropriate, data may be provided by port authorities and private-sector organizations, though any such data collection was deferred to phase 2. The task team may, depending on the amount and type of available data, further scope the study to ensure that any analysis conducted can be fully evaluated.

The purpose of the phase 2 study—establishing a performance baseline for the customs system for imports—guided the types of data sought, collected, and analyzed in phase 1. The task team sought data sources that were representative of the general performance of the system. For example, the study team sought to capture data over a sufficiently long time span and volume of cargo traffic to preclude bias by random occurrences. The WCO suggests that having a geographic breadth of sources is less important. But as long as data may be available, the team does not expect to limit the study geographically. Additionally, because the study focused specifically on imports, data on export clearances or cargo transit to the country were not included.

Finally, though the study will include data from across the U.S. government, it will not look at the specifics of policies or procedures, except insofar as they affect the overall time to release cargo from customs. Though the study team will consider data measures that may inform prospective analysis of policies or procedures, this study only considered how to measure various times within the cargo operations. Neither phase 1 nor phase 2 of the TRS will result in direct recommendations for policy, procedures, or regulations to improve cargo review and examination processes.

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10 We note that this scoping choice might bias the task team toward sources with automatic, as opposed to manual, data collection methods, since these data are collected with greater fidelity over a longer duration.
3. **Methodology for Phase 1**

3.1. **Defining the Problem**

At first blush, it would seem straightforward to define how long it takes for cargo to be released into the cargo stream. One can log the arrival of a shipment and note the time that cargo moves out of the port into the system of commerce. But the cargo processes and the associated data collection are much more complicated than that, so development of a study of time to release cargo requires a more complex approach.

As noted previously, the WCO recommends that a TRS include three phases: preparation, collection and recording of data, and analysis of data and generation of conclusions.\(^{11}\) There are a number of elements that WCO recommends as a part of a detailed TRS plan: formation and composition of a working group to oversee the process, duration and time of the study, which organizations may contribute data, what types of goods and processes will be evaluated, and how sampling, collection, and recording of data will occur.\(^{12}\)

3.2. **Overall Approach**

The following is an overview of the technical process that the task team used to conduct phase 1 of the TRS. This process was split into the steps below: forming a working group, determining appropriate time measures and data needs, locating and examining existing data, and establishing study governance. After review of this material, the study team developed the TRS methodology and drafted the accompanying study plan. These steps were often overlapping and iterative in their execution.

- **Form a working group.** The task team guided the formation of a working group consisting of critical personnel who will be involved in the task. This group included personnel from CBP and the Border Interagency Executive Council (BIEC), which represents other government agencies heavily involved in cargo processing. The working group’s tasks included helping the study team to identify relevant data and data sources. The working group assisted the study team with identification of relevant SMEs and facilitating access to the SMEs and other sources of data. Additionally, the BIEC members served as SMEs through this phase of the study, providing advice throughout the effort and helping to shape the methodology for phase 2.

- **Determine appropriate time measures and data needs.** HSSAI researched the desired improvement effects of the ITDS, with respect to throughput and efficiency. Based on this research, the study team determined what metrics may be used to measure release times in cargo processes and what data are needed to compute these measurements. Most critical was identification of when “start” and “stop” points for the TRS should occur.

\(^{11}\) Ibid., 14.

\(^{12}\) Ibid., 18.
• **Locate and examine existing data.** In conjunction with the determination of data needed to compute release times, the study team also sought a thorough understanding of what data are currently collected by CBP and other PGAs at sea, air, and vehicle ports of entry. In particular, we sought to determine whether:
  - Data meaningful to examining the effectiveness of the ITDS are currently being collected.
  - Data currently collected are sufficient to establishing a baseline for comparison.
  - The current data collection process is repeatable and reliable.

• **Establish study governance.** To formalize their role in the study, the study team sought formal oversight by a subcommittee of the BIEC to ensure government guidance on critical assumptions and methods applied during phase 2 of the study. This approach decreases the risk of overlooking critical data sources or neglecting a significant stakeholder point of view. This steering committee was active with the study team throughout phase 1, including a critical final review of a briefing that captured the methodology proposed for phase 2. The steering committee’s service will continue through phase 2 of the TRS.

### 3.3. Assumptions and Constraints

For phase 1 of this TRS, the effort was subject to the following assumptions:

- The study team would have adequate access to critical personnel within CBP and PGAs, to learn about critical cargo-release processes and data that may be available.

- Port operations and PGA processes are defined well enough to form the basis for a measurement methodology.

- There is sufficient granularity in the data to account for differences across transportation modes and context of shipment (e.g., whether the cargo is shipped in bond).

The constraints on phase 1 included:

- Our knowledge of CBP and PGA processes is subject to the support provided by SMEs supplied by the government.

- Data that we are able to review, in order to establish the measurement methodology, will rely strongly on the data provided by the government.

For phase 1 of the TRS, the study team enjoyed excellent input from various government sources. As a result, these assumptions and constraints had little impact on the execution of phase 1. Assumptions and constraints for phase 2 will likely play an important role in interpretation of the results we are able to produce.
3.4. Developing the Study Plan for Cargo Time Release Study

Based on our findings in the first three steps, the study team developed a plan that outlines the methodology based on the following questions:

- What existing data would be used for analysis in phase 2?
- What additional data should be collected?
- What locations and sites serve to provide data samples?
- How will additional data be collected from PGAs?
- How will the data be analyzed once collected?
4. RESULTS OF PHASE 1

The results of the Phase 1 study suggest that a study using primarily automatically collected data would be feasible and preferable to a manual study similar to that recommended by the WCO. Please see appendix A for a more complete description of the steps the study team took to reach these results.

4.1. Research and Interviews

To ascertain the breadth of approaches to time reporting studies, the study team reviewed studies from other nations that have completed a TRS. Of the 20 full reports we found, 12 gave enough information to elucidate a methodology, and all 12 used some sort of sampling to bound the amount of data to be analyzed. Some of the studies looked at all entries at a specific port or set of ports, some looked at only certain types of entries across all ports, while others did some combination of the two. If a sample of ports was used, the researchers generally looked at the largest ports with the greatest percentage of the country’s imports. Most of the studies only looked at a week’s worth of data, per WCO recommendations. The chosen time period was generally in the summer or early fall, when import traffic represented normal patterns. No study looked at all entries across all ports for a given year. Table 1 represents these observations.

Table 1. Review of sample scope and duration of TRS reports done by other countries

<table>
<thead>
<tr>
<th>Sample Scope</th>
<th>#</th>
<th>Sample Duration</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some entries, some ports</td>
<td>5</td>
<td>1 week</td>
<td>8</td>
</tr>
<tr>
<td>Some entries, all ports</td>
<td>2</td>
<td>2 weeks</td>
<td>1</td>
</tr>
<tr>
<td>All entries, some ports</td>
<td>2</td>
<td>6 months</td>
<td>1</td>
</tr>
<tr>
<td>All entries, all ports</td>
<td>3</td>
<td>1 year</td>
<td>1</td>
</tr>
</tbody>
</table>

Most of the reviewed studies limited themselves to a small, representative sample of the time-release data because they used a manual data collection method. Manual collection of data was conducted through a variety of methods:

- hiring enumerators with stopwatches to shadow customs officials;
- attaching a form to the shipment, on which all actors manually enter the action taken and the time;
- relying on customs officials to accurately record times for each shipment they review.

Though the study team identified a potential approach for a manual collection study, it also examined the feasibility of collecting the same information from existing data sources. To do so, we conducted interviews with all nine PGAs identified in section 2, as well as CBP. These interviews clarified processes for importing goods into the country along with the particular role that each PGA plays at the border. The interviews also made clear the kinds of data each agency had available and their relevance to calculating an accurate time to release, given what we had learned about import processes. For CBP
and those PGAs with access to relevant data, we requested a sample data set so that we might further characterize the data available and begin to chart out how a time to release could be calculated.

4.2. Data Collected

The study team received sample or full data sets from four PGAs as well as from CBP. These data sets all included time entries for various activities of interest, along with other secondary variables for characterizing the data. In particular, we sought times, characterization of the imports affected by each PGA, whether the arrival included in-bond transit, and descriptors of the importer or broker. Appendix B describes each of these data sets in more detail. From the other five PGAs, we have received or hope to receive at least the six-digit harmonized tariff system (HTS) codes which that agency targets or regulates. When combined with CBP data on imports, following the HTS code, these data may be used to estimate the proportion of imports under the auspices of each PGA. Alternatively, we may need to use SME estimates of import volumes.

4.2.1. CBP Data

The study team has been working closely with the automated commercial environment data team to identify appropriate data sets for the TRS. The study team anticipates collecting data on all consumption types of entries other than those bound for foreign trade zones (i.e., entry types 1, 2, 3, and 7)\(^{13}\) for fiscal year 2014. For each entry, the data should include a potential start time for the time-to-release measurement (for instance, arrival time or entry submission time) as well as potential stop times (holds removed or entries released). Preliminary surveys of the data suggest that most observations have an arrival time from one source or another; those remaining few that do not will be dropped from the study. Additional categorical data for each entry will help us characterize the product(s) included in the entry, the method by which the product transited to and through the United States, and the types of delays the product encountered while entering the United States. The team also met with subject matter experts (CBP officers) at the Port of Baltimore to gather information on typical timelines for certain cargo processing activities that we do not anticipate being able to discern from the available databases. We also verified or increased our understanding of the context of some of the available data points through these discussions as well as through our own observations while at the port.

