



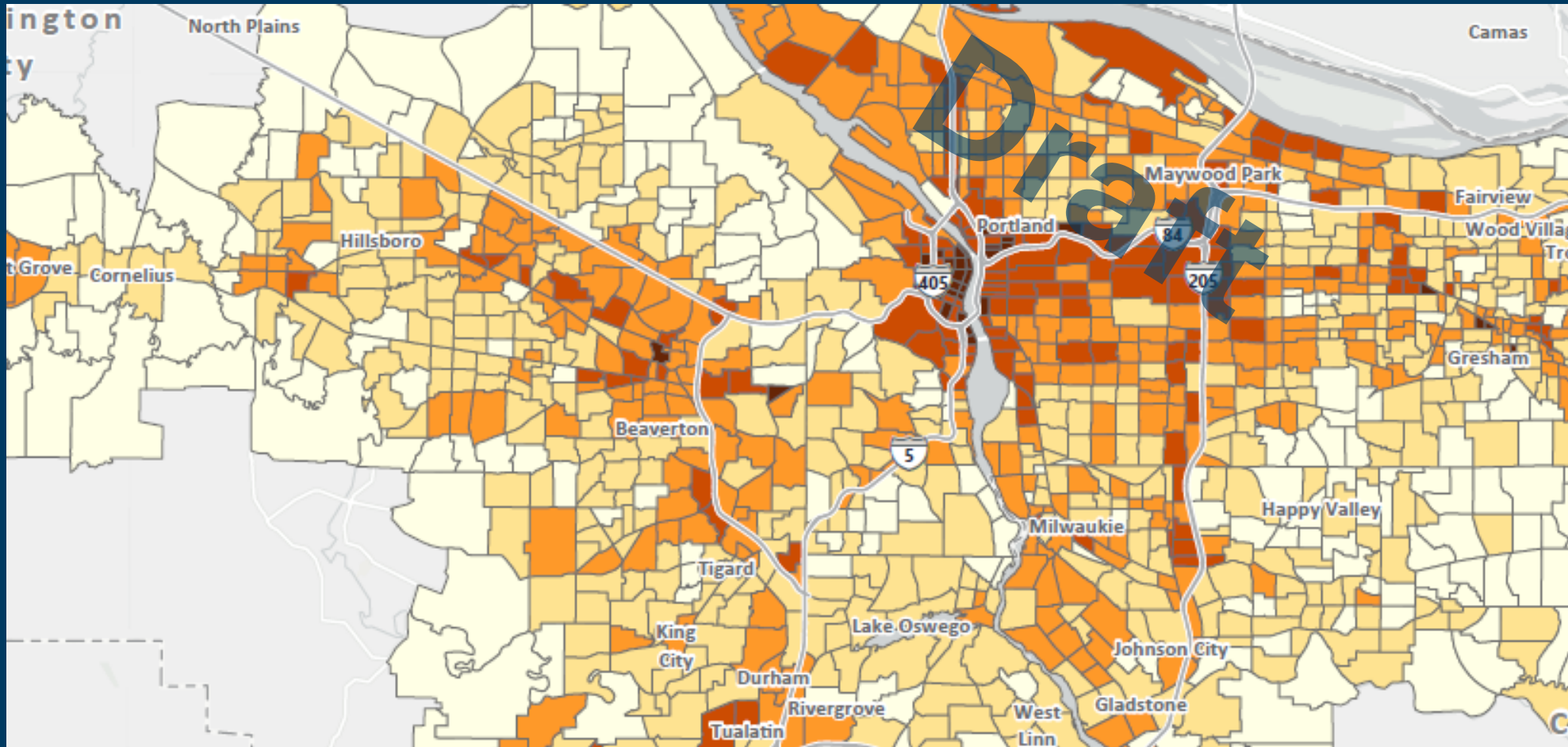
Metro

April 2026

Making a Regional Crash Prediction Model

