



Methodology and Lessons Learned in Canada's Commitment to the Open Contracting Milestone 2.3

Acquisitions Program

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1 Introduction

The Government of Canada has committed to increasing the transparency of government information by expanding access to Open Data. A National Action Plan on Open Government was initiated by Treasury Board Secretariat (TBS) with the [Open Contracting Data Standard \(OCDS\)](#) as co-lead in 2016 and is renewed every two years in order to fulfil this objective. As part of the 4th renewed National Action Plan, [Canada's 2018-2020 National Action Plan on Open Government](#), Public Services and Procurement Canada (PSPC) is leading an Open Contracting Commitment with TBS.

The Open Contracting Commitment is included in Commitment #2, under Milestones 2.3 and 2.4 of the National Action Plan on Open Government:

- Milestone 2.3 Ensure Canadians have access to open data on Government of Canada procurement.
- Milestone 2.4 Explore adoption of common contracting data standards across Canada.

PSPC and TBS have agreed to break down Milestones 2.3 and 2.4 into six actionable Open Contracting Activities. The first of these activities will be the focus of this document.

As a part of Milestone 2.3, PSPC has committed to providing 300 contract records that conform to the OCDS in a best-efforts exercise. Due to PSPC departmental stakeholder feedback, the pilot data records have been reduced to 250 (see section 3.7). The contract records are a comprehensive detailed display of data in the procurement process for the Government of Canada. This pilot data includes all phases of the procurement cycle (Planning, Tender, Award, Contract, and Implementation).

The OCDS data fields which the pilot data conforms to, is listed in Appendix A along with the status of each field. The status denotes whether the government information for the pilot data exists, does not exist, or has been omitted. If the data exists, it has been included in the pilot data. If the data does not exist, PSPC will not produce data for the purposes of Milestone 2.3. The omission of data is a result of decisions made between the stakeholders of Canada's National Action Plan on Open Government.

The purpose of this document is to report on the decisions made and the lessons learned in the process of completing the pilot data as outlined in Milestone 2.3. This document is broken down into the following sections: Introduction, Methodology, and Lessons Learned.

The Methodology section goes through the steps taken in compiling the pilot data. The Lessons Learned section summarizes the lessons learned from completing this project.

2 Methodology

This section describes the process of compiling the 250 contract records into the following steps: Identified Constraints, Sample Attributes, Data Sourcing, OCDS Mapping and Consolidation, and Data Cleansing and Normalization.

2.1 Identified Constraints

In the pursuit of compiling the sample data, there are constraints put in place for completing this project as directed by Procurement Assistance Canada (PAC) senior management. PAC also does not create data, nor do they manipulate data in accordance with the PSPC policy and guidelines.

2.2 Sample Attributes

The outlined 250 contract records were chosen from a filtered pool of contracts based on the distribution of five specific attributes: High/Low Dollar Value, Size of Enterprise, Goods/Services, Closed Contracts, and Contracting Type.

2.2.1 High/Low Dollar Value

The pilot data's dollar values were evenly distributed over four bands:

- Less than \$25k,
- \$25k to \$499k,
- \$500k to \$999k,
- \$1 Million and above

2.2.2 Size of Enterprise

The sizes of the enterprises were also evenly distributed among the following categories:

- Self-employed,
- 1 to 4 employees,
- 5 to 9 employees,
- 10 to 19 employees,
- 20 to 49 employees,
- 50 to 99 employees,
- 100 to 499 employees,
- 500 to 999 employees,
- greater than 1000 employees

2.2.3 Goods/Services

PSPC has chosen the types of commodities to be represented at a two-to-one ratio of Services to Goods.

2.2.4 Closed Contracts

Only closed contracts were used for the sample records. A closed contract was defined as the tenders having been awarded no later than 2019.

2.2.5 Contracting Type

With the inclusion of varied Contracting Types, the nature of having subsequent callups on Standing Offers or Supply Arrangements that can span multiple years has been limited to any and all contract records that have been published in 2020 and older.

