



Canadian Marine data

INLAND WATER STATISTICS

Canadian Centre on Transportation Data (CCDT)

June, 2018





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CANADIAN CENTRE ON TRANSPORTATION DATA

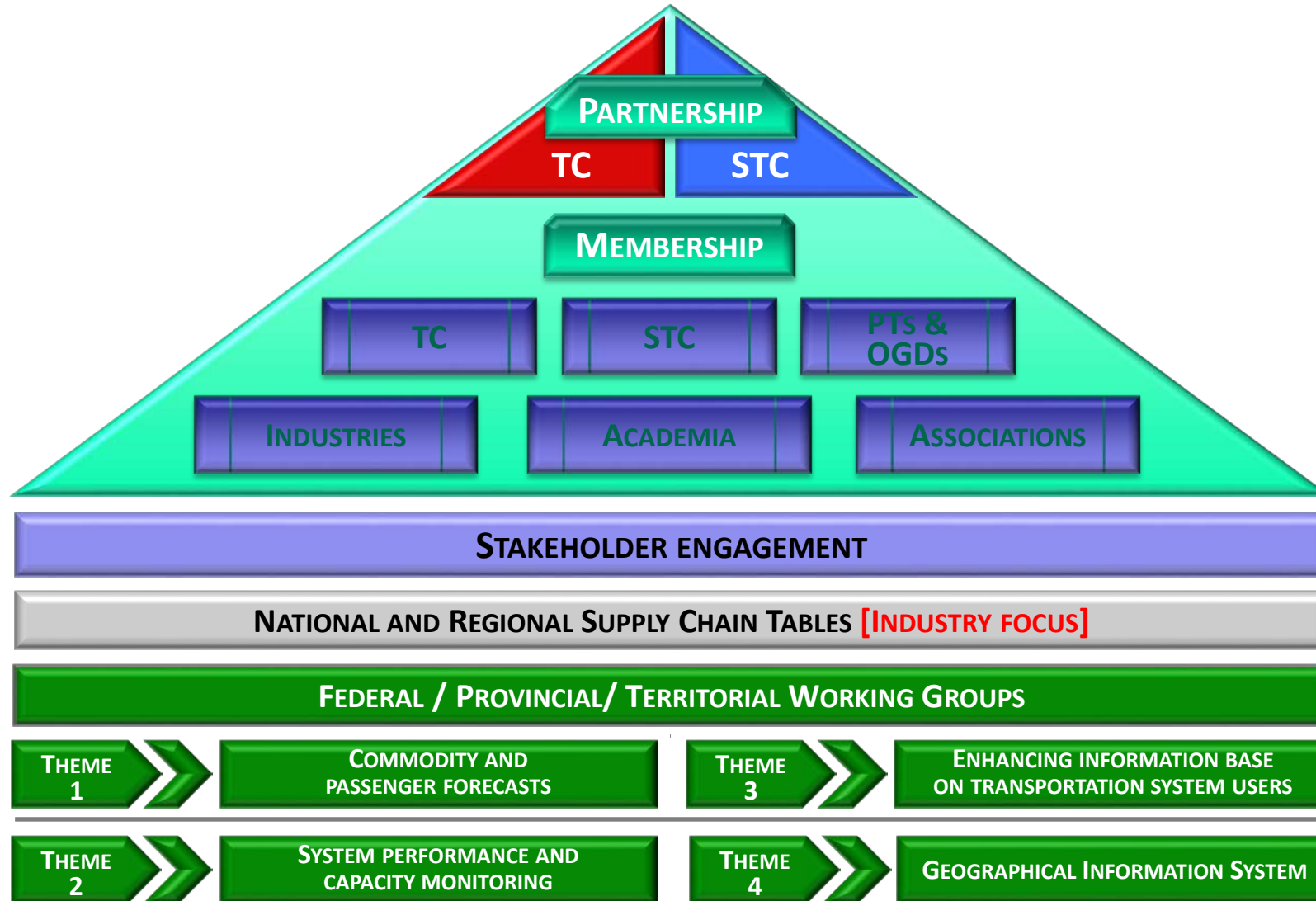
The Government of Canada announced an investment of \$50 million over 11 years to build the Canadian Centre on Transportation Data (CCTD). As part of this initiative, Transport Canada and Statistics Canada will collect and share new data, performance indicators, analysis and research on transportation in Canada.