Kadin Mangalik

What we are trying to do



This is Not

- A demonstration of a completed tool
- Final results to publish

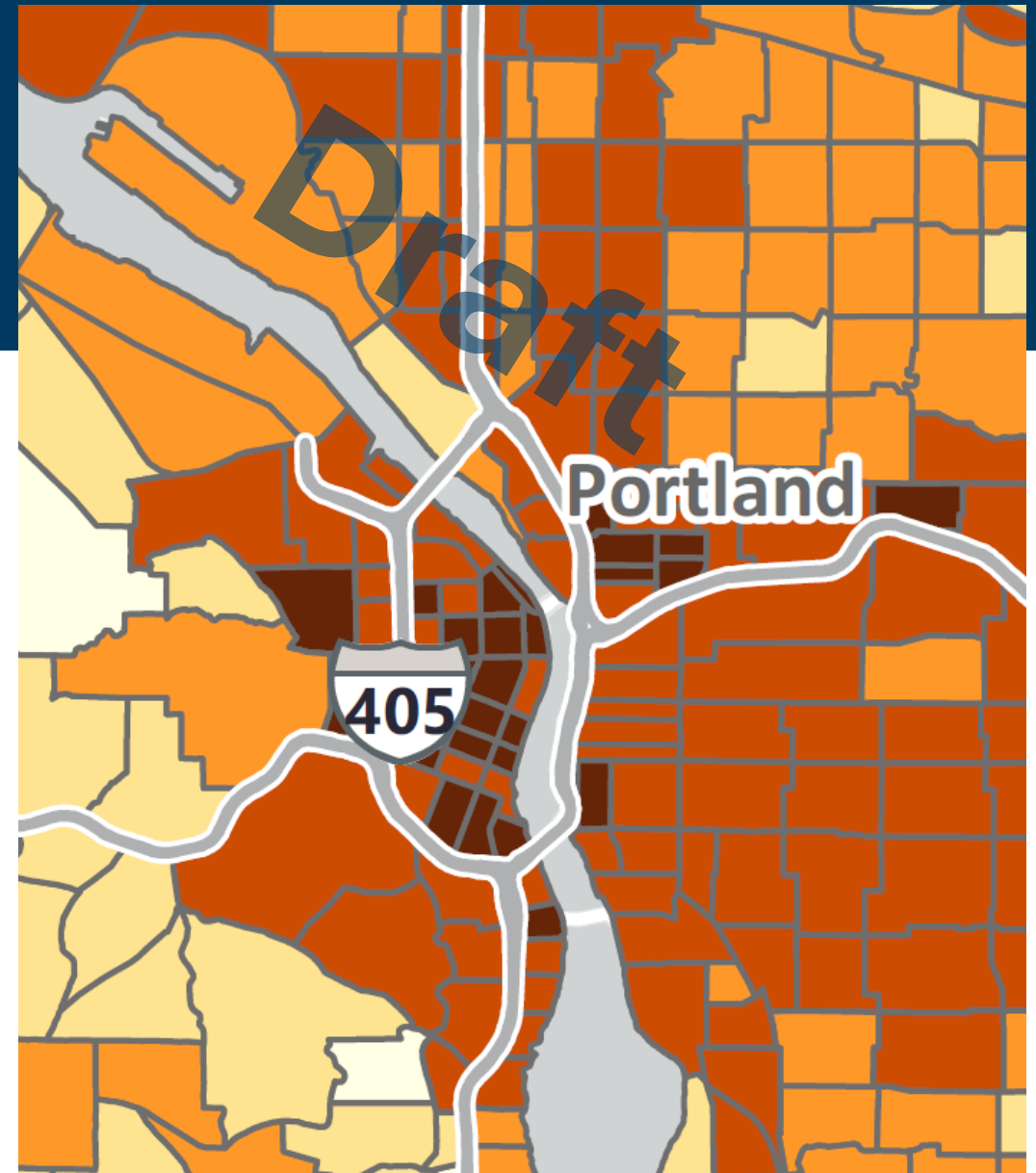
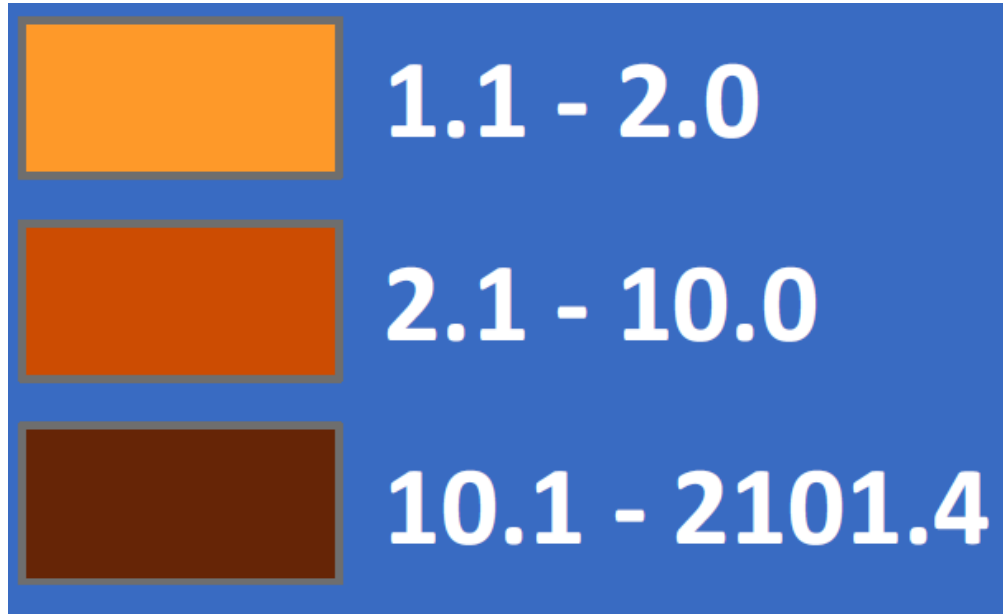
The Journey