2.3 Data Sourcing

The OCDS has a standard set of data fields to be populated by the Government of Canada's data collected as part of the procurement process. Most of the data used in the 250 contract records, save the planning and implementation data, is actively published on Buyandsell.gc.ca (BAS) and is easily accessible through the data repository on Open.Canada.ca. The data is sourced primarily from BAS and our procurement systems.

PSPC has identified that the systems did not have all the fields needed to fulfil the OCDS. As mentioned in the constraints section above, for the purposes of Milestone 2.3, PSPC will not create data fields to fulfil the OCDS. The OCDS fields that we do not have available from our data sources are shown in Appendix A. In some cases, the current Government of Canada's procurement data is not captured as "Structured" data in the procurement systems. This exercise identified the need to standardize the way data elements are captured across PSPC procurement systems. Future OCDS efforts will greatly benefit from such an initiative.

PSPC has also sourced data from the OPI in the sectors and regions directly.

2.4 OCDS Mapping and Consolidation

This project is an exercise in best efforts and no data was created for the completion of the 250 sample OCDS records. PSPC mapped the procurement data to the Open Contracting Standard by exploring the data collected in the systems and documents and contacting the OPI for the data. The data was mapped on best effort basis, if the data was not available, those fields were not included for publishing and justification was provided. When possible, PSPC took the steps to complete the field sections that were highly recommended in OCDS. However, due to the discrepancy and unavailability between the OCDS data fields, quality and/or imprecise purpose of data, PSPC has omitted some highly recommended fields from the data standard after taking extensive efforts to acquire the data. The highly recommended fields omitted include the following:

- Project Title
- Project ID
- Planning Documents (Includes ID, title, type, description...)
- Planning Milestones (Includes ID, title, type, description...)

The disparate nature of the data across government agencies has presented issues in trying to unify the data. The main identifier for data is the Requisition Number which is comprised of the Ordering Office, the year of procurement and a serial number. The Requisition Number is persistent throughout the procurement phases with modifiers added as the process matures as seen the following table.

Planning	Tender	Award	Contract History	Implementation
E6HAL-160005	E6HAL-160005/A	E6HAL-160005/001/HAL	E6HAL-160005/001/HAL~000	N/A

When consolidating the published requisition data in Buyandsell.gc.ca with the purchase order and invoice data in the PSPC Financial system from Financial Accounting (FI postings), we found that the linkage was not fully standardized. The Purchase Order Number (PO) in the Financial System, in most cases, uses an internal identification scheme and, in some cases, the PO uses aspects of the Requisition Number in varying ways. An example of the most common Financial system’s purchase order number format variation can be seen in the following table.

Requisition Number	Award	Financial System’s Purchase Order
E6HAL-160005	E6HAL-160005/001/HAL	E6HAL60005 or 700XXXXXX

This record does not provide a direct link to a specific awarded contract as it does not include the “001” portion of the award number as seen in the second column. The link was then further strengthened with the financial coding data found in the procurement requisition. The OCDS aims at an itemized invoice level of reporting. In order to meet the standard, we had to further link the PO data to the invoice data.

2.5 Data Cleansing and Normalization

Data cleansing involves the correction of values that have been entered in error and is only done when there is certainty of input error (e.g., Canadian Provinces, Cities, and letters in number fields). Normalization is the conforming of data to a set uniform structure or syntax. The data required cleansing and normalization in order to conform to OCDS.

In general, the sample records have been normalized and/or cleaned for all fields related to:

- Regions
- Postal codes
- Emails
- Name of contacts
- Phone numbers
- Currency codes and values
- Boolean (True and False) values
- Unit names
- Free text fields:
 - Bidder name

3 Lessons Learned

The lessons learned in Milestone 2.3 of the 4th National Action Plan will be used to influence and direct decisions to be made in future activities related to OCDS. Compiled below is the list of Lessons Learned throughout the process of completing This project.

3.1 Procurement data must be captured as structured data for all OCDS fields

As mentioned in section 2.3, the information collected for the pilot data is for the most part structured and can be easily mapped to the OCDS fields. However, unstructured information like the “rationale” or “milestones” field, which is important to communicate the overall status of the procurement instrument, is captured as an unrequired, free text input with no standardized template across the government sectors.

