

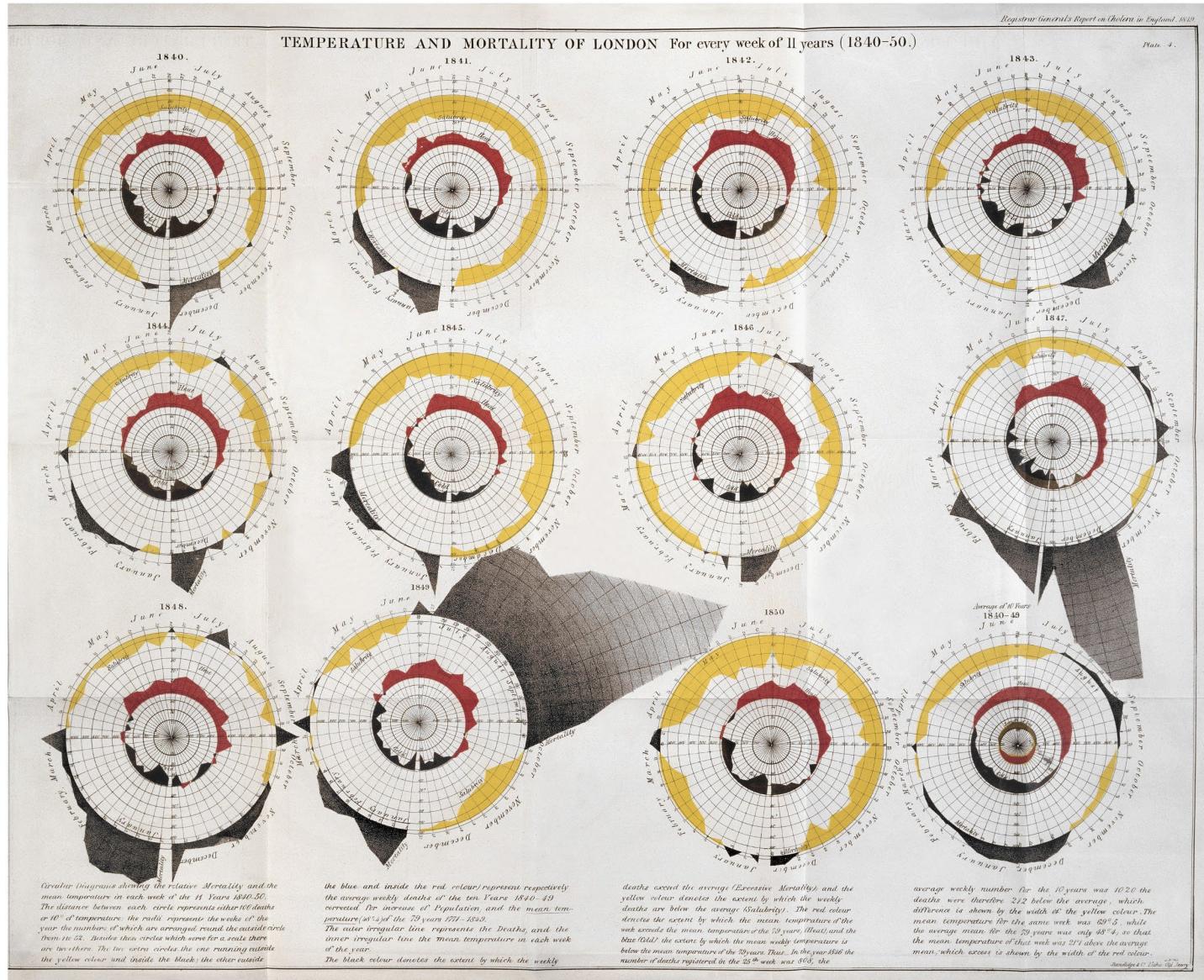
URBAN ANALYSIS AS A SYSTEM

AEC SEATTLE | JUNE 2023

ENOL VALLINA

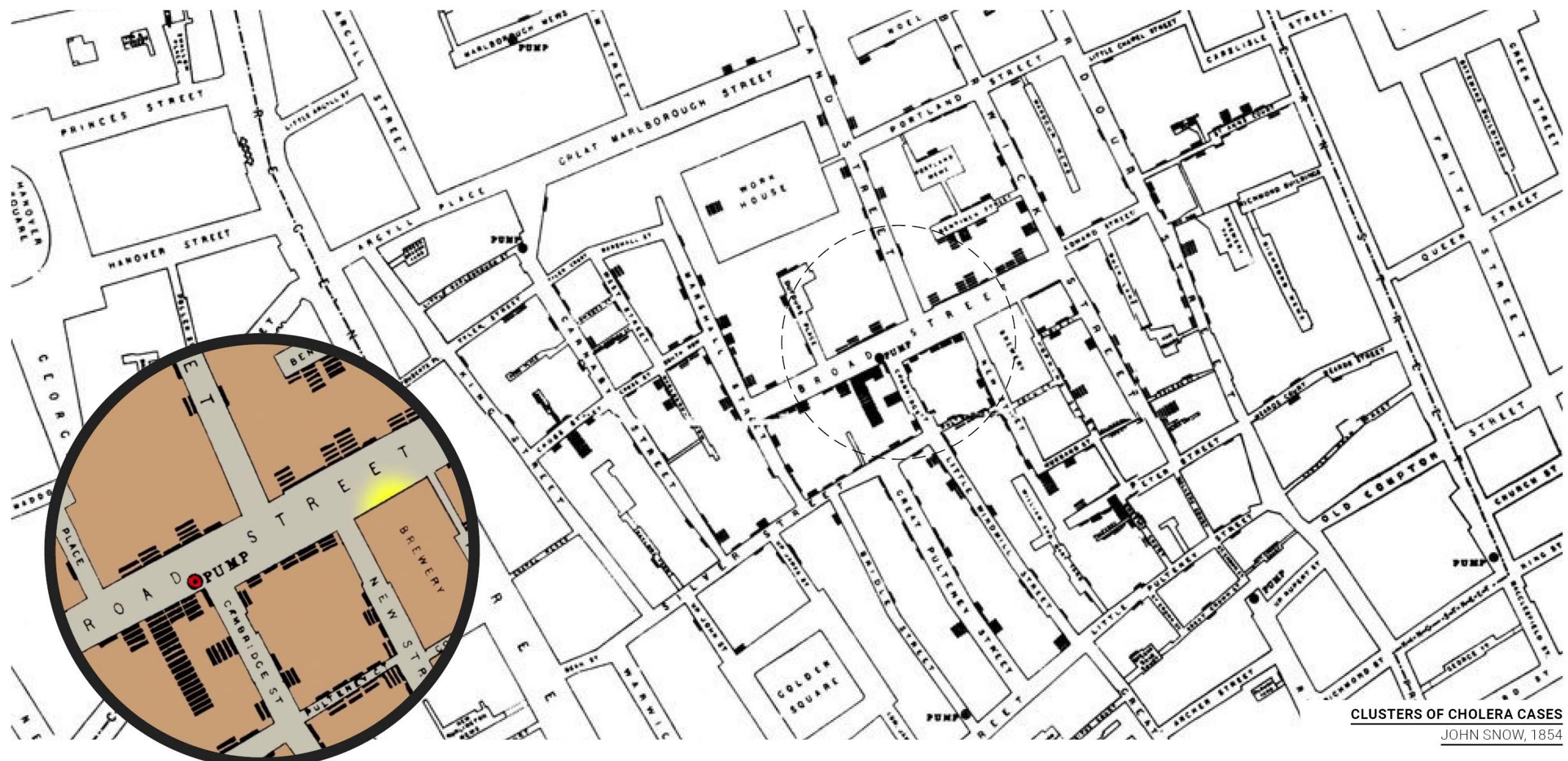