The CCTD is an ambitious project. It will:

- build new partnerships with the transportation industry, transportation users, researchers and other levels of government;
- make available better data, analysis and information about the national transportation system; and
- develop new tools and applications to promote the flow of transportation-related information and knowledge and enhance understanding and decision-making.



CANADIAN CENTRE ON TRANSPORTATION DATA





STATE OF THE MARINE DATA IN CCTD

- Currently high level information such as GDP and employment ([Statistics Canada](#)).
- From federal regulations:
 - The Canadian Vessel Registry and Ship Inspection Reporting System ([Transport Canada](#))
 - Transportation Information Regulation, schedule X (P1 to P5 – [Transport Canada](#))
 - Detailed itineraries in Canadian waters ([Canadian Coast Guard](#) - INNAV)
 - Domestic Marine Origin/Destination Survey ([MODS – Transport Canada](#))
 - Imports/Exports manifest (Canadian Border Services Agency).
- Local/regional publically released information by [port Authority](#) or the [St. Lawrence Seaway Management Corporation](#).
- Third party information such as: Automated Identification System (AIS).
- Selected [performance indicators](#) (ports, end-to-end transit times).



STATE OF THE MARINE DATA IN CCTD

Over the last decade, some marine data have improved.

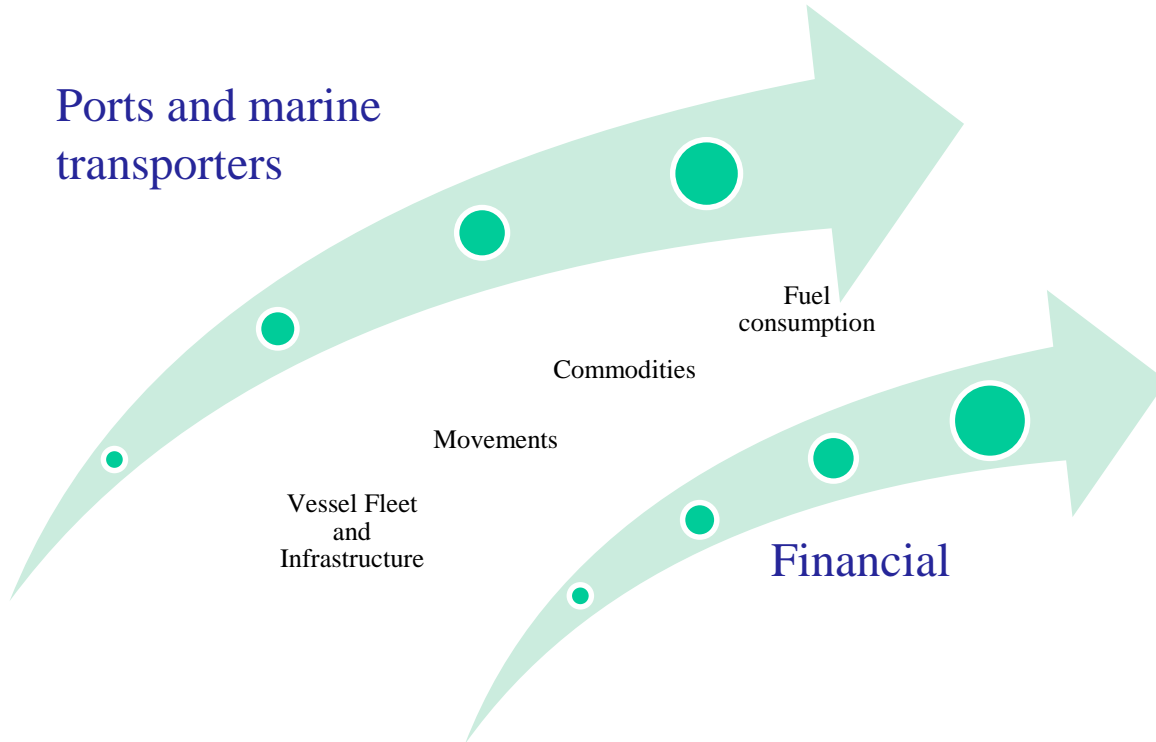
Fleet: Information from the Canadian Vessel Registry and the Canadian Coast Guard (CCG) movements in Canadian water capturing foreign vessels.