4.2.2. PGA Data

Data from PGAs supplement the data received from CBP. Time data from PGAs whose actions are required prior to release from the port of entry will be used to provide a potential alternative stop point for calculating time to release. For instance, if the last FDA action taken on an entry occurs later than all stop points from the CBP data, then the

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\(^{13}\) Entry types 1, 2, 3, and 7 refer to imports that make entry as general consumption goods, quota or visa limited goods, goods covered by antidumping or countervailing duties, and goods covered by a combination of quotas/visas and antidumping/countervailing duties, respectively.
last FDA action would be the appropriate stop point. Time data from PGAs whose actions occur after the release from the port of entry will be used as secondary start and stop points to calculate an additional delay to add to the time to release. So, for instance, a shipment that leaves the port and arrives at an FSIS inspection station after a couple of days for a day-long inspection will receive an additional day in the final time to release. Table 2 shows the data received during phase 1 and how the study team generally anticipates using this data.

Table 2. Data the study team received during TRS phase 1

<table>
<thead>
<tr>
<th>PGA</th>
<th>% of imports affected</th>
<th>Estimate time delay using:</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHS/CBP</td>
<td>100%</td>
<td>CBP data</td>
<td>Primary data source for most other PGAs as well</td>
</tr>
<tr>
<td>HHS/FDA</td>
<td>% of total entries in FDA data</td>
<td>FDA and CBP data</td>
<td>FDA final action used as stop point if later than CBP</td>
</tr>
<tr>
<td>CPSC</td>
<td>% of total entries in CPSC data</td>
<td>CPSC and CBP data</td>
<td>CPSC exam used as stop point if later than CBP</td>
</tr>
<tr>
<td>USDA/APHIS</td>
<td>APHIS HTS codes as % of total entries or estimates from SMEs</td>
<td>CBP data</td>
<td>Holds are thru CBP, no additional time data required</td>
</tr>
<tr>
<td>USDA/FSIS</td>
<td>% of total entries in FSIS data</td>
<td>FSIS and CBP data</td>
<td>FSIS custody time added to main time to release</td>
</tr>
<tr>
<td>DOI/FWS</td>
<td>% of total entries in FWS data</td>
<td>FWS and CBP data</td>
<td>FWS clearance used as stop point if later than CBP</td>
</tr>
<tr>
<td>USDA/AMS</td>
<td>AMS HTS codes as % of total entries</td>
<td>SME elicitation</td>
<td>Est. AMS custody time added to main time to release</td>
</tr>
<tr>
<td>DOC/NOAA-F</td>
<td>NOAA-F HTS codes as % of total entries</td>
<td>CBP data</td>
<td>Holds are thru CBP, no additional time data required</td>
</tr>
<tr>
<td>DOT/NHTSA</td>
<td>NHTSA HTS codes as % of total entries or estimates from SMEs</td>
<td>CBP data</td>
<td>Holds are thru CBP, no additional time data required</td>
</tr>
<tr>
<td>EPA</td>
<td>EPA HTS codes as % of total entries or estimates from SMEs</td>
<td>CBP data</td>
<td>Holds are thru CBP, unclear as yet whether additional data required</td>
</tr>
</tbody>
</table>
(This page intentionally left blank.)
5. **Findings of Phase 1: Considerations for TRS Phase 2**

We considered two primary approaches in developing the proposed methodology for phase 2. The first, a manual data collection approach, has some inherent challenges in that goods entering the United States do not necessarily complete all their processing in one location. Therefore, we found that to do a manual approach, we would have to use a method such as attaching a document to a sample of shipments and trust that those interacting with the shipment would fill it out and that having this document attached would not bias the individuals interacting with the cargo.

Our alternative approach was to use primarily historical data. This approach also has some challenges, in that the data will not allow us to separate out the times for all actions taken. Some actions will be in groups, with desired, but inseparable, break points located within. For example, in-bond travel time is not separable from inspection time.

We presented these options to the BIEC subcommittee of PGAs and CBP, with our recommendation that the analysis of a large amount of historical data would probably give a better overall result than the small manual sample. The subcommittee agreed with our recommended approach, understanding the limitations.

Since items are cleared to leave the port of entry at the level of shipments (which are a one-to-one manifest-entry pair), we intend to use shipments as our unit of observation. In calculating the time to release, our investigations recommend using shipment arrival times as the general start point and the latest of the entry release, the last hold removed, and the last PGA action as the stop point. Any additional PGA processing time for shipments after they leave the port of entry will be added to this main time to release. Appendix B discusses in more depth how we intend to calculate time to release.

As is partially evident from the above timeline, there are procedural differences for importing goods through each mode of transit, which affects the manner through which we calculate time to release for each. Consequently, the study team will examine each mode of transit separately. Appendix B discusses the differences in our anticipated approach for each.

Other differences arise with shipments for which an importer submits an entry before or after the goods arrive at the port of entry.

- For importers that submit entries following arrival, arrival time will still be used as the start point for the main time to release. However, for those shipments, an additional time will be calculated with entry submission time as an alternative start time.

- For importers that submit entries before arrival and receive clearance before arrival, the arrival time will be both the start and stop point for the main time to release. For these entries, time-to-release will be effectively zero. However, for those shipments, we also intend to track separately how long processing took
between entry submission and the typical stop point. The study team will also look into how far in advance of arrival that stop point occurred.

The study team will also report, in addition to time to release, secondary metrics to help evaluate the performance of ITDS in the future. These metrics could include the fraction of entries submitted/released prior to arrival, average delays due to insufficient documentation, or fraction of trucks turned away at the border. Appendix B discusses these methodological factors in more detail.

5.1. Limitations on Available Data

The data that CBP tracks within the automated cargo system (ACS) are insufficient to do even the simple TRS as recommended by WCO. This makes sense, as CBP designed the system to manage payment of customs duties and to abet enforcement of U.S. regulations, not to track the efficiency of border processes. Nonetheless, the current system constrains the ability of the second phase of the study to calculate an accurate time to release for many shipments. The lack of times for unloading goods and moving goods in-bond (two of the WCO’s five key elements necessary for conducting a simple TRS) especially limit the ability of the study to provide accurate estimates. The similar lack of electronic or automatically collected data at some of the PGAs will similarly constrain our efforts.

These limitations are not sufficient to make a TRS impossible using the available data. However, they will force the study team to make uncertain assumptions and provide estimates with potentially significant acknowledged inaccuracies. We have discussed these limitations with the relevant members of the BIEC, and they agreed that the limitations were not fatal to the study. That said, if CBP hopes to do more TRSs, it might be advisable to restructure the way it handles its data now, as new the single window system is rolled out, to better enable future studies.

5.2. Recommendations for Phase 2

Despite the issues described above, we recommend that the TRS proceed to phase 2 of the study and begin to calculate a time to release to serve as a baseline for future studies. This calculation should be presented with sufficient complexity to capture the multitude of different scenarios that might affect the time to release, including mode of transit, in-bond status, and the time that the importer submitted the entry.

In the process of producing the actual TRS, we also recommend that the study team visit some ports to cross-check data analyzed and selected results. There are a number of subtleties in the data we have collected thus far that our contacts at CBP and the various PGAs were uncertain about. It will likely prove useful to discuss these issues with officers who actually enter the data at the ports of entry to get a better sense of where these data came from.
APPENDIX A. RESEARCH AND DATA COLLECTION FOR PHASE 1

Introduction

The primary activities for phase 1 of the TRS task were to conduct a review of WCO literature and available TRSs from other countries, describe the import processes to understand data entries on event times, interview PGAs to understand their processes as part of the overall import process, and collect some preliminary data sets. Further characterization of the data sets received is in appendix B. The study team also considered manual data collection, but ultimately concluded that there are sufficient data already in hand to estimate the baseline time to release.

To begin research for the DHS cargo TRS, the task team reviewed open-source data to help identify data needs for phase 2. Critical data items were the start and stop times for the time-to-release measurement, which proved not to be straightforward. Identifying the problem with accurate capture of arrival time guided further review of the research materials. In particular, we examined international TRSs and reviewed the CBP import process.

International TRS Review

The starting point for reviewing time-to-release studies was a review of the WCO report that recommends how to conduct a TRS. This was combined with review of other nations’ TRS efforts, as documented in international reports (see table 3). The purpose of reviewing these reports was to identify challenges other nations faced with their TRS studies, lessons learned, and best practices to inform the execution of this TRS.

Table 3. Countries with published TRS reports

<table>
<thead>
<tr>
<th>Countries with Published TRS Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
</tr>
<tr>
<td>Bangladesh</td>
</tr>
<tr>
<td>China</td>
</tr>
<tr>
<td>Ethiopia</td>
</tr>
<tr>
<td>Fiji</td>
</tr>
</tbody>
</table>

* Full TRS report not available

The task team found that the time points measured during other countries’ TRSs were strongly dependent on the customs process in each nation. There were some broad similarities: all included arrival time (or time at which shipment was logged), as well as time of release (or time when customs process had finished). Studies frequently included several midpoints in the process and also measured the release time between each of

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these midpoints. Units of measure also varied and were typically broken down either by days and hours or days, hours, and minutes.

When reviewing how other countries’ TRSs selected ports for examination, the task team found that trade volume was a critical factor. The task team also noted differences between automated and manual data collection. For automated data collection, the task team found that many developing countries used the same software (ASYCUDA). Many nations with automatically captured information still examined only a random sample rather than using full data sets. With manual sampling, studies varied considerably because there were different stakeholders collecting information: contractors, customs officials, importers, port operators, etc., and there were differences in sample size and random sampling methods. These manual sampling methods were often supplemented by automatic methods for validation or consistency. Examining the sampling methods, the task team learned that, at least in some countries, customs officials are not always the most reliable data collectors. They may have concerns about how the study will affect employment, and this concern could impede unbiased data collection. As such, some countries use data from importers and port operators instead of customs organizations’ data.