The Importance of the analysis UNVEILING CHOLERA



**REGISTRAR GENERAL'S REPORT ON
CHOLERA IN ENGLAND, 1849**

The Importance of the analysis





01

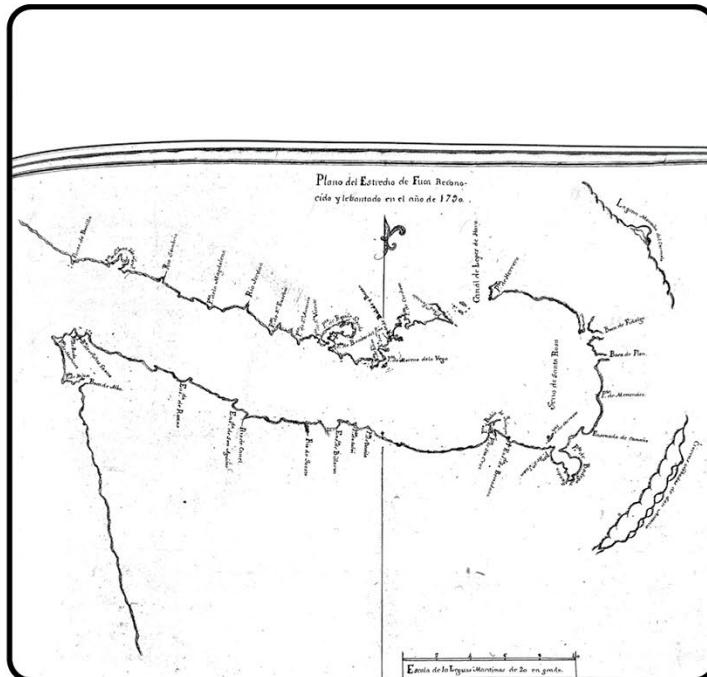
