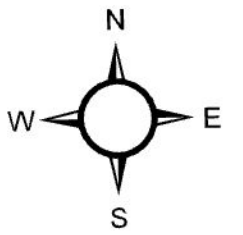# Predicting Annual Murders in Toronto Neighborhoods
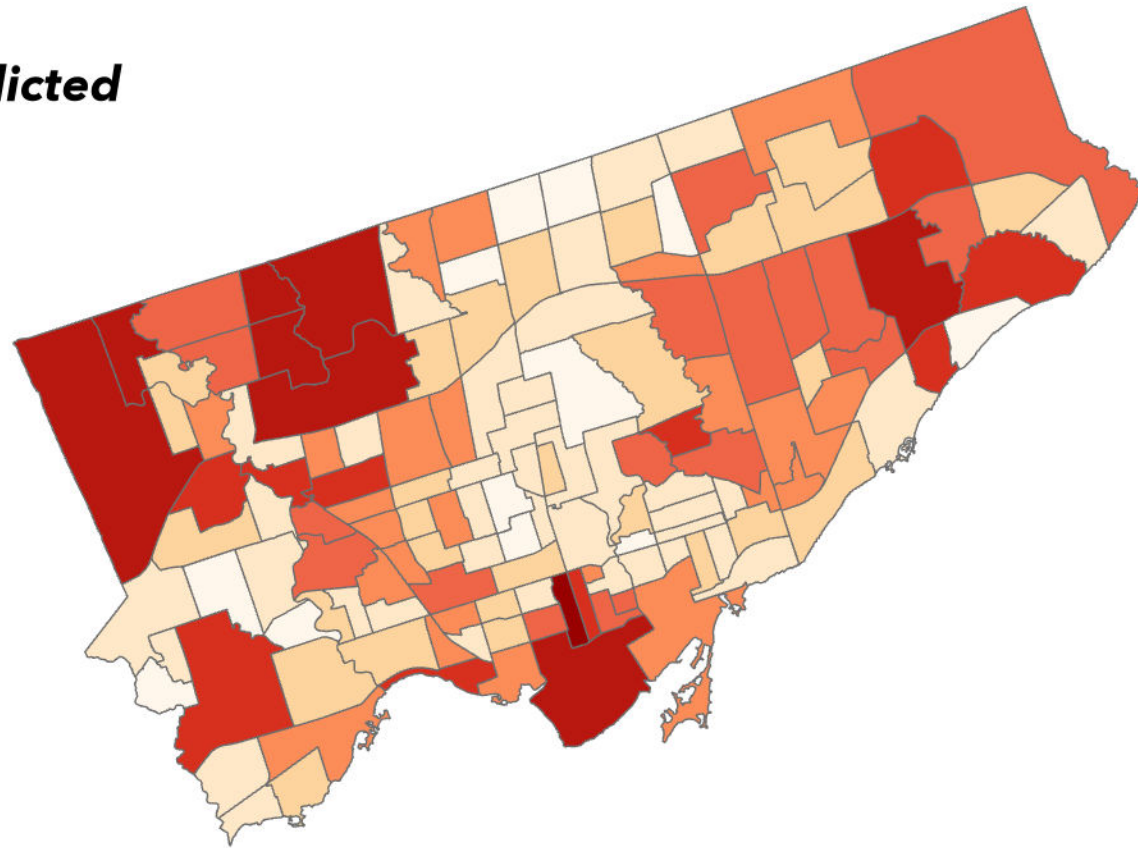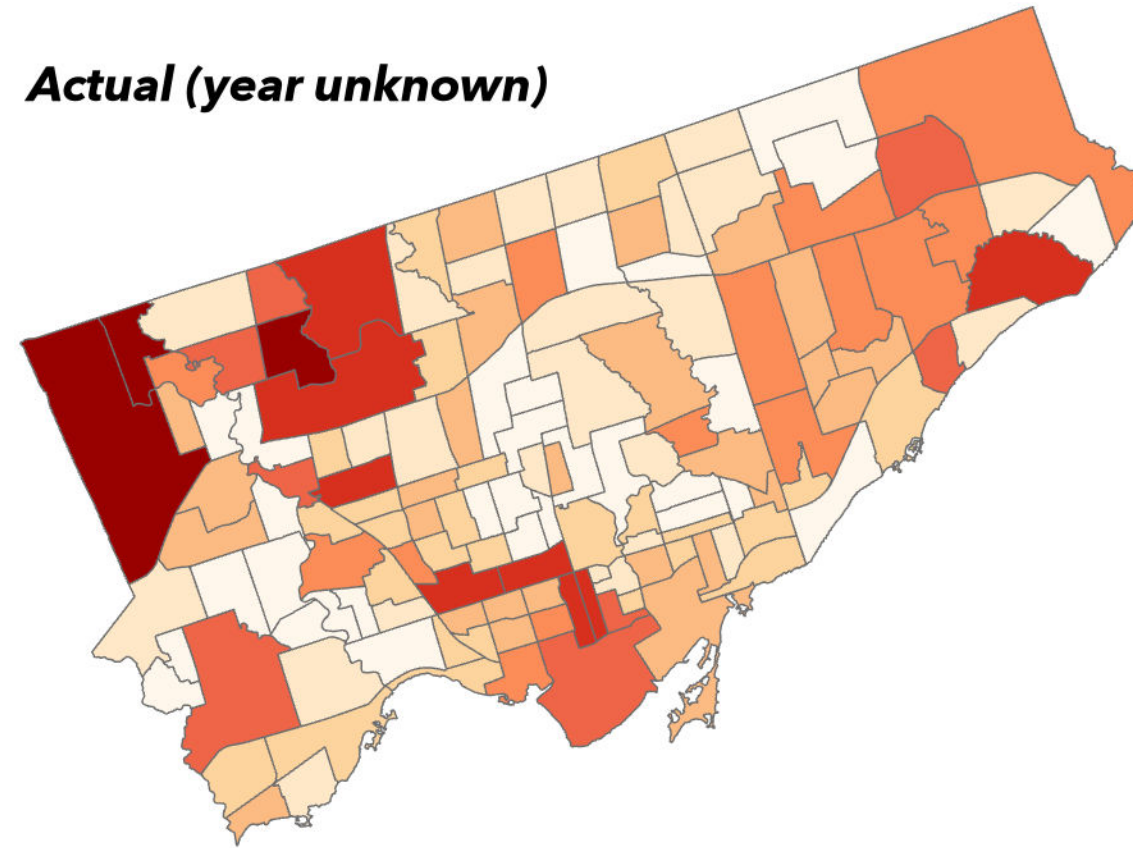## GWR Predicted Murder vs Actual Murder Numbers