**Lessons Learned from Country TRS Review**

Several lessons noted from other countries include:

- Soundness of data collected (whether automatic or manual) relies on sufficient training for participants to ensure that anyone recording information does so correctly (customs officers, importers, PGAs, and any involved stakeholders).

- Importer and stakeholder involvement is important, since they are part of the shipping process, essentially a government-importer nexus. Some studies hosted meetings for stakeholders to address this concern.

- A number of studies also validated the results with their stakeholders to gain additional insight.

- Importer shipment size affects processing time and process: larger cargos seem to be easier. Importer size is a critical variable to track in phase 2.

- Cargo type significantly affects the processing type and reporting.

- Consistency varies considerably across nations. Nations conduct different amounts of trade, which may significantly alter their results. There is no standard for industry reporting, so different industries or even ports may record information in varied formats. This is one advantage of using U.S. CBP data.

**Description of Import Processes**

To determine how to calculate an appropriate time to release in the context of imports to the United States, the study team had to first develop a schema for comprehending the import process. We had to identify the actors involved in importing goods to the United
States along with their interrelations with each other. We then had to arrange these actions and interactions in time to determine the time points for calculating an accurate time to release. As part of this data collection effort, we interviewed CBP officers at the Port of Baltimore (air and sea) and observed several cargo processes at the port.

The following are the result of these steps. Figure 1 outlines the major actors in the import process and the roles they play in bringing imports into the United States. Figure 2 places that process on a timeline, beginning with an importer purchasing goods from an overseas manufacturer and ending with the purchased goods reaching the importer. Table 4 serves as a companion to figure 2, representing the timeline there illustrated as a table for ease of reading. Times reported in both figure 2 and table 4 are all relative to arrival time, the start time that the WCO recommends for calculating time to release. Using these timelines, the study team outlined how to calculate the time to release in the context of each mode of transit and in-bond status, as discussed in greater depth in appendix B.

\[\text{Ibid., 10.}\]
Figure 1. The primary actors in the import process and their interactions with one another
The actors shown in Figure 1 and figure 2 include:

- **Manufacturers:** foreign entities that receive an order from the importer and produce the requested goods. The manufacturer can be the same as the exporter. If not, the manufacturer needs to ship the goods to that exporter so that the goods may be prepared for export.

- **Exporters:** actors that obtain foreign goods and arrange their export to the United States. The exporter can prepare goods for export and coordinate directly with a carrier to ship the goods, or it can hire an ocean transport intermediary to do so on its behalf. Either way, the exporter needs prior approval from CBP before the goods can be exported.

- **Ocean transport intermediaries (OTI):** actors that are contracted by an exporter to coordinate the logistics of the transport of the goods to their final destination. These actors can include, *inter alia*, freight forwarders, shippers, or cargo consolidators, with many OTIs serving multiple roles. As the name implies, OTIs primary coordinate seaborne cargo, though similar intermediaries exist for other modes of transit as well.

- **Vessel operating carriers:** actors that own the vessels that physically move the goods to the U.S. port of entry. Carriers have to submit manifests to CBP a certain time before arriving at the port and send a similar bill of lading back to the exporter that contracted with them.

- **Non-vessel operating common carriers (NVOCCs):** actors that buy space on vessels owned by other carriers and coordinate filling these spots with cargo. NVOCCs enable vessels to transit with cargo volumes closer to their capacity. In addition to the vessel carrier, NVOCCs send a separate manifest to CBP and a house bill of lading to the exporter (as opposed to the master bill sent by the vessel carrier).

- **Customs and Border Protection:** CBP protects the nation from contraband and terrorism while facilitating legitimate trade. The agency performs targeting and places holds based on manifest data submitted by carriers and releases entries submitted by the importer. A shipment must, at minimum, have its associated entry released and have no holds on its manifest before CBP will let it leave the port of entry.

- **Partner government agencies:** The PGAs pursue their own missions with respect to compliance with U.S. regulations at the border. They do so by reviewing, automatically and manually, information in manifests and entries sent to CBP and identifying shipments of interest. The PGAs can either request CBP hold these shipments or hold the shipments themselves, depending on the agency. The PGAs or CBP will then inspect the shipment to ensure it complies with U.S. regulations.

- **Brokers:** actors hired by importers to prepare and file customs entries, arrange customs payments, and represent the importer in customs matters. Brokers work
closely with CBP to resolve any issues that come up with various cargo types. All brokers must be registered with CBP for each port at which they operate.

- **Importers:** the principal actors that cause the imported goods to arrive in the United States and have the sole right to make entry for those goods. Importers can, however, hire a broker to manage most other customs matters. Importers must be cleared by CBP before their entry can be released.

The interactions between all of these actors, along with a few others like port operators, result in imported goods transiting from a foreign country, being cleared at the border, and entering into U.S. commerce. Figure 2 and table 4 show how this occurs sequentially.
Figure 2. Illustrated timeline of the import process. “A” refers to the arrival time of the cargo.
Table 4. Tabular timeline of the import process. “A” refers to the arrival time of the cargo.

<table>
<thead>
<tr>
<th>Time</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>A – 24hr – t_{transit}</td>
<td>24 hours prior to cargo leaving foreign port</td>
<td>(Sea) Carrier sends manifest to CBP. Manifest data used to assess risk.</td>
</tr>
<tr>
<td>A – t_{transit}</td>
<td>Prior to cargo leaving foreign port of lading.</td>
<td>(Sea) Based on ATS risk score, CBP makes decision to examine cargo prior to loading. All violations found during examination forwarded to foreign authorities, though cargo might be forbidden from entering U.S.</td>
</tr>
<tr>
<td>A – 4hr</td>
<td>4 hours prior to arrival at U.S. port of arrival</td>
<td>(Air) Carrier sends manifest to CBP. Manifest data used to assess risk.</td>
</tr>
<tr>
<td>A – 2hr</td>
<td>2 hours prior to arrival at U.S. port of arrival</td>
<td>(Rail) Carrier sends manifest to CBP. Manifest data used to assess risk.</td>
</tr>
<tr>
<td>A – 1hr</td>
<td>1 hour prior to arrival at U.S. port of arrival</td>
<td>(Truck) Carrier sends manifest to CBP. Manifest data used to assess risk. FAST lane-approved carriers may submit only 30 minutes prior to arrival.</td>
</tr>
<tr>
<td>A</td>
<td>Arrival at U.S. port of arrival</td>
<td>CBP makes initial selection assessment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Within 10 days, importer decides whether to make entry, seek informal release, or travel in-bond.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Certain PGAs (e.g., USDA) make hold determinations before cargo enters U.S.</td>
</tr>
<tr>
<td>Before A + t_{inbond}</td>
<td>Prior to arrival at U.S. port of entry, if traveling in-bond</td>
<td>Brokers and importers submit entries to CBP, though they have up to 10 days following arrival at port of entry to do so. If not traveling in-bond, port of entry is port of arrival.</td>
</tr>
<tr>
<td>A + t_{inbond}</td>
<td>Arrival at U.S. port of entry, if traveling in-bond</td>
<td>CBP and PGAs resolve remaining issues and release goods into commerce. CBP can begin releasing goods upon receipt of manifest in most cases, but this does not always happen. If not traveling in-bond, port of entry is port of arrival.</td>
</tr>
</tbody>
</table>

*Pre-arrival.* The customs process does not start within the United States or even at the United States border. Instead, different modes of cargo transport begin the import process at different times.

For seaborne cargo, the process starts at least 24 hours before the cargo is loaded onto the ship. At this time, the carrier sends CBP the manifest for the vessel, which lists all cargo bound for the United States and elsewhere. Based on the data CBP receives from the manifest, as well as other factors, CBP determines an automated targeting system (ATS) risk score for the cargo and makes a decision about whether to examine the cargo prior to loading. If an examination is performed, any violations found are passed along to the
relevant foreign authorities, though, depending on the nature of the cargo, the cargo can then also be barred from entering the United States at the border.

For airborne cargo, the import process begins at least four hours before the cargo is expected to arrive in the United States, when the carrier sends CBP manifest data. For rail-based cargo shipments, carriers are expected to send CBP the manifest two hours prior to expected arrival. For truck-based shipments, carriers send manifest data one hour before arrival at the U.S. port of arrival. FAST lane-approved carriers are only required to submit data 30 minutes prior to arrival. The manifest data that CBP receives is used to assess the risk associated with that cargo, a factor that helps to determine the level of screening that the cargo may receive later in the customs process. There is no prescreening at foreign ports for these types of cargo.

**Arrival.** When the cargo in question arrives at the U.S. border, CBP makes an initial assessment of whether to further examine the cargo prior to release. At the same time, within 10 days, the importer must decide whether to make entry at the port of arrival, seek informal release, or to move the cargo farther in-bond, meaning that it moves on to another port without being unloaded. Brokers and importers have up to 10 days following arrival at the eventual port of entry to submit entries to CBP if the cargo is traveling in-bond.

Before the cargo physically enters the United States, certain PGAs, such as APHIS, may make determinations about whether to hold the cargo at the first port of arrival due to potential PGA-specific rules and regulations. Other PGAs deal with regulations after the goods arrive at a port of entry.

**Post-arrival.** After the cargo formally arrives at a port of arrival, cargo may travel in-bond to another port (air, land, or sea) or directly to the port of entry. Once there (or at the port of arrival if not moving in-bond), the CBP and any relevant PGAs resolve any outstanding issues of concern. The goods then make entry and are released into U.S. commerce. In cases where there are no PGA issues, CBP will begin releasing goods upon receipt of the manifest. If the goods fall under the purview of certain PGAs (like the Food Safety Inspection Service), then the relevant PGA may conduct further investigations to ensure compliance with U.S. law. In those cases, the PGAs take charge of the goods and their release into commerce.