Table 30-2. Data Inputs for MPO-Level CPMs

Severity	Bicycle/ Pedestrian	Total Crash
K		<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total intersections
KA	<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total population • Total employment • Transit stop density • Total walk, bike, and transit commuting proportion • Total Area 	<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total intersections • Total Area
KABC		<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total intersections • Total Area
KABCO	<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total population • Total employment • Transit stop density • Total walk, bike, and transit commuting proportion • Total Area 	<ul style="list-style-type: none"> • Total daily VMT for public roads in the SAZ • Median income in dollars per annum (\$2017) • Total intersections • Total Area

Source: NCHRP

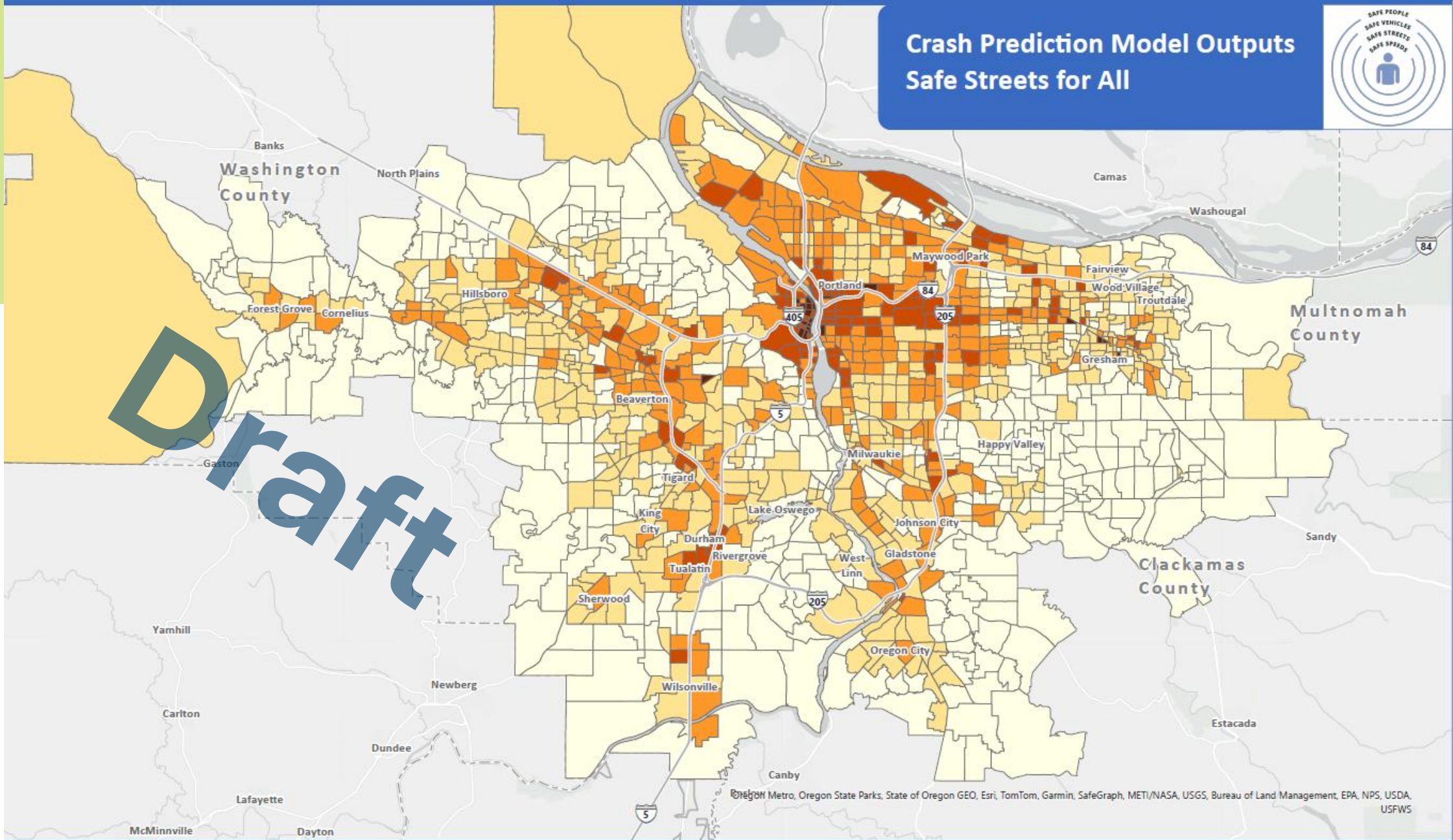
The Journey



What we have

2020 Base Bike/Ped Serious

Crash Prediction Model Outputs Safe Streets for All



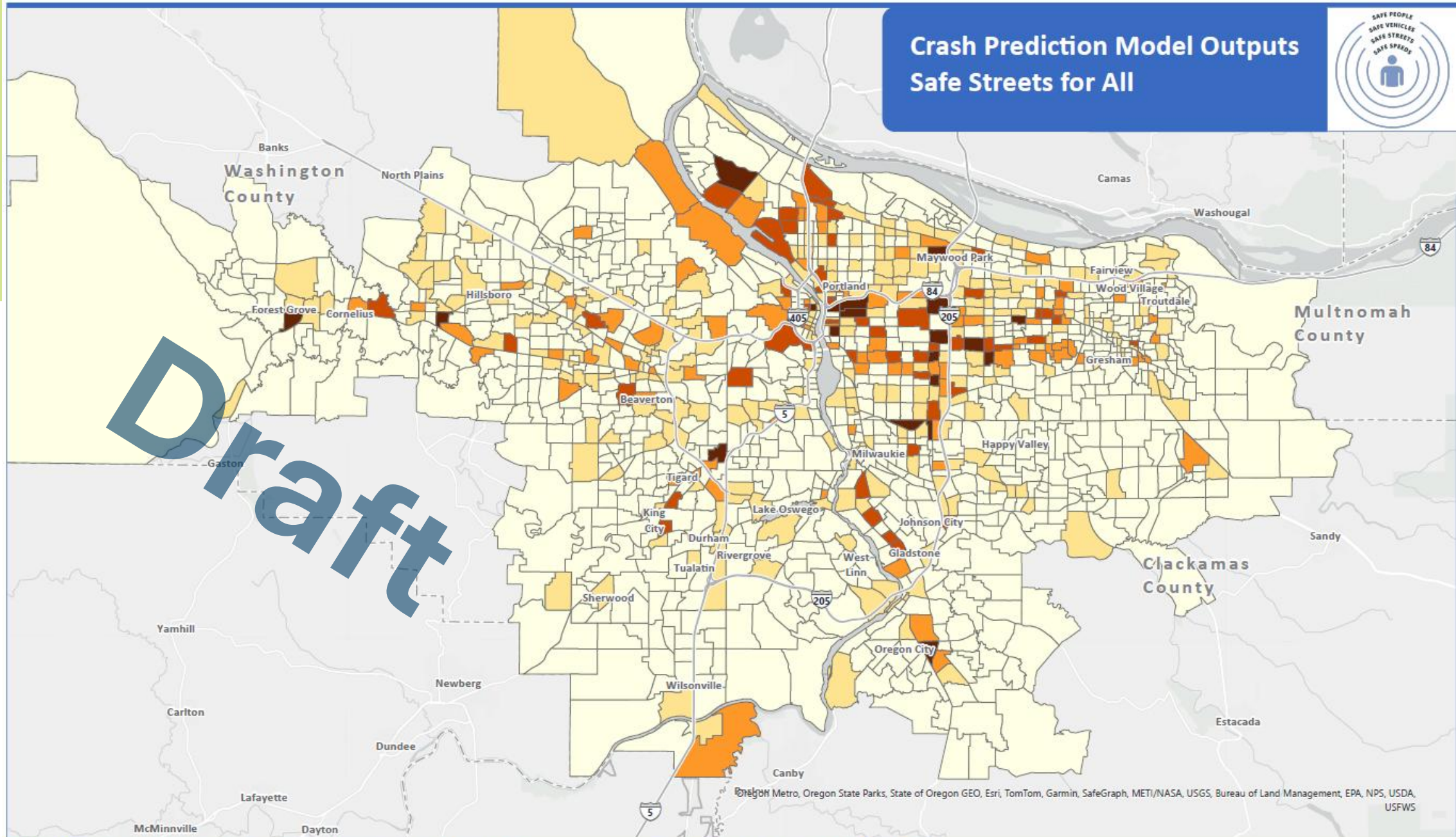
Draft

Metropolitan Planning Area	Base Calibrated: Bike and Ped Serious Crashes	0.3 - 0.5		
Counties	0.0 - 0.1	0.6 - 1.5		
Freeways	0.2 - 0.3	1.6 - 154.3		

What we have

2020 Actual Bike/Ped Serious

Draft



Metropolitan Planning Area
Counties
Freeways

Observed: Bike and Ped Serious Crashes
0.0 - 0.1
0.2 - 0.3
0.4 - 0.5
0.6 - 1.0
1.1 - 1.8

Observed: Bike and Ped Serious Crashes
0.0 - 0.1
0.2 - 0.3
0.4 - 0.5
0.6 - 1.0
1.1 - 1.8

