

WALKING BEHAVIOUR AND THE BUILT FORM

WHY DO WE ANALYZE IT AND HOW CAN WE DO IT BETTER?

PRESENTERS:

FRANCISCO ALANIZ URIBE

WALK21 2017

CALGARY, CANADA

21 SEP 2017



00
Ur
urban

10
Lb
lab

Urban planners and designers have identified a series of necessary qualities for a public place to be considered good:

- density
- legibility
- mix of uses
- diversity of users
- public realm quality
- etc...



Zocalo, Mexico City

Some public places are better than others. Better means... used by more people? Enjoyed by more people?



Hong Kong

Why did William H. Whyte, Jan Gehl, Lofland, Appleyard and others observed the public realm?

To document and learn if there is a relationship between the built environment and the way people use it.

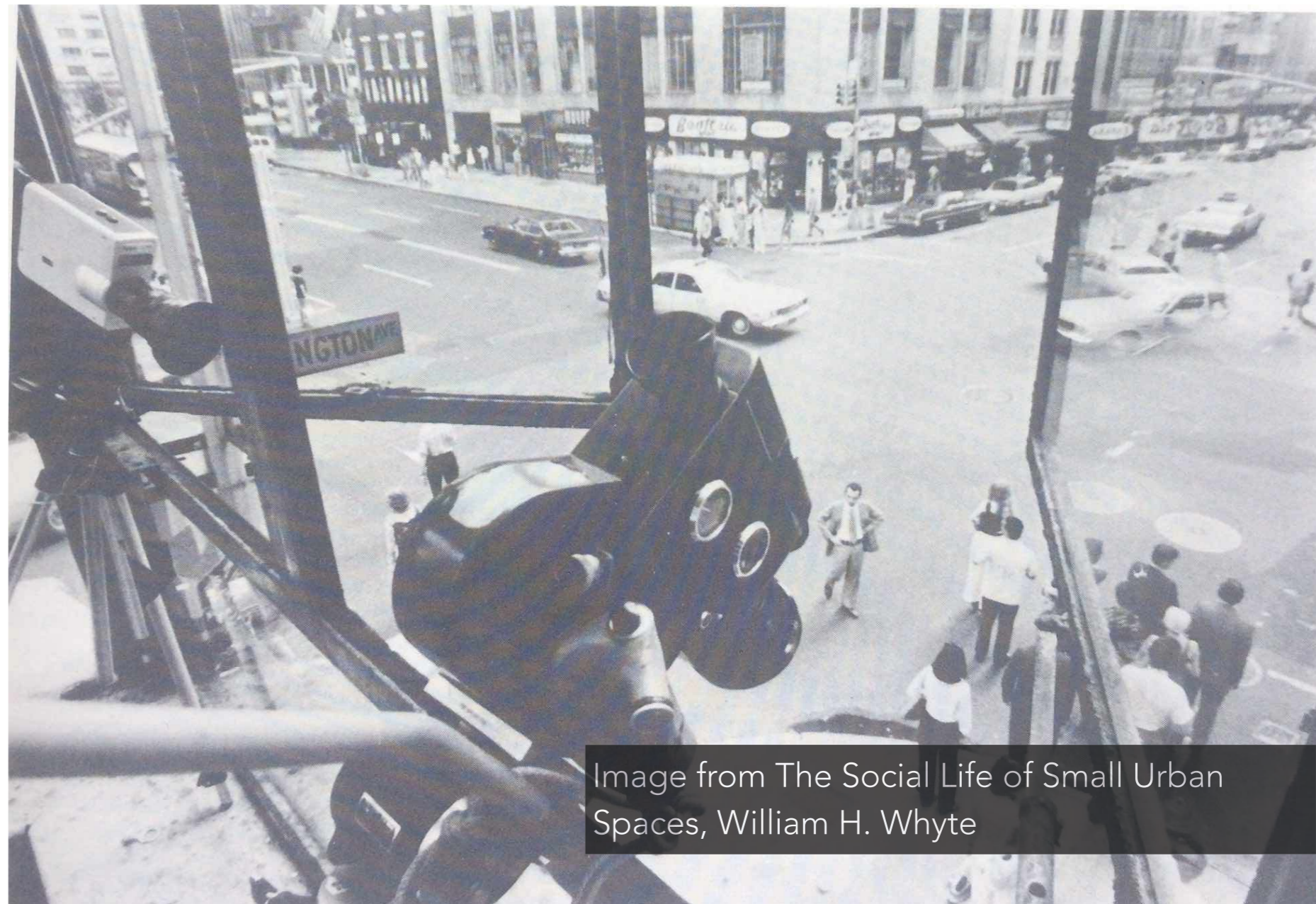
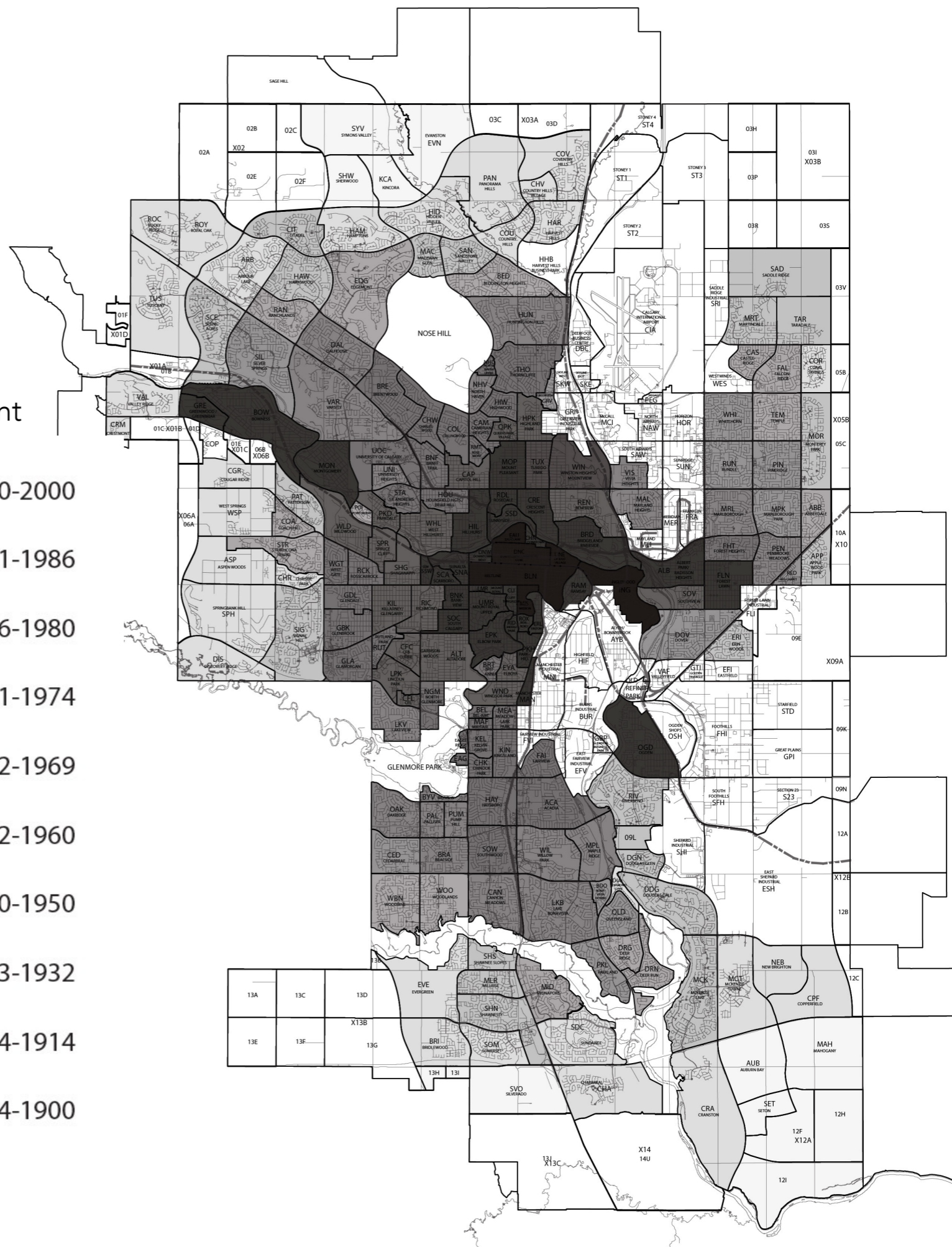
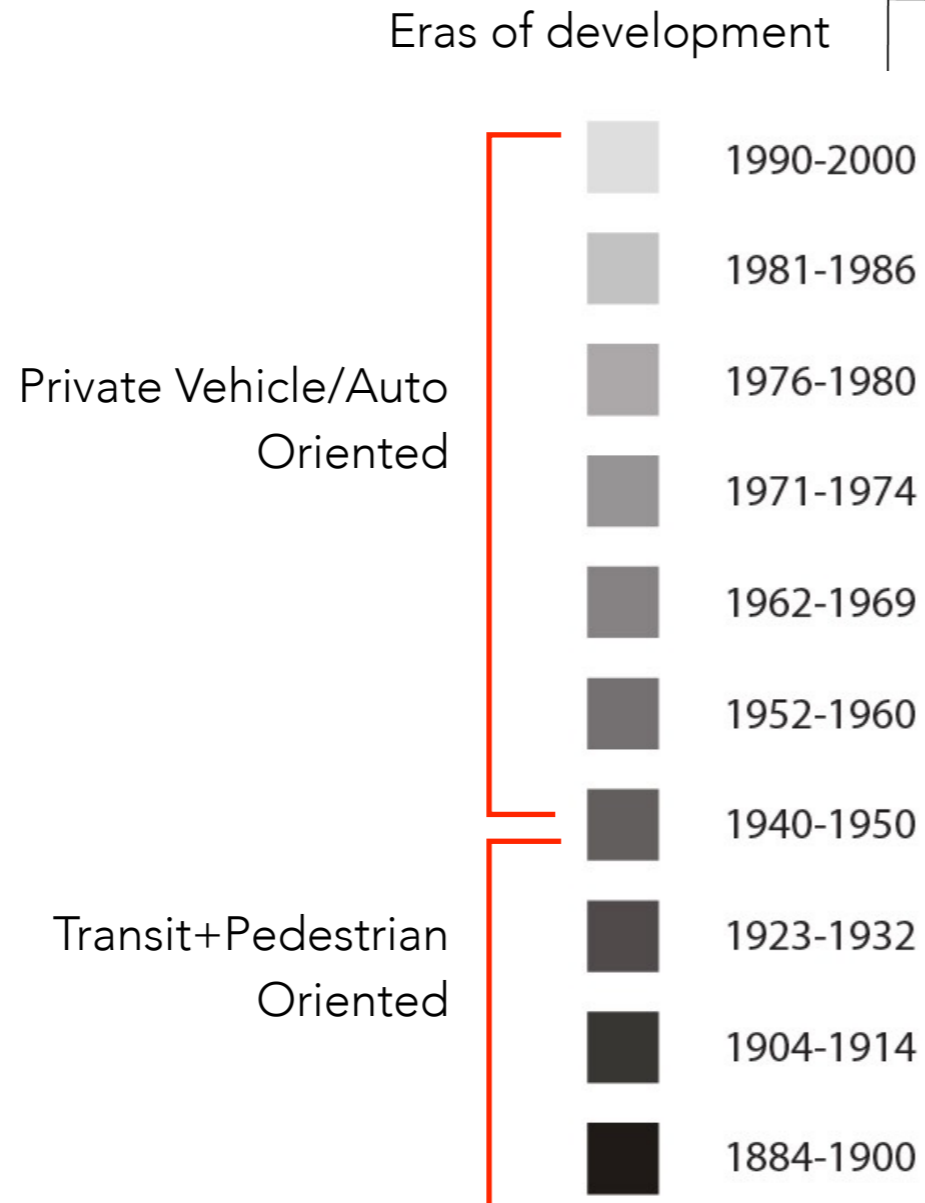