**Process Flow Development**

Based on this information, and a review of the CBP Cargo Business Process Manual, the task team put together an initial representation of the cargo process flow by transportation mode. These initial representations helped guide future breakdowns of the cargo process and are shown in Figure 3 through Figure 6.
Figure 3. Truck cargo process diagram
Figure 4. Rail cargo process diagram
Air Cargo Processing and Release

- **Time**: A = Receipt
  - Air cargo loaded on a plane bound for the US

- **Carrier**
  - Submits refrigerated items to ACS
  - Flies to airport

- **Customs Brokerage (CBP)**
  - Reviews air manifests, IATA, and ECTAD data
  - Creates risk score

- **Importers**
  - Conducts pre-shipping inspection

- **Personal Handling of Cargo**
  - Inspects/evaluates security

- **Release Cargo**

- **Points of Entry (POEs)**
  - Issues remained/hold

- **Customs Brokerage (CBP)**
  - Issues remained/hold

- **Importers**
  - Issues remained/hold

**Figure 5. Air cargo process diagram**
Figure 6. Sea cargo process diagram

**PGA Interviews**

There are 47 agencies participating in the implementation of the ITDS. Appendix C gives brief descriptions of each of these agencies. The government directed the team to
consider nine of these agencies as significant to the TRS.\textsuperscript{16} The study team reached out to contacts for each agency supplied by CBP to learn more about PGA processes and available data.

Table 5 presents data on the type and locations of PGA activities related to cargo inspections and release based on our interviews.

### Table 5. PGA inspection and related activities

<table>
<thead>
<tr>
<th>PGA</th>
<th>Inspections performed by</th>
<th>At CTAC?</th>
<th>Pre-arrival targeting?</th>
<th>Port presence?</th>
<th>Hold authority</th>
<th>Maintain time data separate from CBP?</th>
<th>Post-release processing?</th>
</tr>
</thead>
<tbody>
<tr>
<td>USDA/AMS</td>
<td>Federal/state inspectors (at inspection stations)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>USDA/APHIS</td>
<td>APHIS (live animals/ propagated material)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>USDA/FSIS</td>
<td>FSIS (at inspection stations)</td>
<td>Yes</td>
<td>Yes</td>
<td>Partial</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>DOC/NOAA-F</td>
<td>CBP (initial inspection)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Can request</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>DOI/FWS</td>
<td>FWS</td>
<td>Yes</td>
<td>No</td>
<td>Partial</td>
<td>Can request</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>HHS/FDA</td>
<td>FDA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>DOT/NHTSA</td>
<td>CBP</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>CPSC</td>
<td>CPSC (where available)</td>
<td>Yes</td>
<td>Yes</td>
<td>Partial</td>
<td>Can request</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>EPA</td>
<td>CBP</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

**Consideration of Manual Data Collection**

In parallel with seeking data from CBP and the relevant PGAs, the study team considered a manual data collection experiment in the event that data from CBP were not available or usable. This possibility would involve collecting data relevant to time release of cargo directly from some representative ports. The results of phase 1 suggest that a manual study is not the best available approach for phase 2.

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\textsuperscript{16} Keith Devereaux, private communication, as e-mail to Jennifer Jacobs (copying DHS stakeholders who critically defined the scope of the effort), March 19, 2015.
The task team considered the top ports by traffic across all three domains (sea, air, land), defined by cargo volume, weight, and value. The team then performed a simple ranking exercise to determine the most trafficked ports across each dimension and adjusted the land domain slightly to ensure geographic diversity. Additional seaports were added to account for greater traffic by sea relative to other domains. The initial proposed set of ports to sample (based on traffic) are in table 6.

**Table 6. Prospective ports for manual data collection**

<table>
<thead>
<tr>
<th>Airports</th>
<th>Seaports</th>
<th>Land Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>JFK International Airport, NY</td>
<td>Los Angeles, CA</td>
<td>Laredo, TX</td>
</tr>
<tr>
<td>Chicago O’Hare International Airport, IL</td>
<td>New York/New Jersey</td>
<td>Detroit, MI</td>
</tr>
<tr>
<td>Los Angeles International Airport, CA</td>
<td>Houston, TX</td>
<td>Buffalo–Niagara Falls, NY</td>
</tr>
<tr>
<td>Anchorage, AK</td>
<td>Long Beach, CA</td>
<td>Otay Mesa Station, CA</td>
</tr>
<tr>
<td>Miami International Airport, FL</td>
<td>Savannah, GA</td>
<td>Blaine, WA</td>
</tr>
<tr>
<td></td>
<td>Norfolk, VA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Port Arthur, TX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Charleston, SC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Philadelphia, PA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Baltimore, MD</td>
<td></td>
</tr>
</tbody>
</table>

The task team also had a list of considerations for sample port selection that included proximity to the study team’s offices, proximity to other ports (build land/air/sea clusters); ownership (public, private, or public-private partnership); ownership across ports; stakeholder preferences; port-size variety and cargo-type variety. These considerations shaped viability of the approach and would be the basis for estimating resources to collect data manually.

In examining sample time selection, the task team found that a sample taken in late spring or early summer would align closest with yearly average traffic (see Figure 7), though this may differ for individual ports.
In thinking about data collection, the task team noted the approach would be dependent on the CBP data model, even for manual collection. If separate steps of the process are recorded centrally, the customs or port officials with access to the data could record the times manually. Alternatively, surveys could be sent to importers/brokers, but they could err in recording intervening steps. Another possibility was to attach the survey directly to lodgments for users to note the actions and the time, but that also raised potential data reliability issues. When considering the sampling method, we decided that randomization should be done by the study team, not customs, so that officials would not know which surveys would actually be used in the sample. Sample size used in international TRS varied across the board, though all use more than 400 observations. If we wanted to stratify our data or produce more statistically compelling results, a much larger sample size (at minimum, more than 1,000 observations) would be necessary. Ultimately, in building the sample, strong potential categories to consider would be cargo size, importer size, and cargo type.
To execute this manual sample data collection, we developed a mock questionnaire and importer attachment sheet, subject to two considerations. The first was geographic diversity and procedural variations across ports, which would make task management difficult for a smaller study team, independent of the data collection approach. To execute properly, the study team would require coordination with and collaboration from ports well in advance of study initiation. The second was coordinating the randomization of the sample before arrival at the port. Notably, there would be more complications for air, rail, and truck due to the small amount of time between manifest submission and arrival, and this might require a simpler approach (e.g., randomly measuring every fifth cargo entry).
APPENDIX B. CHARACTERIZING DATA RECEIVED

The WCO suggests that a TRS capture the “time from the arrival of the goods at the port/airport/land border until their release to the importer or to a third party on their behalf.” In addition, this study intends to establish a baseline time to release that can serve as a comparison for a future study of the efficiency of the new “single window” ITDS. As the intent of the single window is to unify U.S. government processes for regulating imports into a single release message, the baseline study has to incorporate the entire government time for the release of cargo into commerce. A number of PGAs require the importer to present goods to them following entry release by CBP before these goods can be released into commerce. Therefore, an accurate time to release should range from the arrival of cargo at the border to the completion of all CBP and PGA activities required for release into customs, minus delays from wholly nongovernmental actions.

The primary measure of time to release will be the difference between the arrival of cargo at a port and the release of the associated entry and removal of any holds by CBP. Most PGAs operate through CBP or have their clearance as a requirement of CBP entry release or removal of CBP holds. Therefore, data collected by CBP recording the actions of its officials should generally suffice for calculating times to release. For goods transiting in-bond across the country to an inland port of entry, some PGAs, such as APHIS, require CBP intervention at the port of arrival while others, such as EPA, require CBP action at the port of entry. Any calculation of time to release would have to account for processes at both ports.

The PGAs with warrant to act independently of CBP complicate this picture, and their actions will need to be accounted for through independent data collection. A few, such as the FDA, have their own capacity to place holds on goods independent of CBP. Additionally, FSIS and AMS both require importers to present specific types of goods to their inspectors for clearance following CBP release but prior to entry into commerce. Prior to CBP releasing entries on those types of goods, these PGAs simply require that the filer (either the importer or the broker) present documentation proving that the PGA is aware that the goods are arriving in the United States. Representatives of these PGAs expressed varying levels of confidence that CBP regularly enforces this requirement. Therefore, the study team needed to collect data from these PGAs as well as from CBP to ensure that the team calculated an accurate baseline time to release.

Even with these data from CBP and the PGAs, there are unavoidable complications that affect the precision of any estimates gleaned from them. Data in many fields are entered manually, often hours after the action recorded took place. Additionally, some fields, in both CBP and PGA data, record only dates, rather than dates and times, which necessarily blunts the precision of estimates that rely on these fields. Further, as will be discussed later, different modes of transit entail differing types of delays, which may not be reflected in data sets built to be mode-agnostic. All of these factors will make any time-to-release estimate less precise and could additionally bias those estimates in one

17 World Customs Organization, Guide to Measure the Time Required for the Release of Goods, 10
direction or another. The study team will endeavor to point out these complications and control for them where possible.

**Data Sources**

Given the above constraints, the study team aims to collect data primarily from CBP, with supplemental data from PGAs where necessary and available. The study will use a shipment (which is the combination of an entry with a valid bill) as the primary unit of observation, but records from these disparate sources will be combined using entry number as the common key. Many of the PGAs consider their data at a level lower than the entry, which will require some aggregation or careful parsing of the data.