TORONTO

N W E S

Predicted

Actual (year unknown)

Annual Murders

- 1 - 6
- 7 - 11
- 12 - 16
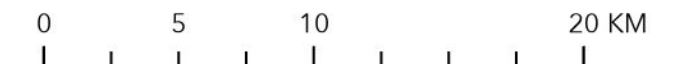- 17 - 22
- 23 - 30
- 31 - 41
- 42 - 60
- 61 - 75
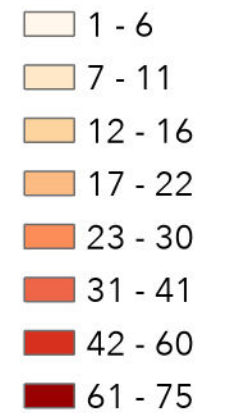
Scale: 1:280,000

Spatial Reference:
Name: NAD 1983 UTM Zone 17N
Datum: North American 1983
Projection: Transverse Mercator

0   5   10   20 KM

Comparing predicted annual murder numbers per Toronto neighborhood, using a Generalized Weighted Regression (GWR) analysis, to actual murder numbers

Neighborhood dependent variables:
- Social Assistance Requests
- Debt Risk Score
- Chronic Obstructive Pulmonary Disease (COPD)
- Asthma Rate
- Employment

Explanatory Variable results (GWR):
- R2: 0.6561
- AdjR2: 0.6298
- AICc: 1018.2739

Ordinary Least Square Explanatory Variable Results:

Variable	Coefficient [a]	StdError	t-Statistic	Probability [b]	Robust_SE	Robust_t	Robust_Pr [b]	VIF [c]
Intercept	69.889482	36.991399	1.889344	0.061007	37.651554	1.856218	0.065621	--------
SOCASSISTREC	0.005057	0.000747	6.771285	0.000000*	0.001020	4.958995	0.000003*	2.108565
DEBTRISKSCOR	-0.092757	0.043723	-2.121464	0.035717*	0.044928	-2.064581	0.040886*	2.616113
COPD_RATE	-12.437678	5.150664	-2.414772	0.017086*	5.695467	-2.183785	0.030711*	1.732441
ASTHMA_RATE	16.222059	7.313531	2.218088	0.028224*	7.346468	2.208144	0.028926*	1.835586
EMPLOYMENT	0.000308	0.000043	7.185680	0.000000*	0.000069	4.469819	0.000019*	1.118839