



**McElhanney**

# **TransLink RTM3**

## **Data Extraction Tool - Documentation**

**October 28<sup>th</sup>, 2019**





# Purpose

- The data extraction tool was developed to assist data collection from RTM model runs. Variables-of-interest are outlined in an Excel spreadsheet, and then fed into python tool to drive RTM data manipulation and export to database outside of EMME environment.



# Data Extraction Tool Steps

1. Add desired variables in Variables\_of\_interest.xlsx spreadsheet
2. Specify *Sheet* name, run the tool
3. Outputs are saved as SQL database

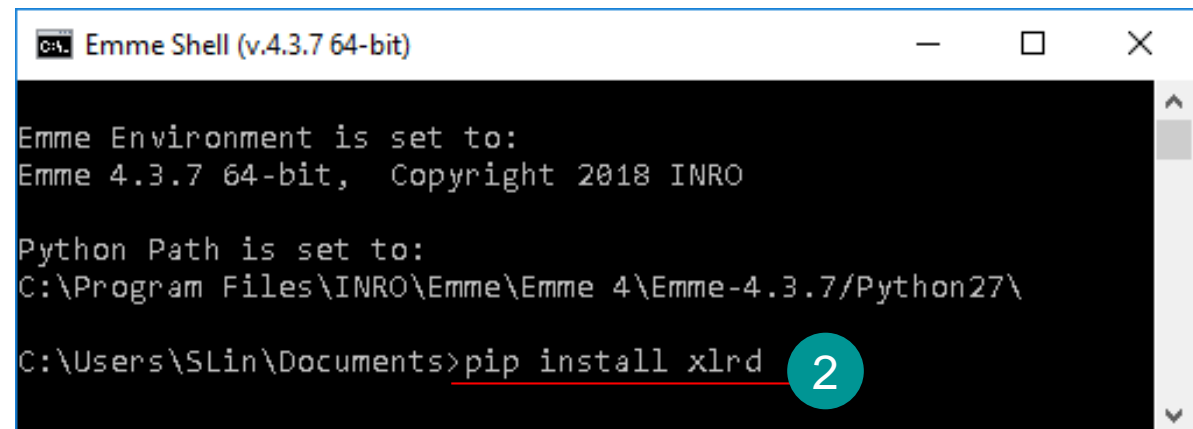
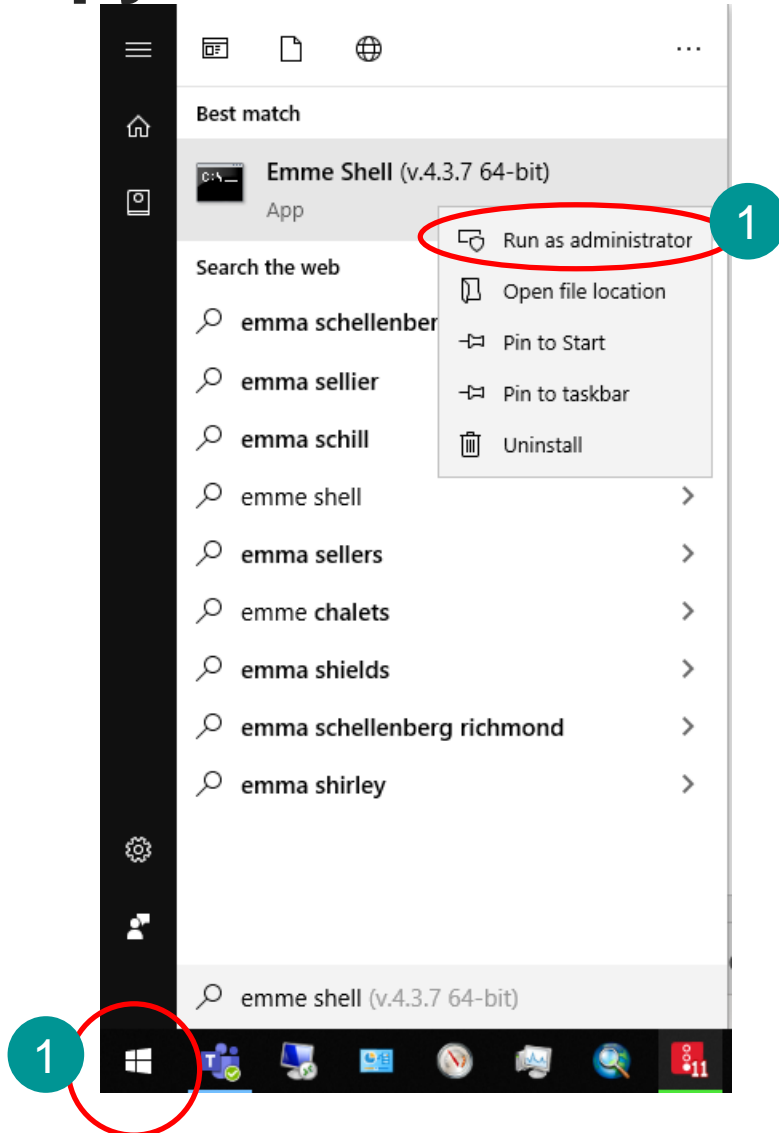