For the full study, we will consider data from the entirety of fiscal year 2014 (1 October 2013 to 30 September 2014). The WCO recommends that time report studies should generally use at least seven days of data but “if the study will be conducted in an automated environment, the period could be significantly longer.”\(^{18}\) A full year of data allows for the best control for seasonal fluctuations in trade and, as our study will involve primarily automatically collected data, would be entirely feasible. At this stage, some of the agencies the study team has worked with have only provided a select sliver of sample data, but all have agreed to provide a full sample of FY14 data for phase 2 of the study.

**Customs and Border Protection**

At present, the study team is working in cooperation with CBP to determine the exact data we will need to complete phase 2 of the study. However, we do know that, for shipments with no PGA involvement with the cargo outside of CBP custody (a significant majority of shipments), these data will be our only source of information. Additionally, for most records, CBP data will serve as the primary source for start times (combination of shipment arrival times and entry submission times) and stop times (combination of entry release time and hold release time). CBP data will also serve as the primary source for secondary information for characterizing cargo. These data will include such items as the size of importer, HTS code, flags for perishable goods/hazardous materials, or the type of exam performed (if any). These data will allow the study team to ensure that we have a representative sample, will serve as the basis of various sub-sample analyses, and will help future studies determine to what extent their conclusions are comparable to our own. Finally, the CBP data will provide the information on mode of transit and in-bond status, which will serve as the initial vectors along which the study team will calculate the time to release.

**Food and Drug Administration**

The study team has received a full FY14 sample from FDA. The fields for this data set include entry numbers, product code, mode of transit, port of entry, entry date, date of final FDA action, and nature of final FDA action. Note that although the sample includes more than 30 million records, it does not account for more than 30 million unique entries.

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\(^{18}\) Ibid., 16.
This is because the FDA tracks its data at a sub-entry level, though the recorded final actions and times appear to be the same for those records with the same entry number. Instead, it seems as if the division at the sub-entry level is to differentiate entries with multiple product codes. Therefore, entry number can be used to link records in the FDA data to those in the CBP data, with mode of transit and entry port codes used to confirm the link. It is also useful to note that the final action times for the FDA are solely in terms of dates, rather than dates and times. This is of interest because, for shipments with entry numbers in the FDA data set, final FDA action could serve as another potential stop point, provided the final FDA action comes later than the related entry release and hold overrides from the CBP data. The remainder of the fields in the FDA data set can be used to supplement the CBP data in characterizing our sample.

**Consumer Product Safety Commission**

Similar to the FDA, the study team has received a full FY14 sample from CPSC. The fields for this data set include entry number, exam date, arrival date, requested action, and targeting code from CPSC’s targeting system. The entry numbers in the CPSC data set are all unique, so they can readily be used to link to the CBP data. The arrival times from the CPSC sample are frequently blank and are of uncertain provenance, so the study team will likely use the arrival times as reported in the CBP data. The arrival times, along with exam times, are also reported as dates as opposed to dates and times. This is of interest because, as with the FDA data, exam times will be used as an alternative stop point for shipments in the CPSC data set if the exams occurred after entry release and all holds were removed. In some cases, goods receive a provisional release from CBP, and CPSC instead inspects the goods at the importer’s warehouse off-site from the port. Because we only have a date for the inspection, we cannot parse out when these goods left the port and when CPSC returned to begin the inspection process. Therefore, our estimates will include the trade’s transit times and will more accurately reflect the performance of the trade-government system. Information on targeting and requested CBP action will complement the information from CBP data in further characterizing our sample.

**Fish and Wildlife Service**

The study team received one week’s worth of initial sample data (from a week in late January 2015) from FWS to confirm the utility of their data. FWS intends to send a full data set of FY14 data to be used in the main study. The fields in this sample data set include entry number, date and time cargo was presented to FWS, date and time cargo was cleared by FWS, and filer’s predicted arrival date. Because FWS has no linkage to CBP systems, entry numbers were those reported by the filer rather than by CBP. As such, 8 percent of the entry numbers were completely indecipherable, and some could be simply inaccurate. This, in addition to some duplicative entry numbers, will complicate the linkage of FWS data to CBP data but will likely only truncate the sample of usable FWS data rather than proscribe its use entirely. As importers must present some goods to FWS for inspection and clearance before entering into commerce, the reported clearance times will be used as an alternative stop point if they are later than all CBP actions.
Food Safety Inspection Service

The study team received initial sample data from FSIS covering the period from 1 January to 1 March 2015 to confirm the utility of their data. As with FWS, FSIS still intends to send a full data set of FY14 data to be used in the main study. The fields in this sample data set include entry number, HTS code, lot number and weight, date and time that a lot was presented, type of inspection and completion date, and final disposition of lot. “Lot” refers to the unit of observation used by FSIS, which is a subunit of shipment. It appears that lots are mostly used to determine the inspections to be performed and that all lots with the same entry number have the same presentation time and clearance dates. However, the study team will check to ensure that this pattern holds in the full sample to make sure this data can be appropriately linked to CBP data during the study.

Additionally, though importer presentation has a date and time associated with it, the completion of inspection is recorded only as a date. This is of interest because importers must present some goods to FSIS for inspection and clearance following CBP release but before entering into commerce. Thus, the study team will find the difference between the last inspection date (as most lots have more than one inspection) and the presentation date, and add that time to the calculated time to release from CBP data for the relevant shipments.

Agricultural Marketing Service

The study team has received a list of HTS codes relevant to AMS. AMS does not keep any centrally stored data on the goods it inspects or when those inspections take place. This is of interest to the study because importers must present some goods to AMS for inspection and clearance following CBP release but before entering into commerce. To estimate the added delay this process causes, the study team intends to reach out to SMEs from AMS and its deputized state offices to estimate the average time that inspections delay goods from entering into commerce. These estimates will be added to the calculated time to release from CBP data for those shipments with HTS codes within AMS’s scope. The study team is currently working with AMS to solidify the list of SMEs with whom the study team will speak. The method for aggregating these estimates (e.g., by location or by product type) will depend on the SMEs the study team talks with and the estimates they are able to provide.

Data Calculations

The WCO suggests that “Customs administrations undertaking the Time Release Study for the first time are recommended to conduct a simplified study by just capturing the key elements in the clearance process.”\(^\text{19}\) The five key data points that the organization considers crucial are times for the “arrival of goods, start of unloading, start of placing goods in temporary storage, registration of Goods Declaration, release of goods.”\(^\text{20}\) This

\(^{19}\) Ibid., 12.

\(^{20}\) Ibid., 38.
compares to the more than 16 time points that the WCO recommends collecting on for a full TRS.\textsuperscript{21}

However, the data sources enumerated above do not contain enough information to satisfy the WCO’s simplified study, so some adjustments and assumptions must be made by the study team. For instance, for the primary time to release, we assume the start time for calculating time to release to be arrival times across all shipments, including for those shipments where the importer submits its entry after release. This delay, while not the fault of the government, is still a delay because of government policies. Importers that submit insufficient entry documentation have delays that count toward time to release, as should those who submit no documents at all. Further, these sort of delays are the exact sort that will be most affected by ITDS, so they are especially worthwhile for us to capture. That said, we will also separately calculate the time from entry submission to release to track how long these shipments take to clear following entry submission. Additionally, delays generated due to filer errors (e.g., for late or incomplete documentation) will be secondarily reported separately from those due to government action (e.g., for compliance assurance).

As stated earlier, the stop time will be the latest of entry release time, hold removal time, and the time of the last pre-release PGA action. Any post-release PGA activities required for entry into commerce will be appended to this primary time-to-release calculation.

In addition, some entries are submitted and cleared prior to arrival. In theory, these shipments, which represent the bulk of all shipments entering the United States, have no delay due to government processes. If we had access to the data points recommended by the WCO, we could calculate delays due to such trade activities as unloading or in-bond transit. However, for these “pre-cleared” shipments, the last data point we have is the arrival time. Therefore, for the main calculation, we will use arrival time as both the start and stop point, making the calculated time to release zero. However, our discussions with stakeholders suggest that the trade and the government would also be interested in some additional time metrics for these shipments. For the trade, it is useful to know how far in advance of arrival these shipments clear, so we will report the difference between the arrival time and the traditional stop point. For the government, it is useful to know how long it takes for these shipments to be processed, so we will also report the difference between the entry submission time and the traditional stop point.

Another attempt to simplify the data will be the calculation of eight separate times to release by mode of transit and in-bond status. This is to accommodate procedural differences between each of the modes of transit and between direct and in-bond shipments. The insufficiency of available data affects each of these differently, and each may thus require different accommodations. These separate times to release can be aggregated up to an overall average time to release, though, given the caveats for each section, this may not be recommended.

\textsuperscript{21} Ibid., 40.
The following sections will discuss how time to release will be calculated by mode of transit and for in-bond shipments and the complications that could arise with our approach.

**Seaborne Cargo**

The bulk of imports come into the country through seaports, but the peculiarities of the data available for sea cargo will require the study team to make adaptations to the generic approach for calculating a time to release. For each of these observations, the study team will likely need to make important study assumptions, then analyze (to the extent possible) the validity of the assumptions.

- Actual arrival dates and times directly tied to entry numbers in CBP’s database show significant variation. Shipments arriving at the same seaport on the same vessel can have arrival times almost a month apart. This leads us to doubt the reliability of shipment-level arrival times for the sea domain. Instead, we will use vessel arrival times from the Lloyd’s database, reported for insurance purposes, which can be linked to entry number via vessel name in manifest data in CBP’s database.