Image from *The Social Life of Small Urban Spaces*, William H. Whyte

Calgary as our case study

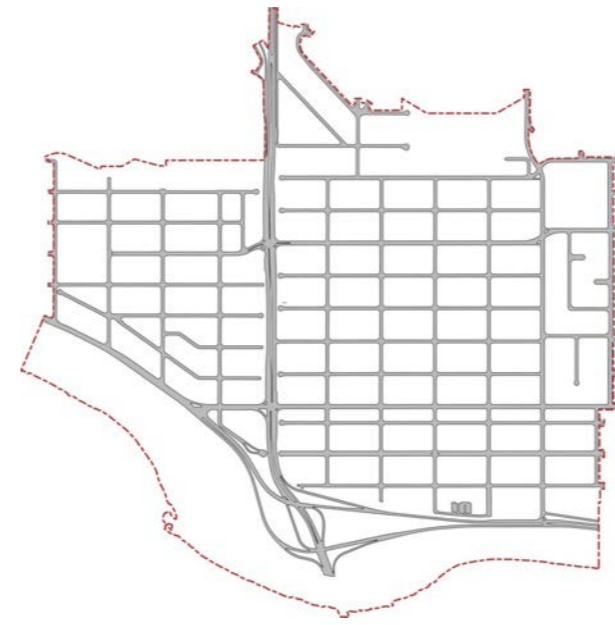
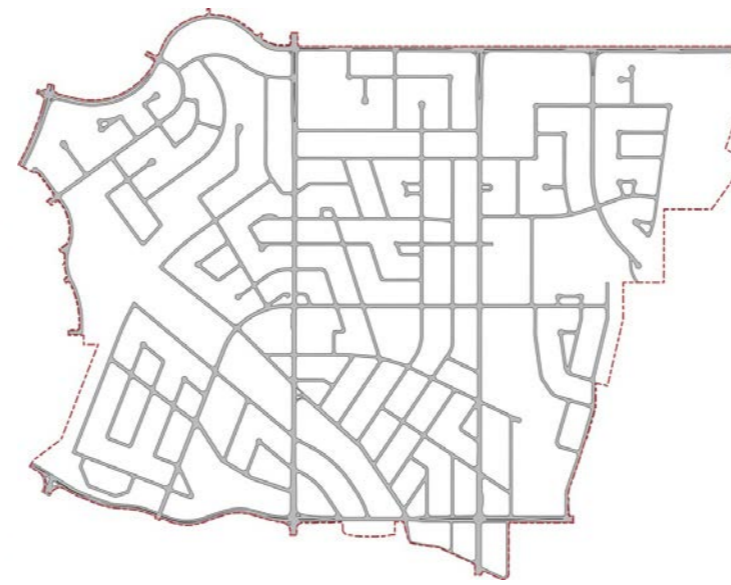
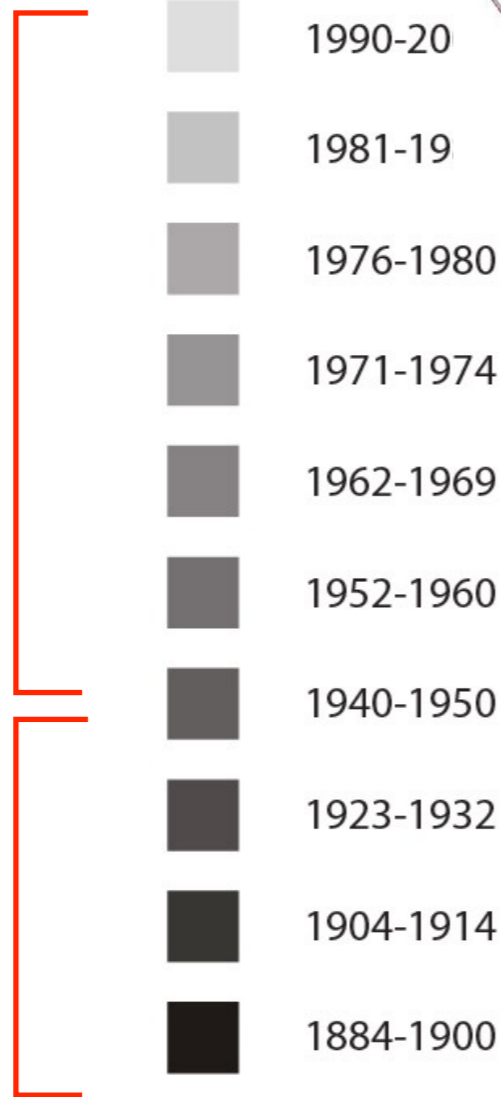
Eras of development correspond to types of neighbourhood design