PSPC has suggested a solution of incorporating structured data for all future records inputted by the buyer through onboarding, training, and the adoption of the Electronic Procurement System (EPS) within the department.

3.2 Contract History should not have missing original contract records

PSPC has identified issues with data quality in the contract data during the early stages of sourcing the sample records. The contract data contains records with no original contract. This can be identified as not having an amendment value of 0. Contract data that did not have an original contract was filtered out of the 250 contract records. The sample records only have contract data that include the value of 0 for the specific CH field “CONTRACT_AMENDMENT”.

Senior management has been notified of this issue in the current and legacy data. Moving forward, PSPC has recommended that the issue be corrected for all future records inputted by the buyer through onboarding, training, and the adoption of EPS within the department.

3.3 Inaccessible documents and data pertinent to OCDS are to be digitized

PSPC has found that the information solicited from the sectors and regions were not often digitized and there was a lack of strict procedure for data clarity. In some instances, the documents were kept as hard copies or in email chains as attachments. Since the documents were meant for internal use and were often unilingual, the information needed from the documents was translated for use in the pilot data. These documents, such as the 9200 and their amendments, Risk Assessment Documents, and Contract Planning and Advanced Approval (CPAA), were not readily available to PSPC from the respective procurement officers. This issue has led to the omission of the OCDS Planning Documents and Planning Milestones sections.

The data that came from the sectors and regions for the planning milestone information, and planning amount value did not always align with the requisition value reported in AIS. This discrepancy can also be attributed to lack of access to documents, input error or ambiguity when requesting the data from the sectors. The case-by-case manual data extract from the sectors has provided the planning amount and currency fields which are included in the pilot data.

PSPC has suggested digitizing pertinent documents in the procurement process for structured and automated OCDS disclosure of future records.

3.4 Published procurement data must have a standard and direct link to Financial System records

PSPC has identified an issue with the relationship between the contracting data found on BAS and the Financial System purchasing data. The issue is caused by an informal and nonstandard link between requisition and PO numbers. This issue was resolved by manually mapping the data, and each linkage between PO and requisition has been vetted case by case.

PSPC plans to remedy the issue for all future records through the incorporation of EPS as a unified system that attaches all procurement processes from planning to spending.

3.5 Official Languages and published content

PSPC has identified minor language issues that affected 4% of the sample records. These issues were identified while manually extracting the item data from the “Basis of Payment” sections in the solicitation documents found in the Tender Phase.

PSPC has resolved the issues for the pilot data by translating the documents with the aid of the OPI from the sectors and regions. This issue contributed to the decision made during QA to omit item data in the Tender Phase.

The language issues are mostly contained to published legacy data and has been reported to senior management.

3.6 Notice type for tenders are misidentified as Notice of Proposed Procurement (NPP)

Due to an unseen error, NPP was inadvertently incorporated as a viable input option for a tender’s Notice Type in the Tender Management Application (TMA) and is a legacy error in ABE. Procurement Officers are to therefore use one of the correct five following notice types in place of NPP:

- Request for Proposal (RFP)
- Request for Quotation (RFQ)
- Invitation to Tender (ITT)
- Request for Standing Offer (RFSO)
- Request for Supply Arrangement (RFSFA)

In order to correct this issue for the pilot data, PSPC used a combination of AIS data on the solicitation type and manual data mining to map to the OCDS notice type field.

PSPC plans to remedy the issue for all future records inputted by the buyer through onboarding, training, and the adoption of EPS within the department.

3.7 Identified privacy and security concerns in the pilot data

Unit item information, free text Financial System item descriptions, supplier emails, sole proprietorship address blocks, and supplier business numbers will not be disclosed as there are privacy and security concerns. In place of business numbers as an identifier of a supplier, all supplier IDs in the pilot data have been changed to a unique four-digit random number. Due to PSPC departmental stakeholder feedback, the pilot data records have been reduced to 250.