- A vessel, along with its entrained containers, can be legally arrived at any point in the lengthy arrival process, from the moment the vessel reaches the breakwater to the time the first container leaves the vessel. This gives a window of potentially more than 12 hours in which the shipper can declare a vessel arrived. Additionally, ships can stay several days at anchor before shifting to dock. This makes the vessel arrival times unreliable to use as start points. One could assume that all the variation in declared arrival times washes out in aggregation, though it might be more defensible to argue that only arrival dates are of use in sea-bound cargo.

- Bulk, break-bulk, and roll-on/roll-off cargo are quite different from containerized sea cargo. They are rarely delayed by CBP, can have different processes for resolution of holds, and often are intentionally delayed by actions of the importer (as these goods are not very time sensitive). As such, it makes sense that these cargo types should have their time to release measured separately from the other types of sea cargo, if at all.

- Unloading times, which include all times between when the vessel has officially arrived and the cargo can be processed by CBP, are unknown and potentially much longer than a single day for large ships. The Port of Long Beach, one of the busiest in the United States, claims to be able to unload an 8,000 TEU ship in about three days.\(^2\) PORT OF LONG BEACH, Cargo Movement in Focus, 2008. Available at http://www.polb.com/civica/filebank/blobdload.asp?BlobID=3512. Accessed 5 May 2015. Presumably, smaller ports could take longer. In addition to unloading time, there can be delays at the port following unloading as cargo

\(^{22}\) CBP felt that this time estimate might be optimistic in some cases.

transits from a terminal to a container examination station. As stated above, the WCO sees times for the start and stop of unloading as a key element for calculating time to release. Unfortunately, neither CBP nor any of the PGAs collects unloading times for sea cargo. The lack of these data points will skew the estimated time to release higher than the true value. This lack will also make it impossible to disambiguate the processing time from the unloading time for cargo that requires some delay at the port. We could directly estimate unloading times if we had times for when the goods became available to the importer (another key WCO data point). Unfortunately, this is not tracked either.

Resolution: Based on discussions with stakeholders, we will include unloading times in sea cargo time to release with the acknowledgment that this will mean overstating the true time to release. These times will instead represent the results of the trade-government system in releasing goods. If possible, we will also attempt to estimate unloading time using vessel container load (in TEUs) as a variable to correlate against, which could improve the accuracy of our estimates but adds more complexity and potentially additional bias into our estimates. These results will be reported separately from the main result.

**Airborne Cargo**

These shipments can roughly track with the generic approach to calculating time to release. Start times will still be the shipment’s actual arrival times recorded in ACS and stop time the latest of the standard collection of data points. Some potential complications include:

- Ports of arrival and ports of unlading can be different for airborne cargo, which can become important for cargo that must be stopped at the border. Because of this, there may be delays at the border that may come prior to the recorded arrival time.

- The sending of release and hold messages to a carrier is dependent on CBP’s receipt of a flight departure message (FDM) from the carrier, which is optional. For carriers that do not send a FDM, release and hold messages are sent to the carrier when the aircraft arrives at its port of entry. Additionally, through the permit to proceed process, foreign-originating aircraft can make unscheduled stops at other U.S. airports without offloading cargo. These stops can significantly vary the time in between sending the FDM and the aircraft’s arrival at the port of entry. All of these factors can vary the distance between cargo release and aircraft arrival, especially for imports released prior to arrival. These argue against including the magnitude of pre-arrival release times in calculated times to release for airborne cargo.

**Truck Cargo**

As with airborne cargo, these shipments will roughly track with the generic approach to calculating time to release. The only complication is that truck cargo with insufficient
documentation can be turned around at the border rather than held at the port, delays that the data might not capture. We can try to control for this issue by paying attention to the final resolution for the shipment in the data.

**Rail Cargo**

Rail cargo offers its own complications different from the other three modes of transit. Though the start and stop times will likely be the same as with airborne and truck cargo, the recorded times to release will likely remain unreliable. This is because rail cargo of interest is not directly stopped at the border like other types of cargo. Instead, any cars containing cargo that is flagged as requiring additional processing must be delinked from the full train at a nearby rail yard and wait there until CBP can bring an officer up to the rail yard to deal with the cargo. Times for trains transiting to nearest rail yard, delinking flagged cars, and CBP or other PGA officers arriving at the rail yard to deal with the flagged cars are all unknown. This lack of data makes it difficult to parse out the delays due directly to government processes. It should also be noted that the delay for delinking flagged cars affects all cars in a train, not just the flagged ones, an effect that is similarly difficult to measure reliably. As the details of these issues, like the rail yard at which the cars are delinked, are also not recorded, it is difficult to estimate the delays indirectly as well.

- **Resolution:** Based on discussions with stakeholders, we will not attempt to account for issues involved with delinking cars from trains and waiting for an officer to arrive at the rail yard, with the acknowledgment that this will mean overstating the true time to release.

**In-bond Shipments**

The above discussions referred only to cargo that makes entry upon arriving at the border; cargo that moves in-bond before making entry at another port adds another layer of complication to the calculations. The delays from in-bond transit times can be quite lengthy, especially if the cargo is transiting across the country or sits in a warehouse for a portion of the time, and these times are entirely dependent on importer decisions. WCO suggests that customs officials track these times in an ideal TRS and excise them from the reported time to release. CBP does track in-bond departure times (from the port of arrival) and in-bond arrival times (at the port of entry), but these are tracked by in-bond number, which has no direct linkage with entry number. Instead, in-bond numbers are linked to bills, not entries, and it is impossible to tell which entries on a bill correspond to which in-bond number, especially since individual bills can have up to 30 in-bond numbers associated with them. Additionally, in-bond arrivals and departure dates and times are very inconsistent per bill, even for those in-bonds that are going to the same port of entry. Thus the study team does not anticipate sorting out in-bond times per entry.

- **Resolution:** Based on discussions with stakeholders, we will include in-bond times in estimated time to release, with the acknowledgment that this will mean

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24 Ibid., 40.
overstating the true time to release. These times will instead represent the results of the trade-government system in releasing goods. If possible, we will also attempt to estimate in-bond times using dummy variables for port-port pairs (along with a general dummy for in-bond entries for those shipments that go in-bond to a warehouse located on site at a port), which could improve the accuracy of our estimates but adds more complexity and potentially additional bias into our estimates. These results will be reported separately from the main result.

Rail cargo offers an additional complication to in-bond transit. As in-bond rail cargo transits across the country, the carrier can deposit flagged cars at any and multiple rail yards prior to the port of entry, each to be visited and attended to separately by CBP. None of these times and delays can be recorded. As most rail cargo travels in-bond, this is an important issue to try to resolve.

Secondary Metrics

In addition to time to release, there are other measures that can be used to estimate the effect of ITDS that might be more suitable than time to release, including:

- fraction of entries that are not held up by the government following arrival;
- fraction of cargo with entries submitted prior to arrival;
- fraction of carriers turned away at the border due to insufficient documentation;
- time spent in government delays that could be expected to be affected by ITDS (e.g., entries not released due to insufficient documents).

The study team will include some of these metrics, depending on data received, in addition to the time to release for future studies to measure the efficiency of the new single window system.
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## Appendix C. Partner Government Agencies