Eras of development and neighbourhood block pattern

Private Vehicle/Auto Oriented

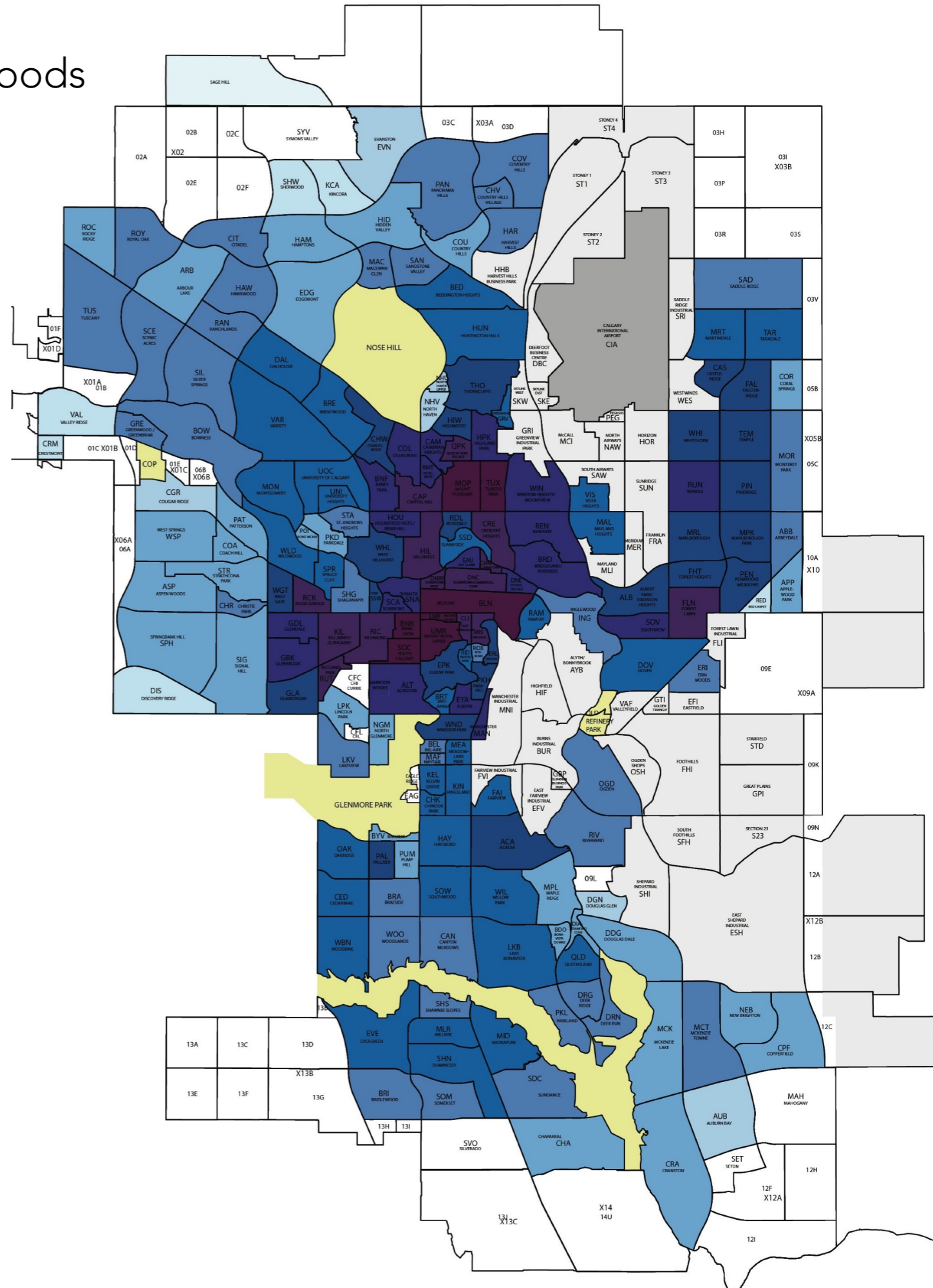
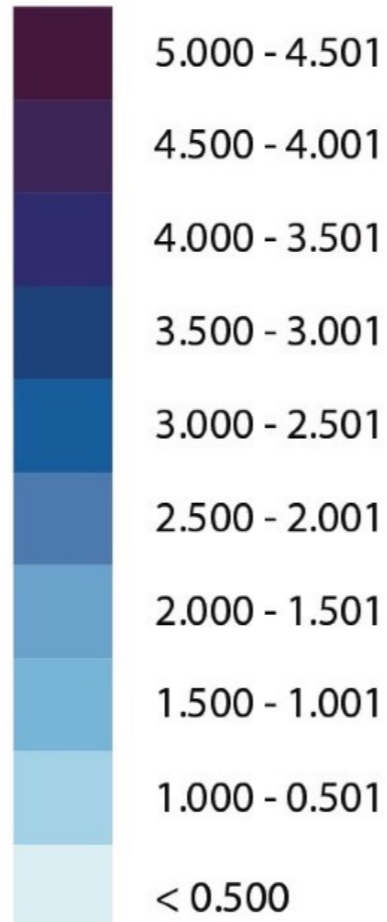
Transit+Pedestrian Oriented



We have discovered walkable neighbourhoods are more conducive to a higher degree of physical activity.

Self-reported health questionnaire

Mean Walkshed Size (km²)