0 10 Miles
0 10 Kilometers

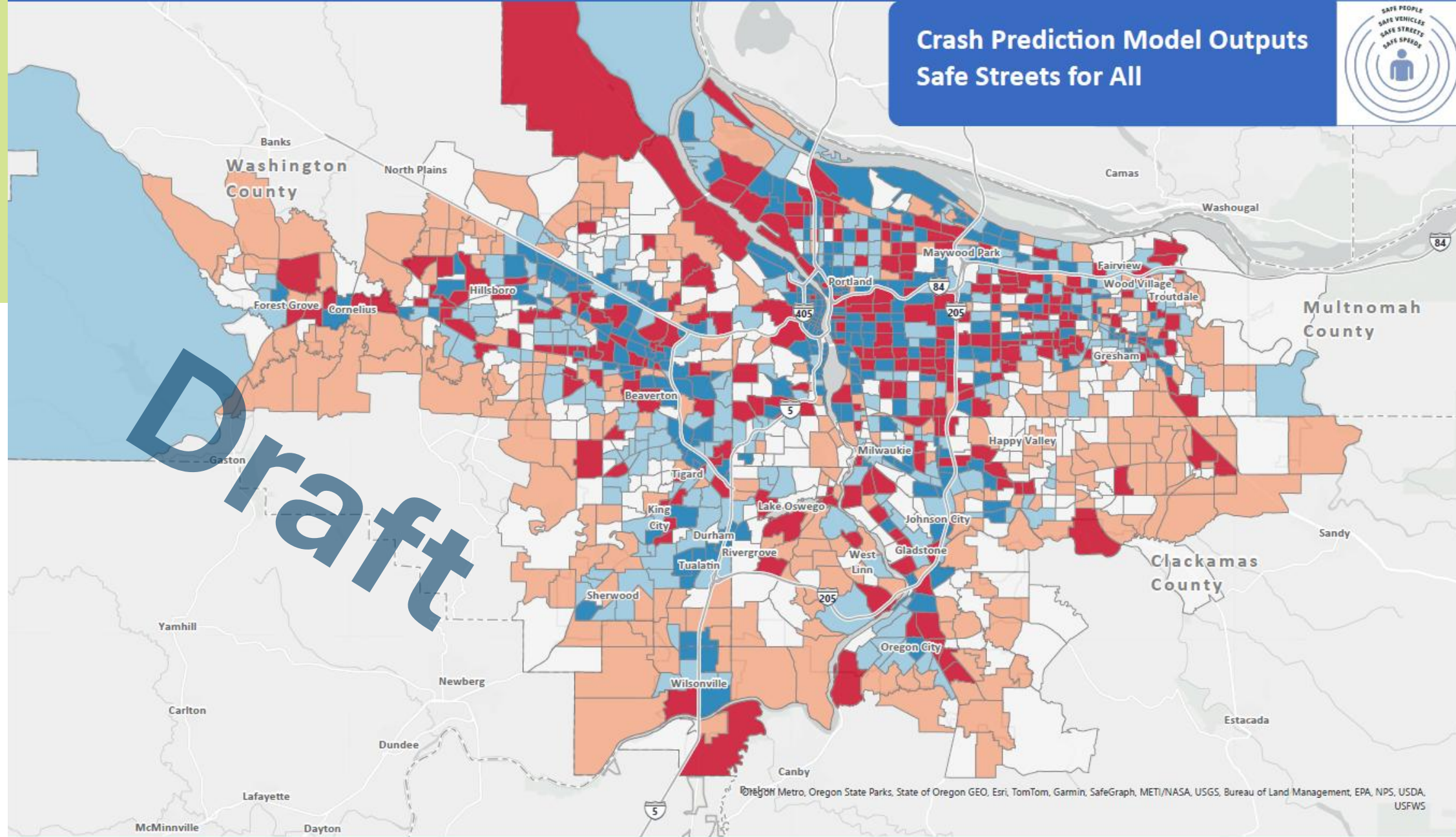
What we have

Crash Prediction Model Outputs Safe Streets for All



2020
Excess
Bike/Ped
Serious

Draft



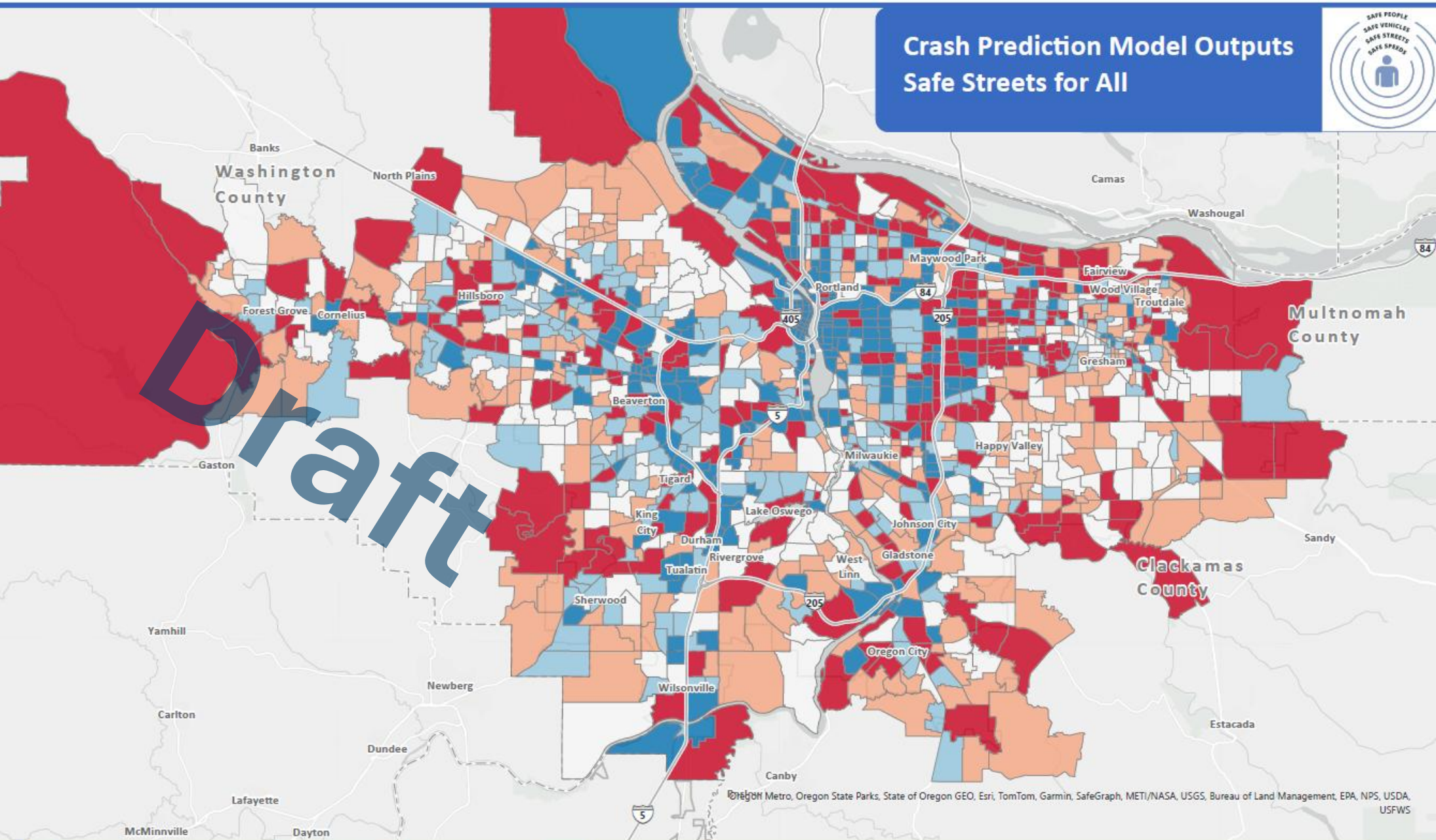
Metropolitan Planning Area	Excess Bike and Pedestrian Serious Crashes	0.00 - 0.00
Counties	-97.26 - -0.04	0.01 - 0.01
Freeways	-0.03 - -0.01	0.02 - 0.54

0 10 Miles
0 10 Kilometers

Metro

What we have

2020 Excess All Fatal



 Metropolitan Planning Area	 Excess Fatal Crashes	 0.00 - 0.00
 Counties	 -0.94 - -0.02	 0.01 - 0.01
 Freeways	 -0.01 - -0.01	 0.02 - 0.28

Date produced: 12/9/2025 | Path: M:\plan\drc\projects\25047_Crash_Prediction_Model\0_MXD\CPM_Mapping\CPM_Mapping.aprx | Map credits: Metro DRC





Thank you

Thank you to Metro project team

Lake McTighe, Kate Gregory, Kyle Hauger

Kadin Mangalik

Kadin.Mangalik@oregonmetro.gov

oregonmetro.gov