Movements: The current work with data from the CCG and various source of Automated Identification System (AIS) data are showing promises.

Commodities: Work in progress. We continue to deploy our domestic survey, we are continually in discussions with the Canadian Border Security Agency to improve our comprehension of their administrative data on imports/exports. More integration is needed.

Financial: Canadian Port Authorities (CPAs) are reporting some information through TC regulations. Future work most likely to involve administrative data available to CCTD.

Infrastructure: A domestic fuel consumption survey is currently on the field, while port infrastructure and machinery are a current data gap in Canada.





INLAND WATERWAYS IN CANADA

- Although Canada has a vast amount of inland waterways, it's geography is very different than Europe. There is almost no inland waterways that lead to international trade.
- The only exception is the great lakes and they are principally used for Canada-USA trade that is complemented by both country railway systems.
- The data in Canada are defined from the domestic and international perspective only.

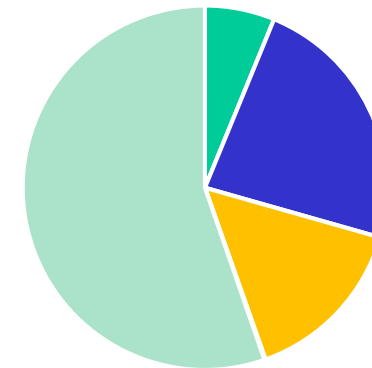


CANADIAN STATISTICS

Imported Laden Containers (CBSA)

	Share (2013-2017)
Halifax	6.2%
Montréal	23.2%
Prince Rupert	15.2%
Saint John	0.1%
Vancouver	55.3%
Total*	100.0%

Share (2013 - 2017)



■ Halifax ■ Montréal ■ Prince Rupert ■ Saint John ■ Vancouver

* Total of the top five ports that Import containers. With Saint John ranking fifth with 0.1%, the remaining port that handle containers handle principally domestic containers.



CANADIAN STATISTICS

Tonnage Handled at Canadian Port Authority CPAs - 2010 to 2017 (Millions of tonnes)

Vancouver and Prince Rupert handled most of the tonnage from the west coast.

Montréal, Saint John, Québec, Sept-Iles and Halifax handled most of the east coast tonnage.

Hamilton is the biggest Canadian port in the great lakes, closely followed by Thunder bay.

Saguenay & Oshawa, the 2 smallest CPAs, are using inland waterways mostly out of necessity do to location of resources.