And more potential social interactions

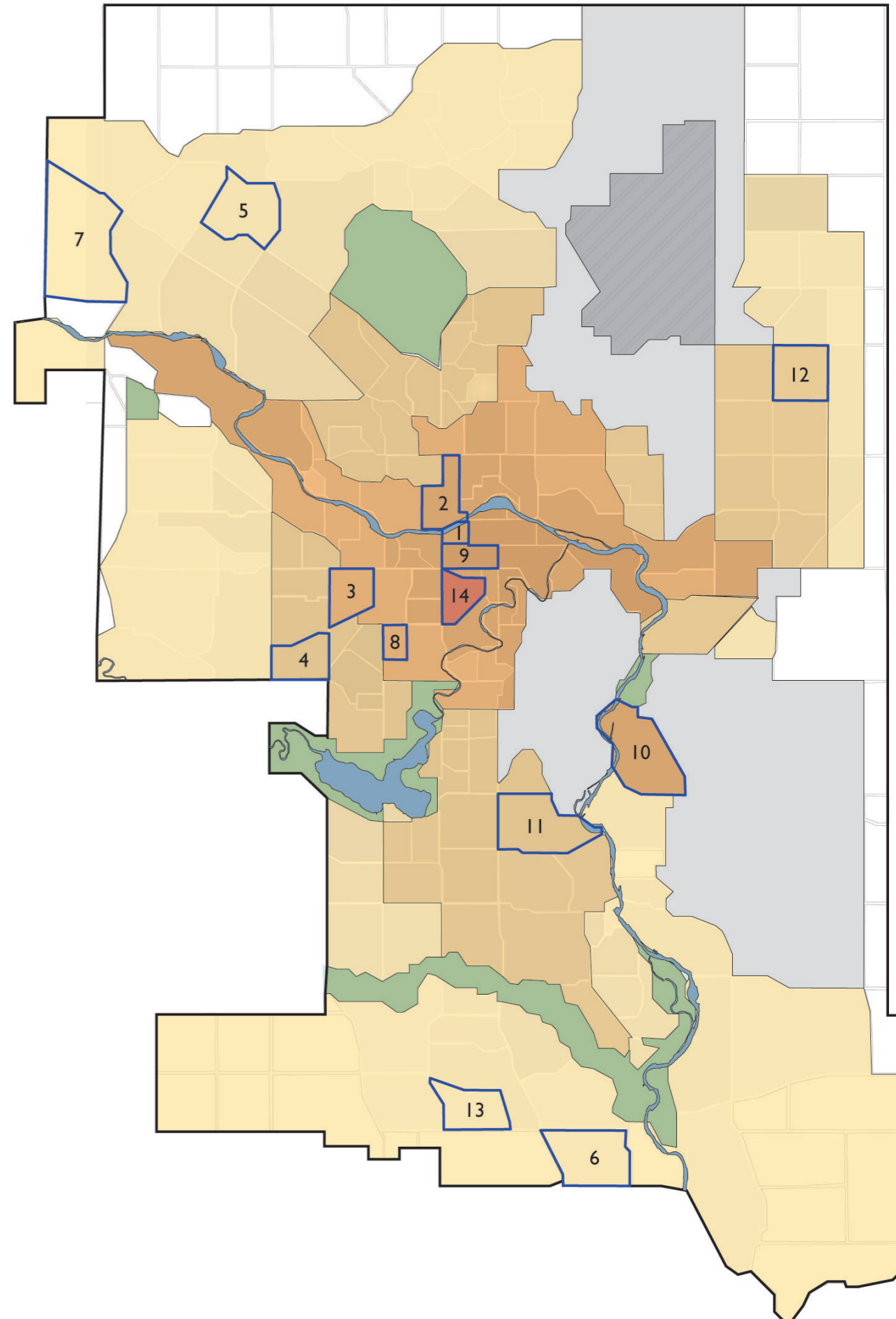
Self-reported health questionnaire

□ Social Connectivity Study Neighbourhoods

1. Downtown West
2. Hillhurst
3. Killarney/Glengarry
4. Glamorgan
5. Hawkwood
6. Chaparral
7. Tuscany
8. Garrison Woods
9. Connaught
10. Ogden
11. Acadia
12. Temple
13. Somerset
14. Mount Royal

Development Types

- Grid or Modified Grid Block Pattern
- Warped Grid Block Pattern
- Curvilinear Block Pattern
- Special Cases
- Industrial Areas
- Airport