Assessment Methods & Alternatives

02

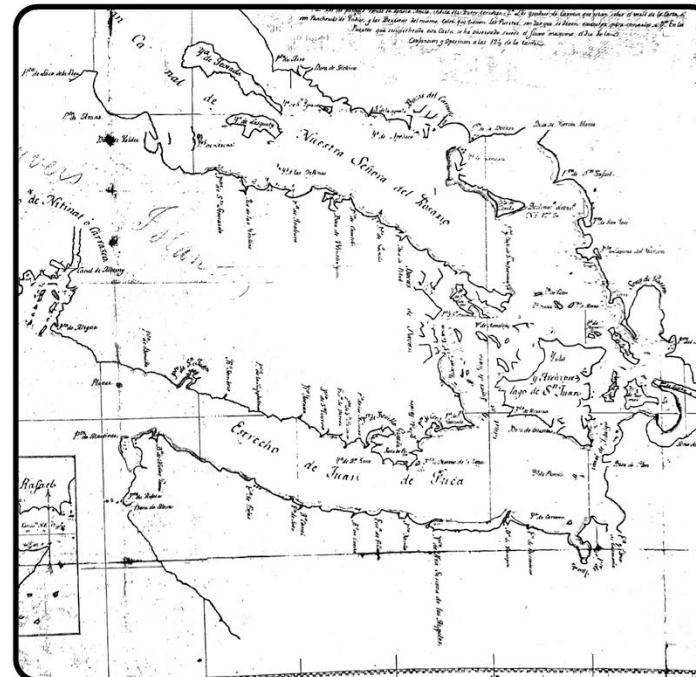
Urban Analysis as a Design System



Urban Analysis as a Feedback Loop