# Pre-requisite: install xlrd library to EMME version of python

By Default, EMME version of python does not support excel file input. To fix this issue:

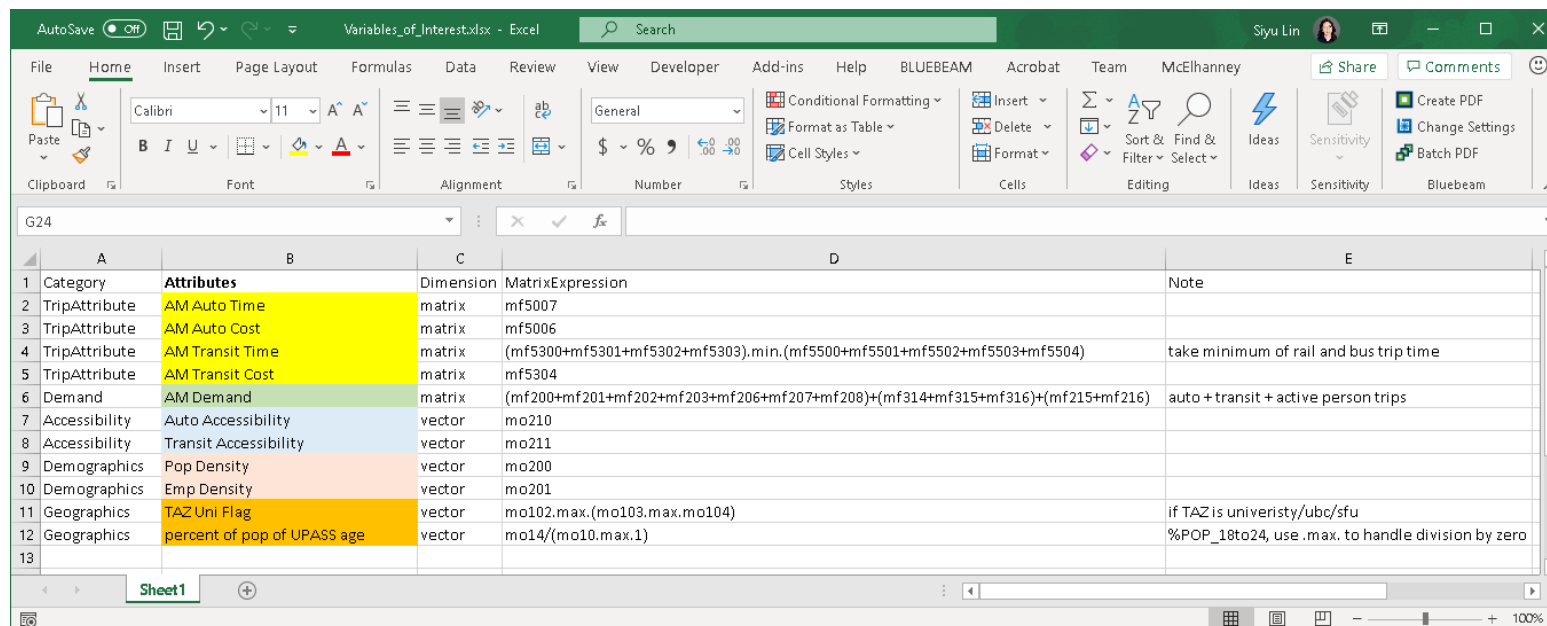
**Step 1:** from Windows menu, open Emme Shell as admin (right click > run as administrator)