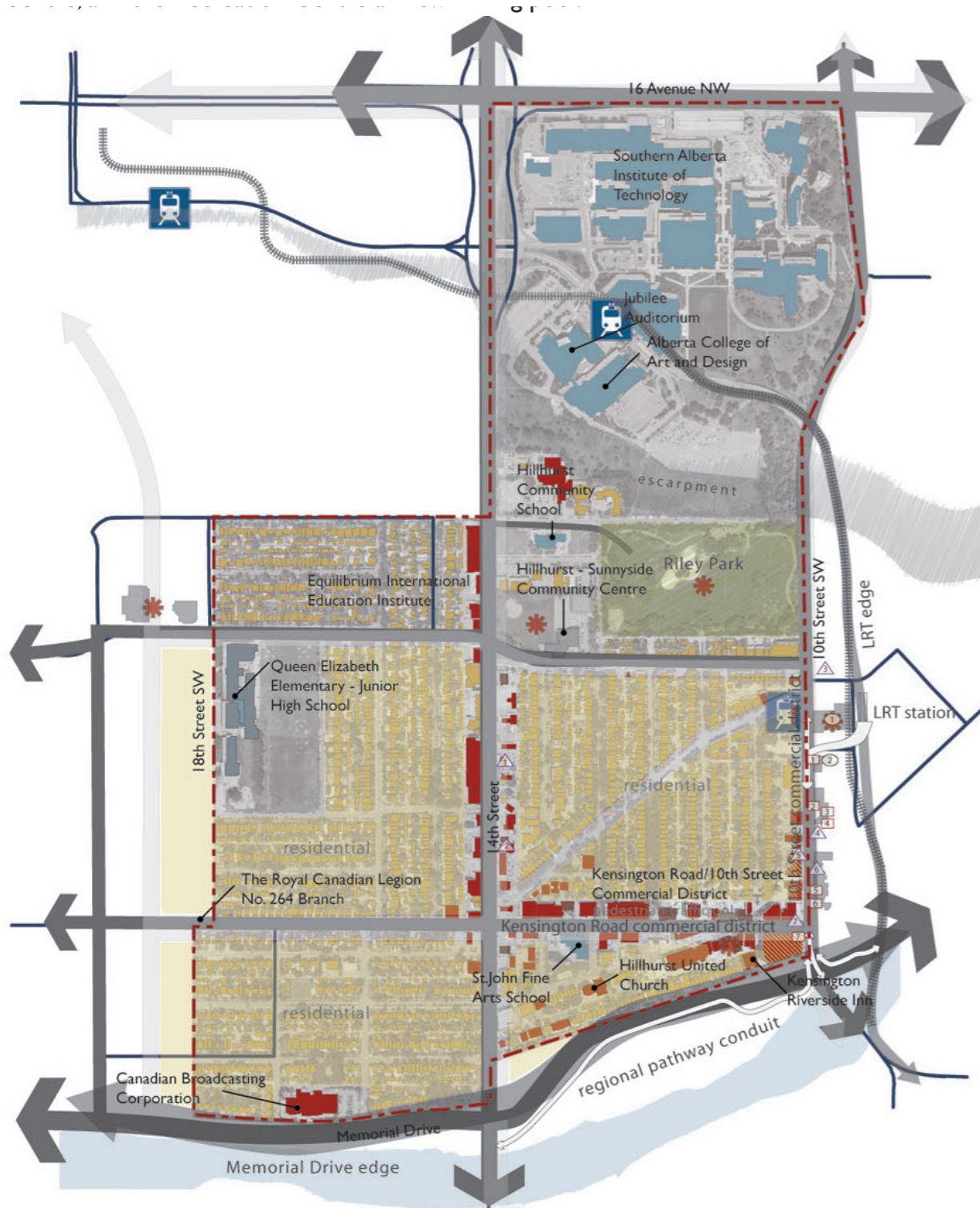
Suburban neighbourhood of Calgary



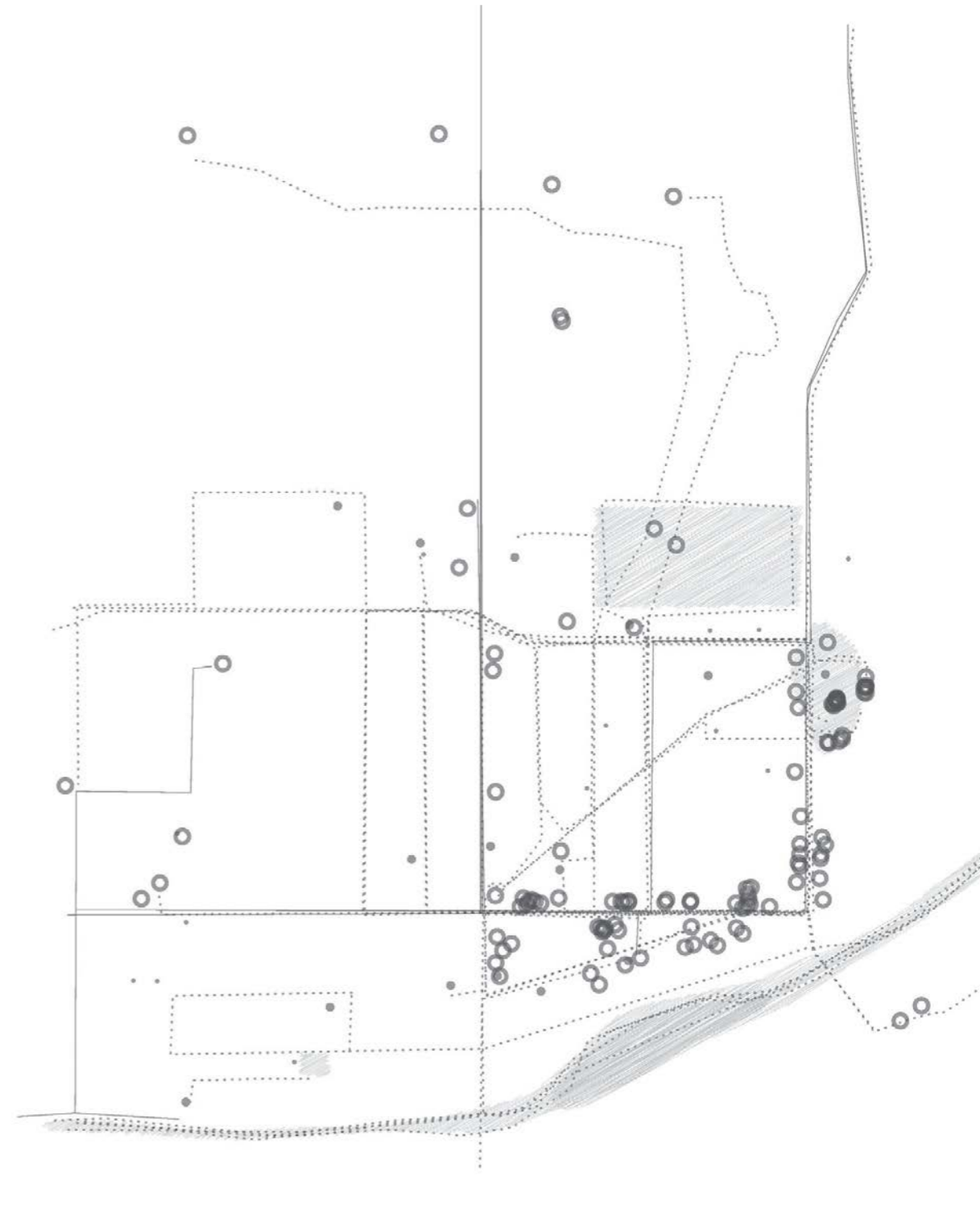
Neighbourhood of Chaparral, Calgary



Inner-city neighbourhood of Calgary



Neighbourhood of Hillhurst, Calgary



Measuring movements

Using the **GPS** in our pockets

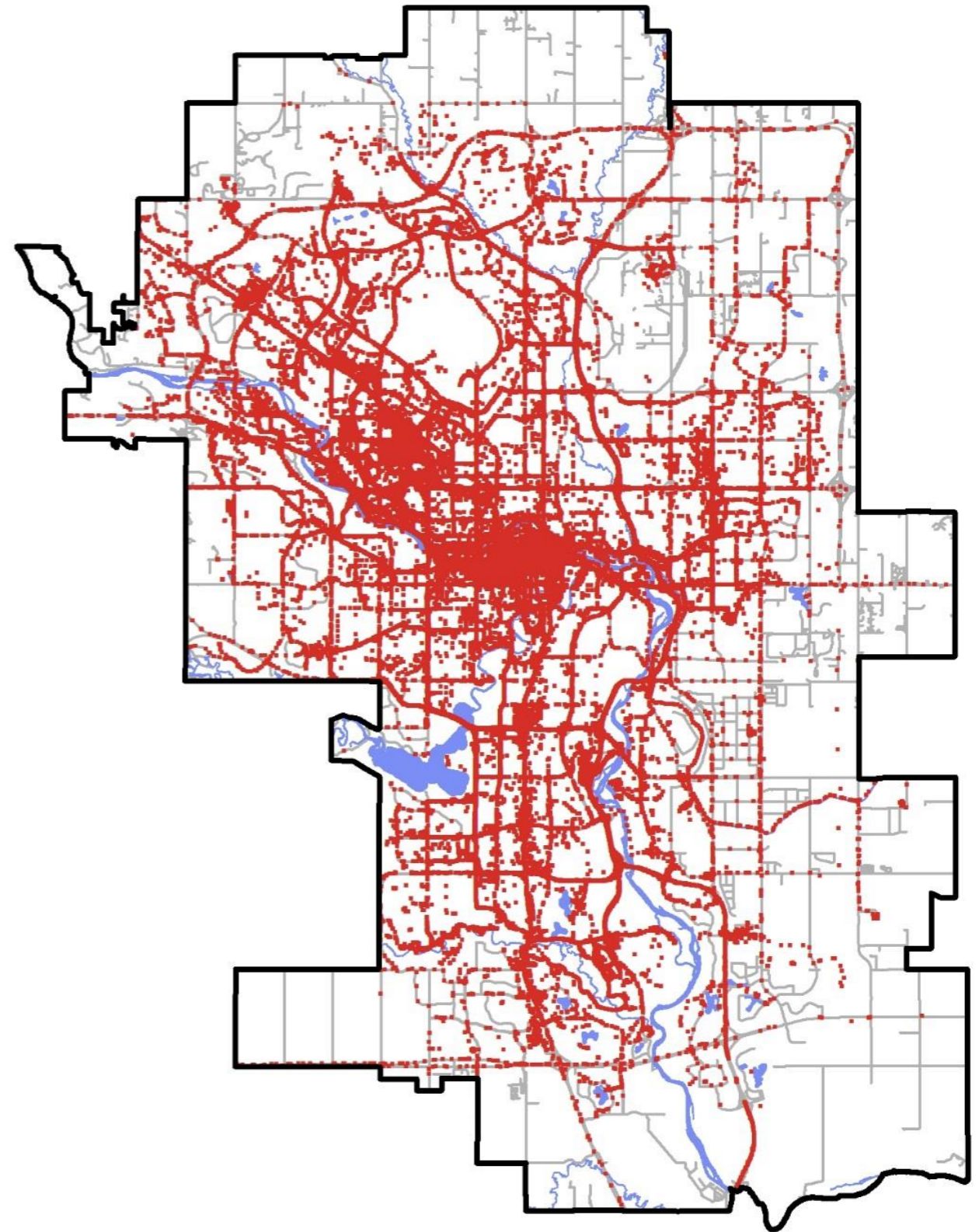
The student walkshed

Smartphone data for a year