<table>
<thead>
<tr>
<th>Department</th>
<th>Acronym</th>
<th>Agency name</th>
<th>Mission</th>
<th>Role in imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>AMS</td>
<td>Agricultural Marketing Service</td>
<td>Facilitates the efficient and fair marketing of U.S. agriculture products, including through voluntary auditing, accreditation, and grading programs. Offers free price information, protects IP of novel plant breeds (non-GMO), and buys surplus commodities from farmers for school lunches.</td>
<td>Certifies that certain non-meat agricultural imports (like fruits, vegetables, nuts, and dairy products) adhere to domestic food quality standards, ensures country of origin labelling on US agriculture imports, inspects shell egg imports to ensure they meet domestic standards, regulates seed imports, licenses dealers of fresh produce.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>APHIS</td>
<td>Animal and Plant Health Inspection Service</td>
<td>Protects and promotes U.S. agriculture health by combatting invasive species, administering phytosanitary standards, regulating GMOs, and ensuring domestic and wildlife welfare.</td>
<td>Inspects imports for invasive agricultural and forestry pests and weeds, regulates the imports of certain live animals and animal products, control the imports of GMOs from groups that can be plant pests, and certify the phytosanitary status of imported plants and plant products.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>FAS</td>
<td>Foreign Agricultural Service</td>
<td>Operates principally in foreign countries to administer USDA food aid programs (e.g., Food for Progress) and facilitate the export of American food products abroad.</td>
<td>Manages import licensing of foreign dairy producers and administers the tariff rate quotas on sugar producers.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>FSIS</td>
<td>Food Safety and Inspection Service</td>
<td>Inspects meat, poultry, and egg products to ensure that they are safe for human consumption, humanely slaughtered, and properly labelled/packaged.</td>
<td>Ensures the safety, wholesomeness, and proper labeling/packaging of imported meat, poultry, and egg products (except for personal use), inspects shell egg packaging for refrigeration warnings and guarantees that imported shell eggs are transported under refrigeration.</td>
</tr>
<tr>
<td>Agriculture</td>
<td>GIPSA</td>
<td>Grain Inspection, Packers &amp; Stockyards Administration</td>
<td>Facilitates the marketing of certain livestock, poultry, meat, cereal, oilseed, and related agriculture products and promotes fair and competitive trading practices.</td>
<td>Ensures the quality and health of U.S. grain exports with respect to the import standards of other countries and performs grain sample exchanges with trade partners.</td>
</tr>
<tr>
<td>Commerce</td>
<td>BIS</td>
<td>Bureau of Industry and Security</td>
<td>Administers export controls and treaty compliance with respect to U.S. commercial exports.</td>
<td>Ensures that U.S. firms do not export sensitive technology and cooperates with foreign countries to promote similar export controls.</td>
</tr>
<tr>
<td>Commerce</td>
<td>Census</td>
<td>U.S. Census Bureau</td>
<td>Conducts the U.S. Census every 10 years, as well as a multitude of other censuses and surveys.</td>
<td>Collects aggregate export and import trade statistics from CBP and BIS systems.</td>
</tr>
<tr>
<td>Organization</td>
<td>Agency</td>
<td>Description</td>
<td>Functions</td>
<td></td>
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<tr>
<td>Commerce</td>
<td>E&amp;C</td>
<td>Enforcement and Compliance</td>
<td>Enforces U.S. antidumping and countervailing duties, ensures compliance with trade agreements, administers foreign trade zone program, and assists U.S. exporters who have been adversely affected by foreign unfair trade practices.</td>
<td></td>
</tr>
<tr>
<td>Commerce</td>
<td>FTZB</td>
<td>Foreign Trade Zones Board</td>
<td>The branch of E&amp;C (above) that manages the FTZ program.</td>
<td></td>
</tr>
<tr>
<td>Commerce</td>
<td>NOAA-F</td>
<td>NOAA Fisheries Service</td>
<td>Stewards the nation's ocean resources and their habitat and enforces the Endangered Species Act for marine species as well as the Marine Mammal Protection Act, administers fisheries catch limits, regulates seafood safety, combats invasive marine species in U.S. waters, and coordinates with foreign governments for fisheries protection.</td>
<td></td>
</tr>
<tr>
<td>Commerce</td>
<td>OTEXA</td>
<td>Office of Textiles and Apparel</td>
<td>Oversees programs and strategies to improve the domestic and international competitiveness of U.S. textiles, apparel, consumer goods, metals and mining forest products, and chemicals and plastics manufacturing sectors and industries.</td>
<td></td>
</tr>
<tr>
<td>Defense</td>
<td>DCMA</td>
<td>Defense Contracts Management Agency</td>
<td>Works directly with Defense suppliers to help ensure that DoD, federal, and allied government supplies and services are delivered on time, at projected cost, and meet all performance requirements.</td>
<td></td>
</tr>
<tr>
<td>Defense</td>
<td>USACE</td>
<td>Army Corps of Engineers</td>
<td>Engineers locks, dams, waterways, and flood protection infrastructure, as well as design and constructs facilities for the U.S. armed forces, along with other military installations.</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>EIA</td>
<td>Energy Information Administration</td>
<td>Compiles energy consumption and pricing data and produce outlooks for the domestic and international energy markets.</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>OFE</td>
<td>Office of Fossil Energy</td>
<td>Manages U.S. petroleum and other fossil fuel reserves, funds research into improvements to fossil fuel use and extraction (e.g., liquid coal) as well as into carbon sequestration efforts.</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>OGC</td>
<td>Office of General Counsel</td>
<td>Charged by the Secretary of Energy with the authority to determine the department’s authoritative position on any question of law and to provide legal advice, counsel, and support to the secretary, the deputy secretary, and program offices throughout DOE.</td>
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</table>

Administers FTZ program (through which imports can avoid making entry until after being shipped from the FTZ), provides licensing for steel importers, investigates antidumping/countervailing duty claims against importers, and aids CBP in pursuing fraud and duty evasion cases.

Regulates imports of live marine animals, including marine mammals, and seafood products to ensure food safety, animal welfare, humane/sustainable fishing practices, and protection against invasive species.

Helps regulate tariffs on imports of textiles and similar commodities as well as collect import data on such commodities.

Facilitates imports for militarily necessary material.

Involved in dredging harbors and maintaining ports and thus coordinate closely with seaport operators.

Collect data on energy imports and exports.

Authorizes importers/exporters of liquefied natural gas.