3.8 Contract History date periods are inaccurately published on BAS

The contract start, expiry, and amendment dates inputted in ABE are subject to data entry errors from procurement officers and has led to the inaccurate values in the pilot data.

PSPC has consulted stakeholders to have the current issues resolved. The department plans to remedy the issue for all future records inputted by the buyer through onboarding, training, and the adoption of EPS within the department.

Appendix A – Field Analysis

Table 1: Planning Phase – PSPC Contracting Authority

OCDS Planning Fields	Status		
buyer/id	Included	planning/documents/format	Omitted
parties/name	Included	planning/milestones/title	Omitted
parties/id	Included	planning/milestones/type	Omitted
parties/identifier/scheme	Included	planning/milestones/description	Omitted
parties/identifier/legalName	Included	planning/milestones/code	Omitted
parties/identifier/uri	Included	planning/milestones/dueDate	Omitted
parties/address/region	Included	planning/milestones/dateMet	Omitted
parties/address/postalCode	Included	planning/milestones/dateModified	Omitted
parties/contactPoint/name	Included	planning/milestones/status	Omitted
parties/contactPoint/email	Included	Requisition-ID	Extension
parties/contactPoint/telephone	Included	Requisition-Date-of-submission	Extension
parties/contactPoint/faxNumber	Included	Requisition-Value	Extension
parties/contactPoint/url	Included	Requisition-Amendment	Extension
parties/roles	Included		
rationale	Included		
planning/budget/id	Included		
planning/documents/language	Included		
planning/milestones/id	Omitted		
tender	Included		
buyer/name	Included		
parties/address/streetAddress	Included		
parties/address/locality	Included		
parties/address/countryName	Included		
planning/budget/description	Included		
amount	Included		
currency	Included		
project/title	Omitted		
project/id	Omitted		
planning/budget/uri	Included		
planning/documents/id	Omitted		
planning/documents/documentType	Omitted		
planning/documents/title	Omitted		
planning/documents/description	Omitted		
planning/documents/url	Omitted		
planning/documents/datePublished	Omitted		
planning/documents/dateModified	Omitted		

Table 2: Tender Phase – PSPC Procurement System

OCDS Tender Fields	Status
tender/title	Included
tender/description	Included
tender/status	Included
tender/value/amount	No Data
tender/value/currency	No Data
tender/procurementMethod	Included
tender/procurementMethodDetails	Included
tender/mainProcurementCategory	Included
tender/awardCriteria	Included
tender/awardCriteriaDetails	Included
tender/submissionMethod	Included
tender/submissionMethodDetails	Included
tender/eligibilityCriteria	Included
tender/tenderPeriod/startDate	Included
tender/tenderPeriod/endDate	Included
tender/enquiryPeriod/durationInDays	Included
tender/procuringEntity/name	Included
tender/id	Included
tender/title	Included
tender/minValue/amount	No Data
tender/minValue/currency	No Data
tender/procurementMethodRationale	Included
tender/tenderPeriod/maxExtentDate	Included
tender/tenderPeriod/durationInDays	Included
tender/awardPeriod/startDate	Included
tender/awardPeriod/endDate	Included
tender/tenderPeriod/maxExtentDate	No Data
tender/awardPeriod/durationInDays	Included
tender/contractPeriod/startDate	Included
tender/contractPeriod/endDate	Included
tender/contractPeriod/maxExtentDate	No Data
tender/contractPeriod/durationInDays	Included
tender/hasEnquiries	Included
tender/enquiryPeriod/startDate	Included
tender/enquiryPeriod/endDate	Included
tender/enquiryPeriod/maxExtentDate	No Data
tender/procuringEntity/id	Included
tender/numberOfTenderers	Included
tender/tenderers/name	Included
tender/tenderers/id	Included
tender/documents/id	Included
tender/documents/documentType	Included
tender/documents/title	Included
tender/documents/description	Included
tender/documents/url	Included
tender/documents/datePublished	Included
tender/documents/dateModified	Included
tender/documents/format	Included
tender/documents/language	Included
tender/items/id	Omitted
tender/items/description	Omitted
tender/items/classification/scheme	Omitted
tender/items/classification/id	Omitted
tender/items/classification/description	Omitted
tender/items/classification/uri	Omitted
tender/items/quantity	Omitted
tender/items/unit/name	Omitted
tender/items/unit/scheme	Omitted
tender/items/unit/id	Omitted
tender/items/unit/uri	Omitted
tender/items/unit/value/amount	Omitted
tender/items/unit/value/currency	Omitted
tender/milestones/id	No Data
tender/milestones/title	No Data
tender/milestones/type	No Data
tender/milestones/description	No Data
tender/milestones/code	No Data
tender/milestones/dueDate	No Data
tender/milestones/dateMet	No Data
tender/milestones/dateModified	No Data
tender/milestones/status	No Data
tender/amendments/id	Included
tender/amendments/date	Included
tender/amendments/description	Included
tender/amendments/rationale	Included