Over 230 participants with years-worth
of location data

Billions of points with metadata

Speed filter



How can we observe and analyze the interaction of people and the street-wall?



Bahnhofstrasse, Zurich

Wallisellen, Switzerland



Cooper Union New York



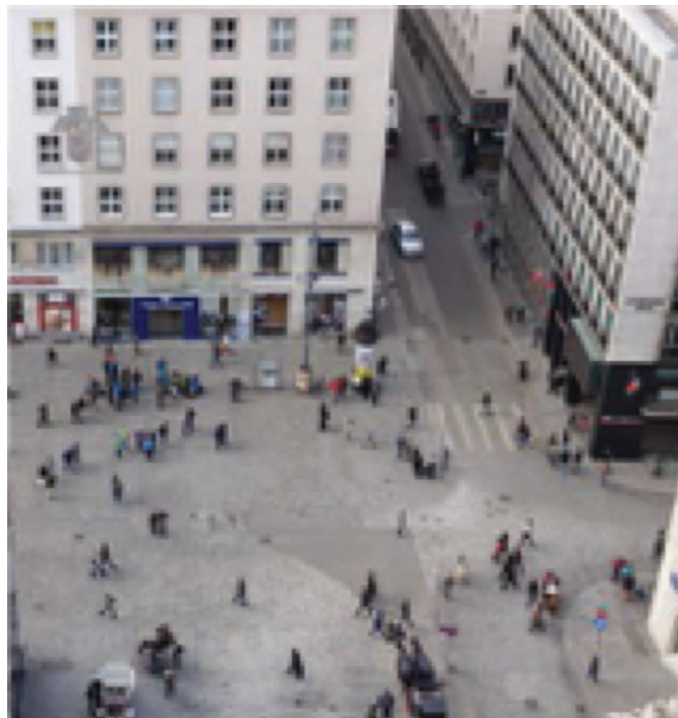
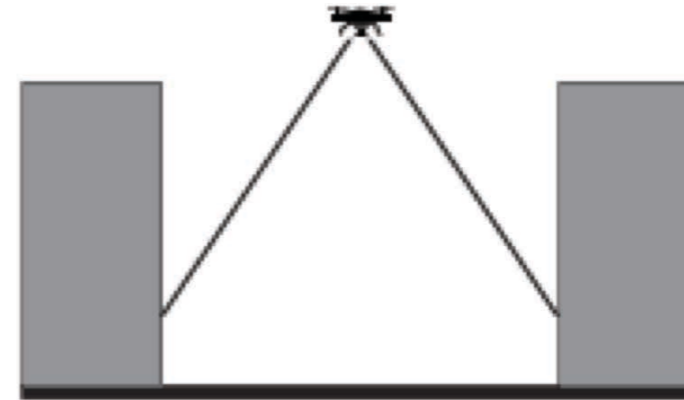
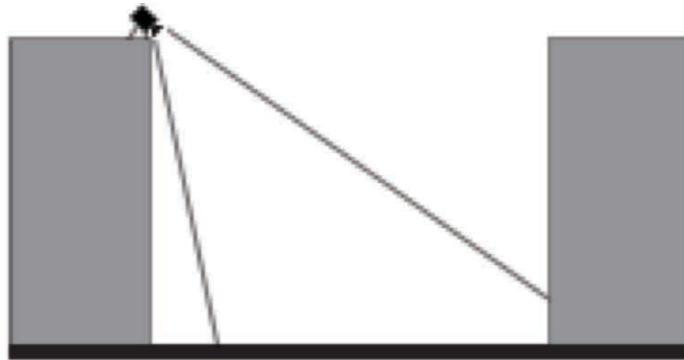
Seattle Public Library