P = Preliminary data

1 = Data include transshipment within the port

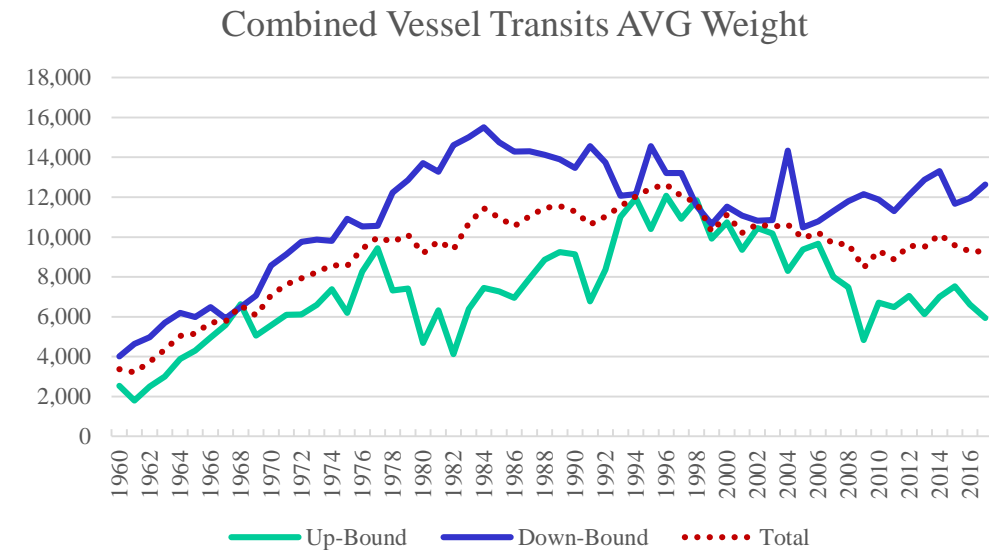
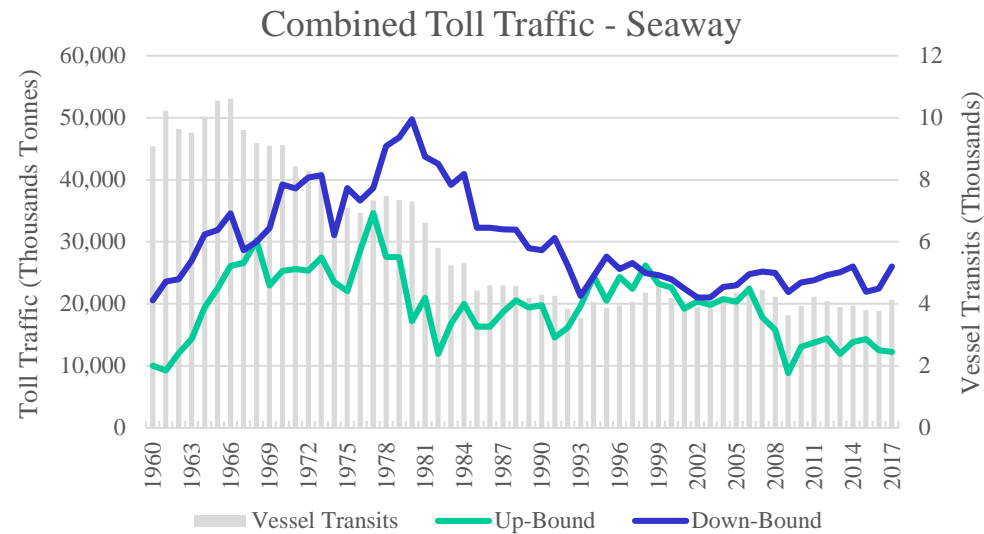
Sources: Transport Canada - Transportation and Economic Analysis / Traffic and Employment Information Schedule P5, Canadian Port Association Website, CPAs websites.

	2010	2011	2012	2013	2014	2015	2016	2017 ^P
Vancouver ¹	118.5	122.5	123.9	135.0	139.6	138.2	135.5	142.1
Montreal	25.9	28.5	28.4	28.2	30.4	32.0	35.4	38.0
Saint John	30.5	31.8	27.7	27.7	23.9	26.4	26.4	30.5
Quebec	24.6	29.0	33.1	27.1	24.3	21.4	24.8	27.5
Prince Rupert	16.4	19.3	22.3	23.1	20.7	19.7	18.9	24.3
Sept-Iles	25.1	26.0	27.9	27.7	23.8	22.7	22.9	24.2
Hamilton	11.5	10.0	10.3	10.0	10.5	9.2	9.3	9.9
Halifax	9.5	9.5	9.5	8.6	7.8	7.6	8.3	8.9
Thunder Bay	6.9	7.6	7.8	6.5	9.3	8.9	8.8	8.8
Nanaimo	2.4	3.2	3.0	3.8	4.1	4.9	5.4	5.6
Windsor	5.3	5.1	5.5	6.0	5.4	5.6	4.8	5.1
Trois Rivières	3.0	3.3	3.4	2.7	3.8	3.1	2.8	2.6
Toronto	1.5	1.7	1.9	1.6	1.9	1.7	1.8	2.2
Belledune	2.1	2.1	1.9	1.7	1.7	1.8	2.0	2.0
St. John's	1.5	1.4	1.4	1.8	1.7	1.8	1.7	1.7
Port Alberni	1.0	1.5	1.6	1.8	1.7	1.6	1.6	1.3
Oshawa	0.3	0.3	0.5	0.3	0.4	0.4	0.4	0.4
Saguenay	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	286.2	303.0	310.2	313.7	311.4	307.3	311.2	335.4



CANADIAN STATISTICS

St. Lawrence Seaway Management Corporation.