Table 3: Award Phase – PSPC Procurement System

OCDS Award Fields	Status
awards/description	Included
awards/status	Included
awards/date	Included
awards/value/amount	Included
awards/value/currency	Included
awards/contractPeriod/startDate	Included
awards/contractPeriod/durationInDays	Included
awards/documents/id	No Data
awards/documents/title	No Data
awards/documents/description	No Data
awards/documents/url	No Data
awards/documents/datePublished	No Data
awards/documents/dateModified	No Data
awards/documents/format	No Data
awards/documents/language	No Data
awards/suppliers/name	Included
parties/contactPoint/telephone	Included
parties/contactPoint/faxNumber	Included
awards/id	Included
awards/title	Included
awards/contractPeriod/endDate	Included
awards/contractPeriod/maxExtentDate	No Data
awards/documents/documentType	Included
awards/suppliers/id	Included
parties/name	Included
parties/id	Included
parties/identifier/scheme	Included
parties/identifier/id	Included
parties/identifier/legalName	Included
parties/identifier/uri	Included
parties/address/streetAddress	Included
parties/address/locality	Included
parties/address/region	Included
parties/address/postalCode	Included
parties/address/countryName	Included
parties/contactPoint/name	Included
parties/contactPoint/email	Included
parties/contactPoint/url	Included
parties/roles	Included
awards/items/id	No Data
awards/items/description	No Data
awards/items/classification/scheme	No Data
awards/items/classification/id	No Data
awards/items/classification/description	No Data
awards/items/classification/uri	No Data
awards/items/quantity	No Data
awards/items/unit/name	No Data
awards/items/unit/scheme	No Data
awards/items/unit/id	No Data
awards/items/unit/uri	No Data
awards/items/unit/value/amount	No Data
awards/items/unit/value/currency	No Data
awards/amendments/id	No Data
awards/amendments/date	No Data
awards/amendments/description	No Data
awards/amendments/rationale	No Data
awards/agreementNumber	Extension
awards/agreementTypeEN	Extension
awards/agreementTypeFR	Extension

Table 4: Contract Phase – PSPC Procurement System

OCDS Implementation Fields	Status
contracts/title	Included
contracts/description	Included
contracts/status	Included
contracts/dateSigned	Omitted
contracts/period/startDate	Included
contracts/period/endDate	Included
contracts/value/amount	Included
contracts/value/currency	Included
contracts/documents/documentType	Omitted
contracts/documents/title	Omitted
contracts/documents/description	Omitted
contracts/documents/url	Omitted
contracts/documents/datePublished	Omitted
contracts/documents/dateModified	Omitted
contracts/documents/format	Omitted
contracts/documents/language	Omitted
contracts/amendments/date	Included
contracts/amendments/description	Included
contracts/id	Included
contracts/awardID	Included
contracts/period/maxExtentDate	No Data
contracts/period/durationInDays	Included
contracts/documents/id	Included
contracts/items/id	No Data
contracts/items/description	Omitted
contracts/items/classification/scheme	No Data
contracts/items/classification/id	No Data
contracts/items/classification/description	No Data
contracts/items/classification/uri	No Data
contracts/items/quantity	Omitted
contracts/items/unit/name	Omitted
contracts/items/unit/scheme	No Data
contracts/items/unit/id	No Data
contracts/items/unit/uri	No Data
contracts/items/unit/value/amount	Omitted
contracts/items/unit/value/currency	Omitted

contracts/amendments/id	Included
contracts/amendments/rationale	Included
Requisition-Number	Extension
Total-Contract-Value	Extension