Assists the department in enforcing regulations concerning energy or water conservation standards on certain imports.
<table>
<thead>
<tr>
<th><strong>Health and Human Services</strong></th>
<th>CDC</th>
<th>Centers for Disease Control and Prevention</th>
<th>Protects America from health, safety, and security threats, both foreign and in the United States, by fighting disease and supporting communities and citizens to do the same.</th>
<th>Regulates the importation of infectious biological agents, infectious substances, and vectors of human disease into the United States by issuing import permits to importers with sufficient safety measures to safely handle these materials.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health and Human Services</strong></td>
<td>FDA</td>
<td>Food and Drug Administration</td>
<td>Assures the safety, efficacy and security of human and veterinary drugs, biological products, medical devices, food, cosmetics, and products that emit radiation; helps speed innovations that make medicines more effective, safer, and more affordable; regulates the manufacturing, marketing and distribution of tobacco products; ensures the security of the American food supply</td>
<td>Requires prior notice of importation for all food, drugs, biologics, cosmetics, medical devices, and electronic products that emit radiation, (with the exception of most meat and poultry), assesses all of these imports for potential safety concerns, and examines all potentially problematic imports for which they receive prior notice. Also manages a registry of foreign food facilities that import to the United States.</td>
</tr>
<tr>
<td><strong>Homeland Security</strong></td>
<td>ICE</td>
<td>Immigration and Customs Enforcement</td>
<td>Enforces federal laws governing border control, customs, trade and immigration.</td>
<td>Assists CBP in monitoring and preventing prohibited imports from entering the country, especially illegal drugs and trafficked persons, and with enforcing tariffs and other customs duties.</td>
</tr>
<tr>
<td><strong>Homeland Security</strong></td>
<td>TSA</td>
<td>Transportation Security Administration</td>
<td>Protects the nation's transportation systems to ensure freedom of movement for people and commerce.</td>
<td>Facilitate port security and operations (e.g., by administering the TWIC program) and coordinate passenger and freight arrivals with CBP at international airports.</td>
</tr>
<tr>
<td><strong>Homeland Security</strong></td>
<td>USCG</td>
<td>U.S. Coast Guard</td>
<td>Protects the maritime economy and the environment, defends the country’s maritime borders, and saves those in peril in U.S. waters.</td>
<td>Secures seaports and adjacent waterways to facilitate smooth transit of seaborne imports, regulates vessel and terminal standards for incoming cargo-bearing vessels, works with CBP and ICE in indicting illegal imports in U.S. waters, administers fund for remediating oil spills funded by tax on oil imports,</td>
</tr>
<tr>
<td><strong>Interior</strong></td>
<td>FWS</td>
<td>Fish and Wildlife Service</td>
<td>Works with others to conserve, protect and enhance fish, wildlife, plants, and their habitats, assists in the development and application of an environmental stewardship ethics, and guides the conservation, development, and management of the nation's fish and wildlife resources.</td>
<td>Ensures that live animals entering the United States are not members of protected species and that any goods entering the United States made from animal products (e.g. leather watch straps) were not produced from parts of a protected species.</td>
</tr>
<tr>
<td><strong>Justice</strong></td>
<td><strong>ATF</strong></td>
<td>Bureau of Alcohol, Tobacco, Firearms and Explosives</td>
<td>Protects communities from violent criminals, criminal organizations, the illegal use and trafficking of firearms, the illegal use and storage of explosives, acts of arson and bombings, acts of terrorism, and the illegal diversion of alcohol and tobacco products.</td>
<td>Enforces prohibitions on the importation of certain firearms, alcohol, tobacco products, and explosives, licenses importers of firearms, explosives, and munitions and provides permits for the import of such goods, and requires all parties that ship or purchase cigarettes and smokeless tobacco across state lines or from other countries to register with the bureau.</td>
</tr>
<tr>
<td><strong>Justice</strong></td>
<td><strong>DEA</strong></td>
<td>Drug Enforcement Administration</td>
<td>Enforces controlled substances laws and regulations of the United States; brings to the criminal and civil justice system those organizations and principal members of organizations involved in the growing, manufacture, or distribution of controlled substances appearing in or destined for illicit traffic in the United States; and recommends and supports non-enforcement programs aimed at reducing the availability of illicit controlled substances on the domestic and international markets.</td>
<td>Assists CBP in preventing controlled substance imports from entering the United States illegally, licenses importers of controlled substances, who can declare such substances when making entry and request permits to bring the substances into the United States.</td>
</tr>
<tr>
<td><strong>Labor</strong></td>
<td><strong>BLS</strong></td>
<td>Bureau of Labor Statistics</td>
<td>Measures labor market activity, working conditions, and price changes in the economy; collects, analyzes, and disseminates essential economic information to support public and private decision making.</td>
<td>Produces Import/Export Price Indexes (MXP) containing data on changes in the prices of nonmilitary goods and services traded between the United States and the rest of the world, based on import data received from CBP.</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td><strong>A/LM</strong></td>
<td>Bureau of Administration, Office of Logistics Management</td>
<td>Provides global logistics support for U.S. government agencies involved in foreign affairs and operations, and for their employees and families.</td>
<td>Facilitates transit of goods to and from U.S. diplomatic missions overseas.</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td><strong>DDTC</strong></td>
<td>Directorate of Defense Trade Controls</td>
<td>Charged with controlling the export and temporary import of defense articles and defense services covered by the United States Munitions List (USML).</td>
<td>Authorizes and licenses the export and temporary import of specific defense-related items.</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td><strong>OFM</strong></td>
<td>Office of Foreign Missions</td>
<td>Ensures that all diplomatic benefits, privileges, and immunities are properly exercised in accordance with federal laws and international agreements.</td>
<td>Regulates the import of shipments consigned to foreign missions and their members in the United States and ensures that these goods are generally not subject to customary taxes and duties and are provided additional protections from inspections as appropriate.</td>
</tr>
<tr>
<td><strong>State</strong></td>
<td><strong>OMC</strong></td>
<td><strong>Office of Marine Conservation</strong></td>
<td><strong>Responsible for formulating and implementing U.S. policy on a broad range of international issues concerning living marine resources, including negotiating bilateral and multilateral fisheries agreements, participating in international fisheries conservation and management organizations, and representing the United States in a variety of other international fora associated with the conservation and management of living marine resources.</strong></td>
<td><strong>Works closely with NOAA-F to combat IUU-fished seafood products from entering the United States, helps limit the ability of those nations that do not work to combat IUU fishing from exporting seafood products to the United States, and promotes the import of seafood products grown through sustainable aquaculture.</strong></td>
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<tr>
<td><strong>Transportation</strong></td>
<td><strong>BTS</strong></td>
<td><strong>Bureau of Transportation Statistics</strong></td>
<td><strong>Administers data collection, analysis, and reporting and to ensure the most cost-effective use of transportation-monitoring resources.</strong></td>
<td><strong>Retains data on freight imports into the U.S. across all modes of transit.</strong></td>
</tr>
<tr>
<td><strong>FAA</strong></td>
<td><strong>Federal Aviation Administration</strong></td>
<td><strong>Ensures the safety and efficiency of the nation’s aerospace system.</strong></td>
<td><strong>Works with CBP to manage the transit of air cargo into the United States and collects data on these shipments from CBP systems.</strong></td>
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<tr>
<td><strong>Transportation</strong></td>
<td><strong>FHA</strong></td>
<td><strong>Federal Highway Administration</strong></td>
<td><strong>Uses financial and technical assistance to support state and local governments in the design, construction, and maintenance of the nation’s highway system, as well as for roads on various federally and tribal owned lands.</strong></td>
<td><strong>Conducts research into freight flows on the U.S. transportation system and across the nation’s borders; certifies state compliance with federal truck size and weight standards and provides information on state enforcement activities, reporting requirements, and contacts; promotes the development of standards for freight information exchange; provides funding for states to improve their freight-management infrastructure.</strong></td>
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<tr>
<td><strong>Transportation</strong></td>
<td><strong>FMCSA</strong></td>
<td><strong>Federal Motor Carrier Safety Administration</strong></td>
<td><strong>Strives to prevent commercial motor vehicle-related fatalities and injuries by enforcing safety regulations; targeting high-risk carriers and commercial motor vehicle drivers; improving safety information systems and commercial motor vehicle technologies; strengthening commercial motor vehicle equipment and operating standards; and increasing safety awareness.</strong></td>
<td><strong>Enforces regulations ensuring safe highway transportation of hazardous materials (including those imported into the country), licenses truck carriers to transit cargo across the United States, and maintains a database of those carriers with their safety track record and typical freight carried.</strong></td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td><strong>MARAD</strong></td>
<td><strong>Maritime Administration</strong></td>
<td><strong>Promotes the use of waterborne transportation, its seamless integration with other segments of the transportation system, and the viability of the U.S. merchant marine.</strong></td>
<td><strong>Regulates maritime freight transit through and into the United States, oversees the commercial fleet of U.S.-flagged merchant ships, maintains a fleet of cargo ships in reserve to provide surge sealift during war and national emergencies, and provides support and information for current and future mariners (including operating the Merchant Marine Academy).</strong></td>
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<tr>
<td>Transportation</td>
<td>NHTSA</td>
<td>National Highway Traffic Safety Administration</td>
<td>Responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and by providing grants to state and local governments to enable them to conduct effective local highway safety programs.</td>
<td>Requires manufacturers to adhere to certain NHTSA requirements if importing vehicles.</td>
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<tr>
<td>Transportation</td>
<td>PHMSA</td>
<td>Pipeline Hazardous Materials Safety Administration</td>
<td>Aims to protect people and the environment from contamination from spills of hazardous materials from pipelines or other transit-related sources.</td>
<td>Regulates the containers used and transit procedures for moving petrochemicals and other hazardous materials into and across the United States, including by rail, truck, and sea.</td>
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<tr>
<td>Treasury</td>
<td>FinCEN</td>
<td>Financial Crimes Enforcement Network</td>
<td>Receives and maintains financial transactions data, analyzes and disseminates that data for law enforcement purposes, and cooperates with international counterpart agencies all to combat money laundering and -financing of terrorism.</td>
<td>Requires individuals who import funds to the United States to report those funds and related information to the agency to ensure that the funds did not come from or go toward illicit activity.</td>
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<tr>
<td>Treasury</td>
<td>IRS</td>
<td>Internal Revenue Service</td>
<td>Governs the processing of taxes and tax forms within the United States</td>
<td>Requires importers provide an IRS-issued number to CBP during entry summary for purposes of tracking duties paid.</td>
</tr>
<tr>
<td>Treasury</td>
<td>OFAC</td>
<td>Office of Foreign Assets Control</td>
<td>Administers and enforces economic and trade sanctions against targeted foreign countries and regimes, terrorists, international narcotics traffickers, those engaged in activities related to the proliferation of weapons of mass destruction, and other threats to the national security, foreign policy, or economy of the United States.</td>
<td>Provides information and enforces sanctions on foreign entities attempting to import goods or money to the United States.</td>
</tr>
<tr>
<td>Treasury</td>
<td>TTB</td>
<td>Alcohol and Tobacco Tax and Trade Bureau</td>
<td>Collects taxes on alcohol, tobacco, firearms, and ammunition; protects the consumer by ensuring the integrity of alcohol products; and prevents unfair and unlawful market activity for alcohol and tobacco products.</td>
<td>Collects trade duties on imported alcohol, tobacco, firearms, and ammunition and provides permits to importers who wish to bring in such goods.</td>
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<tr>
<td>Agency</td>
<td>Responsibilities</td>
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<tr>
<td>CPSC  Consumer Product Safety Commission</td>
<td>Protects consumers from products that pose a fire, electrical, chemical, or mechanical hazard, in particular common household goods like toys, cribs, power tools, cigarette lighters, and household chemicals.</td>
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<tr>
<td>EPA  Environmental Protection Agency</td>
<td>Seeks to protect against from significant risks to human health and the environment, reduce environmental risks based on the best available scientific information, and provide access to accurate information to all people sufficient to effectively participate in managing human health and environmental risks.</td>
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<tr>
<td>FCC  Federal Communications Commission</td>
<td>Regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states, the District of Columbia and U.S. territories.</td>
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<tr>
<td>FMC  Federal Maritime Commission</td>
<td>Regulates the U.S. international ocean transportation system and ensures the competitiveness and efficiency of ocean transportation services.</td>
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<tr>
<td>ITC  International Trade Commission</td>
<td>Administers U.S. trade remedy laws within its mandate in a fair and objective manner, provides independent analysis, information, and support on matters of international trade, and maintains the Harmonized Tariff Schedule.</td>
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<tr>
<td>NRC  Nuclear Regulatory Commission</td>
<td>Ensures the safe use of radioactive materials for beneficial civilian purposes while protecting people and the environment and regulates commercial nuclear power plants and other uses of nuclear materials, such as in nuclear medicine, through licensing, inspection, and enforcement of its requirements.</td>
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</tbody>
</table>

Works closely with CBP to identify and examine imported shipments of consumer products to ensure that they meet U.S. safety standards, can request that CBP hold suspect imports for further inspection, stations inspectors at major ports, and educates CBP officers on the standards the commission seeks to enforce.

Works with the states, other federal agencies (particularly CBP), and foreign governments to ensure compliance with laws governing the import and export of certain materials that can be environmentally harmful and requires that importers for some of those materials (for instance, pesticides) provide a notice of arrival prior to importing those materials into the United States.

Requires importers submit a declaration to the FCC when importing certain digital or communications devices capable of producing harmful interference.

Oversees the activities of carriers and OTIs, monitors rates of government owned/operated carriers and ensures that all carriers publish tariff rates in private automated tariff systems, provides a forum for exporters, importers, and other members of the shipping public to obtain relief or resolve disputes, reviews and monitors agreements among ocean common carriers and marine terminal operators, reviews and maintains confidential service contracts and NVOCC agreements.

Investigates the effects of dumped and subsidized imports on domestic industries, adjudicates cases involving imports that allegedly infringe intellectual property rights, and serves as a federal resource where trade data and other trade policy-related information are gathered and analyzed.

Works with CBP and DNDO to regulate the import of certain radioactive items.
<table>
<thead>
<tr>
<th>USAID</th>
<th>U.S. Agency for International Development</th>
<th>Promotes broad-scale human progress in foreign countries, expands stable and free societies, creates markets and trade partners for the United States, and fosters good will abroad.</th>
<th>Runs multiple programs which helps finance the import of particular goods from certain developing countries.</th>
</tr>
</thead>
<tbody>
<tr>
<td>USPS</td>
<td>U.S. Postal Service</td>
<td>Provides mail service throughout the United States and to letters and packages (up to a certain size) from abroad</td>
<td>Can act as an importer in some cases and enforces rules regarding what goods can be imported through the mail.</td>
</tr>
<tr>
<td>USTR</td>
<td>Office of the U.S. Trade Representative</td>
<td>Negotiates directly with foreign governments to create trade agreements, to resolve disputes, and to participate in global trade policy organizations.</td>
<td>Enforces U.S. obligations toward import licensing procedures.</td>
</tr>
</tbody>
</table>
Cargo Time Release Study, Phase I
Final Report
26 May 2015