



NOVA SCOTIA FEDERATION  
OF MUNICIPALITIES

February 12, 2020

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Mike Dolter, President

Association of Municipal Administrators, Nova Scotia  
1809 Barrington Street, Suite 1304

Halifax, NS B3J 3K8

Dear President Dolter:

**RE: CAP Map**

I write to you today on behalf of the NSFM Board of Directors. Last Friday our Board instructed NSFM staff to lead a coalition to gain partners in funding our new Capped Assessment Program map, or 'CAP map'. We would like to know if the Association of Municipal Administrators is willing and able to be a partner in funding for this venture.

The CAP map is an interactive online map. It allows homeowners and renters to use an internet browser on computer or mobile phone to check and see how much the CAP program is costing or saving them. The map uses entirely public-domain data, with two data sets from PVSC's DataONE website, and from the Government of Nova Scotia's Open Data Portal. No personal information is used.

Taxable assessed values for each property in Nova Scotia with registered dwelling units are compiled from PVSC's data sets. The Department of Municipal Affairs and Housing's open data portal supplies average residential tax rates for each municipality.

Average tax rates are then applied to the taxable assessed values, which allows a revenue total to be calculated for each municipality. By then using the sum of the market values (instead of the taxable assessed values), a revenue-neutral tax rate can be found.

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Two tax bills are then calculated for each property in the data set: one as a tax bill under the CAP program, and one as a tax bill with no CAP. The difference between these tax bills is represented by shades of colour and is plotted on a GIS map using the GPS coordinates in the PVSC data set.



Figure 1: Halifax Area CAP Map

The group NSFAM is working with on this project is MountainMath, an independent Vancouver-based company centered on data analysis, data infrastructure, and data visualization.

The experts at MountainMath are adept at working with challenging data sets, solving problems and removing barriers. You may know MountainMath for their work in producing CensusMapper ([link](#)), a website that really puts the 'open' into StatCan Census open data.

Our primary contact at MountainMath, Jens von Bergmann, holds undergraduate degrees in Physics and Computer Sciences and a PhD in Mathematics. He taught for several years at the University of Calgary, University of Notre Dame and Michigan State University.

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A test version of the CAP map has been created with 2018 data as a proof-of-concept in order to generate funding. The test map includes all single-family detached residences in Nova Scotia.

At the current time, the NSFM Board has committed to funding half of the CAP map expenses. The total expenses are expected to be \$6,000. The new map would also include all multi-unit buildings such as condos, apartments and non-profits. These multi-unit buildings would be represented differently on the map, probably using squares.

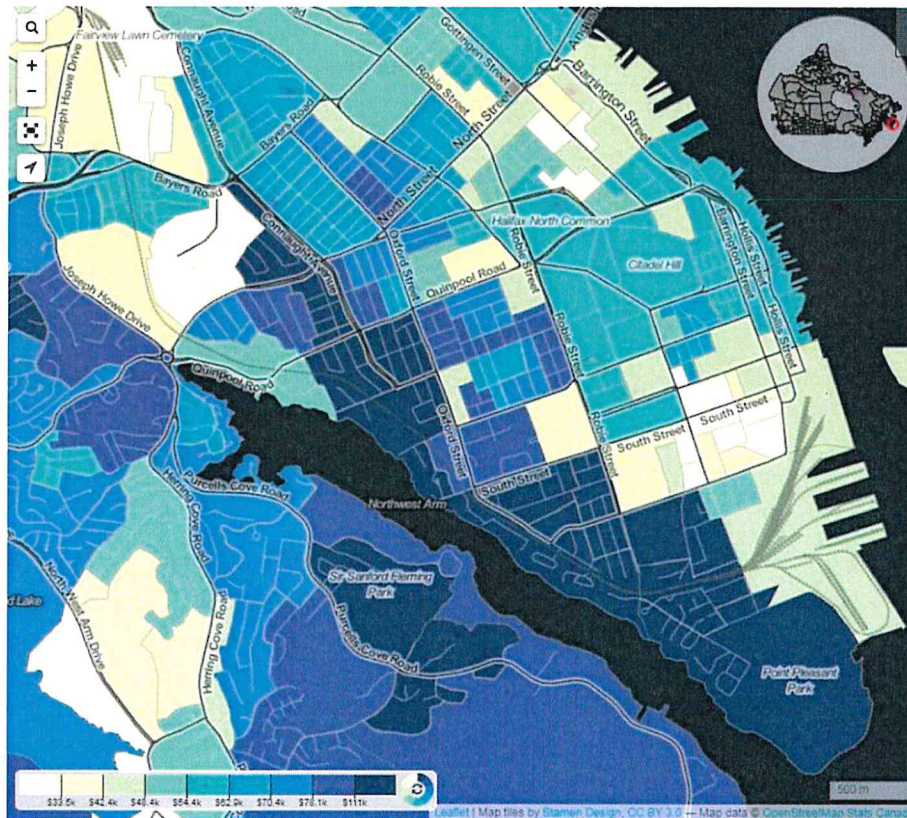


Figure 2: Halifax Area Median Incomes (2016 Census)

An additional and important feature of the CAP map is the ability to toggle median income data from Statistics Canada. This will show how the CAP disproportionately benefits those who live in high-income neighbourhoods.

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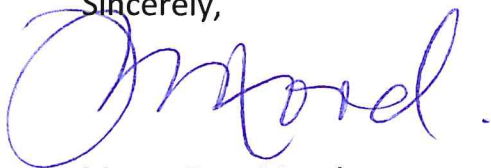
Jens from MountainMath would be put in touch with PVSC to ensure that the relevant assessment data for the most recent year available are interpreted correctly, particularly regarding rental, condo, and not-for-profit buildings.

During a 2019 meeting with the Canadian Association for Retired Persons, a CARP audience member asked if a map like this one existed. This question was asked again at the recent All-Party Committee on the CAP Meetings by members from the Progressive Conservative Party and the New Democratic Party.

The NSFM Board of Directors has demonstrated enthusiasm for this this map, and they would like to make it public. If you think your Board would be interested in the CAP map and in helping to make this communications tool go public by contributing funding, NSFM staff would be made available to demonstrate the proof-of-concept version at your earliest convenience.

In considering the importance of this issue, we would also be interested in incorporating feedback that you or your members might have on the map, thereby making it more effective.

Sincerely,



Mayor Pam Mood  
President, Nova Scotia Federation of Municipalities