Similarly to everywhere, ship using the St. Lawrence seaway have got bigger toward the end of the century. Since 1990 the number of trip is relatively constant and the average tonnage by ship is around 10,000 tonnes.



SPECIFIC DATA INITIATIVE

MODS – Marine Origin/Destination Statistics:

Information gathered and disseminated by Statistics Canada until 2011. This information consist of two parts: 1) marine imports and exports and 2) domestic marine shipments.

- 1) Domestic: since 2011, Transport Canada has been working to reproduce the domestic survey to be able to reproduced MODS.
- 2) Imports/Exports: since 2011, Transport Canada has been working to capture Import/Export in physical unit using CBSA administrative data (Forms A6 and A6A). The complexity in using this information to trace marine imports/export origin and destination of commodity is not yet resolve with existing resources.

First dissemination of aggregate information from this activity is expected to be through the Canadian Freight Analysis Framework (CFAF) as marine data



SPECIFIC DATA INITIATIVE

MODS – Marine Origin/Destination Statistics:

Domestic activity between Canadian ports is an important component of our economy. As mentioned before, the geography of Canada require an efficient marine transportation system to get good to appropriate destinations and support remote communities.

Current Challenges deploying TC domestic marine OD survey:

- Resources constraint.
- Domestic information is hard to disseminate on its own. Confidentiality of information, specific commodity with specific transporter and assets. We are managing expectations toward industry benchmarking and aggregate information to be available to the public domain, not route and commodity details.
- Standardization and harmonization of commodity codes and locations seem simple on paper, but harder to achieve. Using HS code in drop down menu for every commodity and trip is an increase burden on aggregate reporting that marine transporters were used to in the past.



SPECIFIC DATA INITIATIVE

MODS – Marine Origin/Destination Statistics:

The marine Imports/Exports of good is another important component of our economy. This is handle mostly by our coastal ports such as Vancouver, Montréal, Saint John, Prince Rupert Québec and Halifax. The Canadian Border Security Agency (CBSA) A6 general declaration and A6A Freight/Cargo Manifest maintain administrative data on all importations and exportations form Canada.

Current Challenges using CBSA data:

- Free and manually enter text description require a lot of manipulations.
- We are currently investigating accessing CBSA B13 and B13A: Export declaration through our regulations, this would help tremendously clarifying the marine exportations.
- Bulk importation is less precise than containers.



SPECIFIC DATA INITIATIVE

INNAV – Canadian Coast Guard (CCG):

In Canada, the VTMISS (Vessel Traffic Management Information System) is identified by the acronym INNAV. Of interest to the CCTD: the detailed itineraries and movement histories.

- Movements in Canadian water
- Port calls
- Domestic and foreign ships
- Region to region analysis

Work to be done

1. Establish durable access to INNAV with CCG and Clean DB for CCTD uses (no duplicate entries of vessel and location by trip).
2. Disseminate.



SPECIFIC DATA INITIATIVE

Automated Identification System – AIS:

System where location and some basic status information (along with vessel name) is captured via satellites or radio towers every X seconds/minutes. Since departures and arrivals are not defined, rules needed to be made. Currently use in analyse and trip counter while INNAV is being investigated.

- Ship tracking / positions / speeds / trajectories / etc.
- Local issues

Work to be done

1. Linking AIS data to INNAV trips would facilitate analysis.
2. Since this is big data, accessibility is currently limited.
3. Standardize information from the multiple/different providers over time.



CONCLUSION

- Significant work is underway to develop a program to deliver domestic and international marine data statistics for Canada
- Many sources of existing data are being used to develop a robust and modern data program.
- Importance of continuing to work with strategic partners to ensure the marine data is robust, comparable and can provide input into the important commodity freight framework model.