Table 5: Implementation Phase – PSPC Financial System

OCDS Implementation Fields	Status
contracts/title	Included
contracts/description	Included
contracts/status	Included
contracts/implementation/transactions/id	Included
contracts/implementation/transactions/source	Included
contracts/implementation/transactions/date	Included
contracts/implementation/transactions/payer/name	Included
contracts/implementation/transactions/payer/id	Included
contracts/implementation/documents/documentType	Omitted
contracts/implementation/documents/title	Omitted
contracts/implementation/documents/description	Omitted
contracts/implementation/documents/url	No Data
contracts/implementation/documents/datePublished	Omitted
contracts/implementation/documents/dateModified	Omitted
contracts/implementation/documents/format	Omitted
contracts/implementation/documents/language	Omitted
parties/contactPoint/faxNumber	Included
parties/contactPoint/url	Included
contracts/id	Included
contracts/awardID	Included
contracts/implementation/transactions/value/amount	Included
contracts/implementation/transactions/value/currency	Included
contracts/implementation/documents/id	Included
parties/name	Included
parties/id	Included
parties/identifier/scheme	Included
parties/identifier/id	Included
parties/identifier/legalName	Included
parties/identifier/uri	Included
parties/address/streetAddress	Included
parties/address/locality	Included
parties/address/region	Included
parties/address/postalCode	Included
parties/address/countryName	Included
parties/contactPoint/name	Included
parties/contactPoint/email	Included
parties/contactPoint/telephone	Included
parties/roles	Included
contracts/implementation/transactions/payee/name	Included
contracts/implementation/transactions/payee/id	Included
party/name	Included
party/id	Included
party/identifier/scheme	Included
party/identifier/id	Included
party/identifier/legalName	Included
party/identifier/uri	Included
party/address/streetAddress	Included
party/address/locality	Included
party/address/region	Included
party/address/postalCode	Included
party/address/countryName	Included
party/contactPoint/name	Included
party/contactPoint/email	Included
party/contactPoint/telephone	Included
party/contactPoint/faxNumber	Included
party/contactPoint/url	Included
party/roles	Included
implementation/milestones/id	No Data
implementation/milestones/title	No Data
implementation/milestones/type	No Data
implementation/milestones/description	No Data
implementation/milestones/code	No Data
implementation/milestones/dueDate	No Data
implementation/milestones/dateMet	No Data
implementation/milestones/dateModified	No Data
implementation/milestones/status	Omitted
Fiscal-Year	Extension
Company-Code	Extension
Document-No.	Extension
Fund	Extension
Document-Date	Extension
Payment-Date	Extension
Clearing	Extension
Posting-Date	Extension
Item	Extension
Purchasing-document	Extension
Purchasing-Document-Associated	Extension
Debit/Credit Amount	Extension

Appendix B – Acronyms

Acronym	Full Name
AP	Acquisitions Program
APTS	Acquisitions Program Transformation Sector
BAS	Buyandsell.gc.ca
BRU	Bids Receiving Unit
CH	Contract History
CPAA	Contract Planning and Advanced Approval
EPS	Electronic Procurement System
FI	Financial Accounting
GSIN	Goods and Services Identification Number
NPP	Notice of Proposed Procurement
OCDS	Open Contracting Data Standard
OG	Open Government
OLA	Official Languages Act
OPI	Office of Primary Interest
PAC	Procurement Assistance Canada
PO	Purchase Order Number
PSPC	Public Services and Procurement Canada
SRI	Supplier Registration Information
TBS	Treasury Board Secretariat
WBS	Work Breakdown Structure