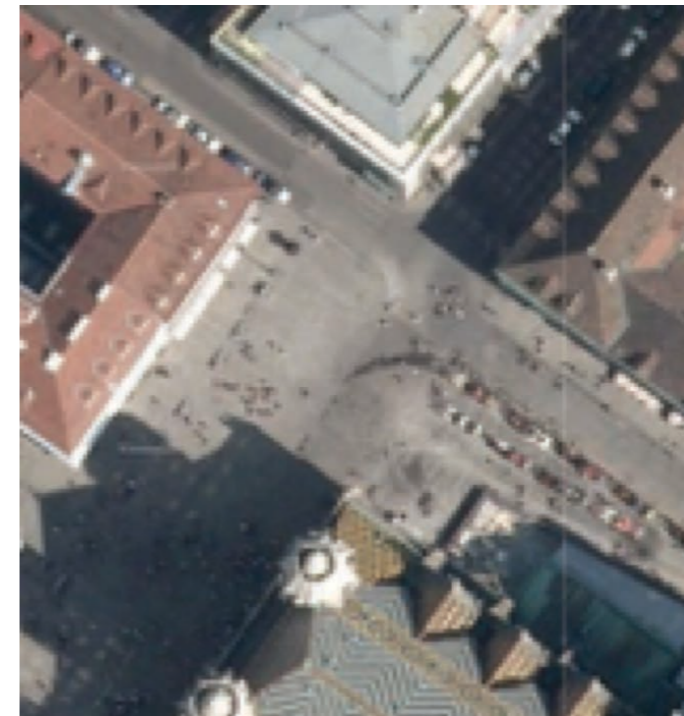
Seattle Public Library



How can we observe and analyze the interaction of people and the street-wall?



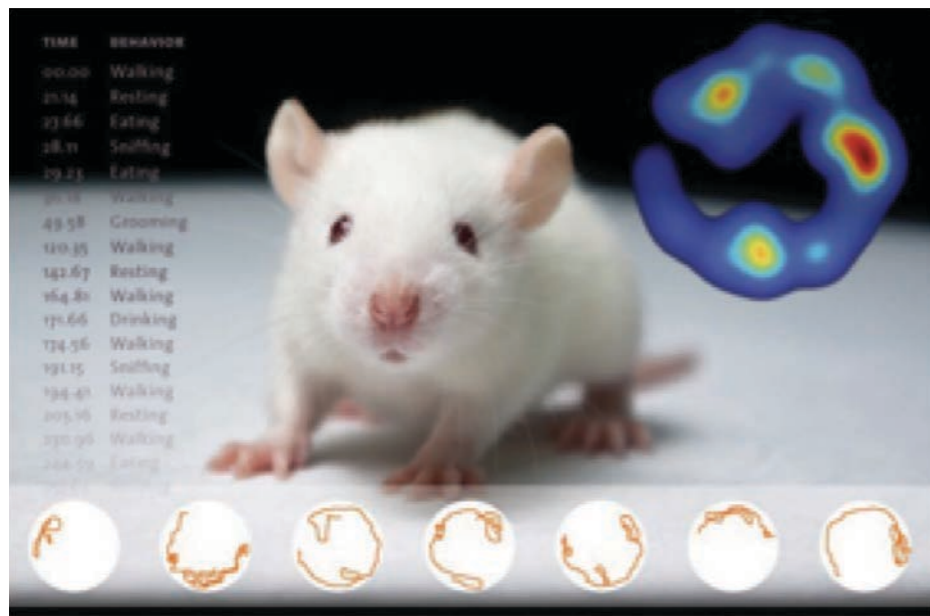
Stephansplatz, Vienna
Photo by Francisco Alaniz Uribe



Stephansplatz, Vienna
Photo by ViennaGIS

Computer vision and video tracking

Video tracking of a mouse showing linear movement patterns and heat map using EthoVision XT. Photo by Noldus



Video recorded at an altitude of 140m using a UAV DJI Mavic Pro



Ethical questions arise:

Privacy

Safety

Misuse of research tools (government, others)



Next Steps

Virtual Reality and modelling

New technologies...



Oculus Rift



THANK YOU



www.ucalgary.ca/urbanlab

Francisco Alaniz Uribe

B.Sc.Arch / MPDU / MEDes-Urban Design / RPP MCIP
Assistant Professor
Co-Director The Urban Lab
Faculty of Environmental Design
University of Calgary

fanizu@ucalgary.ca