**Step 2:** pip install xlrd



# Step 1: Add desired variables in Variables\_of\_interest.xlsx


- **Category:** SQL Table name
- **Attributes:** SQL Table column heading
- **Dimension:**
  - matrix: mf data - to be saved as long table (i, j, attribute)
  - vector: mo data (i, attribute)
- **MatrixExpression:** EMME Matrix Calculation Expression
- **Note:** description of the variable/comments, no impact on the output results



	A	B	C	D	E
	Category	Attributes	Dimension	MatrixExpression	Note
2	TripAttribute	AM Auto Time	matrix	mf5007	
3	TripAttribute	AM Auto Cost	matrix	mf5006	
4	TripAttribute	AM Transit Time	matrix	(mf5300+mf5301+mf5302+mf5303).min.(mf5500+mf5501+mf5502+mf5503+mf5504)	take minimum of rail and bus trip time
5	TripAttribute	AM Transit Cost	matrix	mf5304	
6	Demand	AM Demand	matrix	(mf200+mf201+mf202+mf203+mf206+mf207+mf208)+(mf314+mf315+mf316)+(mf215+mf216)	auto + transit + active person trips
7	Accessibility	Auto Accessibility	vector	mo210	
8	Accessibility	Transit Accessibility	vector	mo211	
9	Demographics	Pop Density	vector	mo200	
10	Demographics	Emp Density	vector	mo201	
11	Geographics	TAZ Uni Flag	vector	mo102.max.(mo103.max.mo104)	if TAZ is university/ubc/sfu
12	Geographics	percent of pop of UPASS age	vector	mo14/(mo10.max.1)	%POP_18to24, use .max. to handle division by zero



## Step 2: Specify *Sheet* name, run the tool



Export Data from Model Run

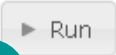
Please make sure mf9999 and mo9999 are not in use.

1


Worksheet Name for Variables of Interest

Sheet1

2



► Recent history

  
© 2018 INRO. All rights reserved.



# Step 3: Outputs are saved as SQL database

*Variables\_of\_Interest\_Results.db*

File Edit View Help

New Database Open Database Write Changes Revert Changes

Database Structure Browse Data Edit Pragmas Execute SQL

Table: TripAttribute

	i	j	AM Auto Time	AM Auto Cost	AM Transit Time	AM Transit Cost
	Filter	Filter	Filter	Filter	Filter	Filter
1	1	1	1.1899725198...	0.1427967101...	0.0	0.0
2	1	2	10.546131134...	1.7259731292...	1320.00122070313	2.0999999046...
3	1	3	58.261955261...	15.621187210...	734.7001953125	2.0999999046...
4	1	4	75.435073852...	18.673389434...	844.780822753906	2.0999999046...
5	1	5	96.444473266...	21.948040008...	878.175537109375	2.0999999046...
6	1	6	102.53063964...	22.873121261...	861.136596679688	2.0999999046...
7	1	7	130.91683959...	28.928415298...	898.287841796875	2.0999999046...
8	1	8	128.38899230...	29.055765151...	865.492736816406	2.0999999046...
9	1	9	146.23208618...	30.023180007...	847.181640625	2.0999999046...
10	1	10	153.10571289...	31.443977355...	922.102905273438	2.0999999046...
11	1	11	161.21272277...	33.725143432...	922.830810546875	2.0999999046...
12	1	101	2.3799450397...	0.2855934202...	1289.68737792969	2.0999999046...
13	1	102	133.29974365...	27.442411422...	814.635925292969	2.0999999046...

• Category

• Attributes

• Matrix data