LOPEZ DE HARO , 1790



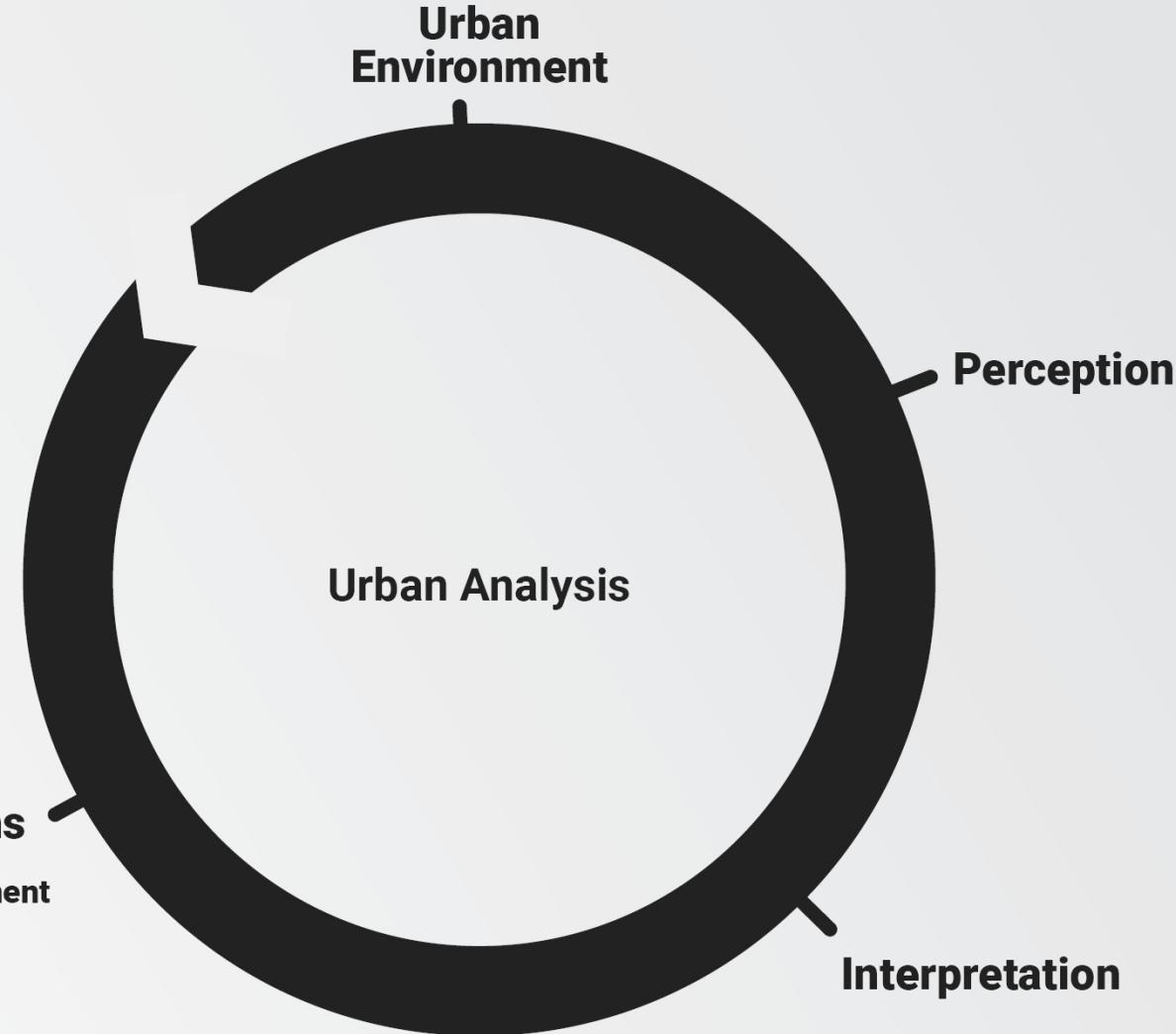
JUAN CARRASCO,1791



JUAN FRANCISCO BODEGA Y QUADRA, 1792

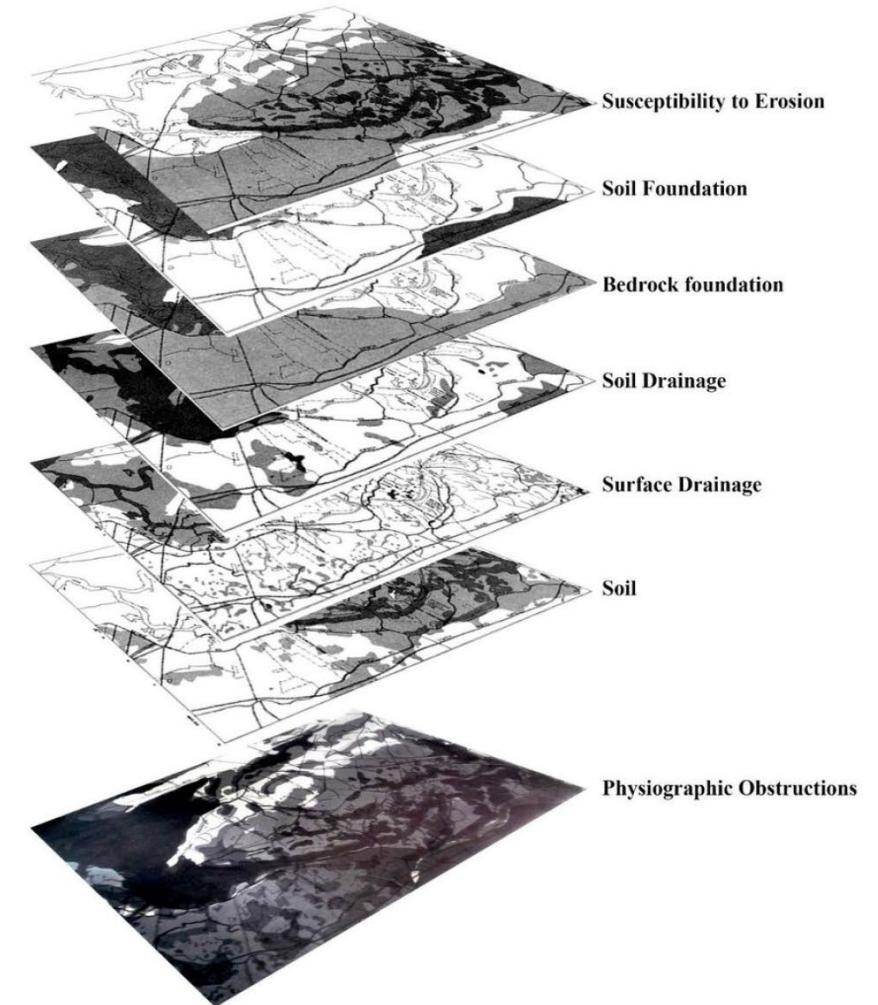
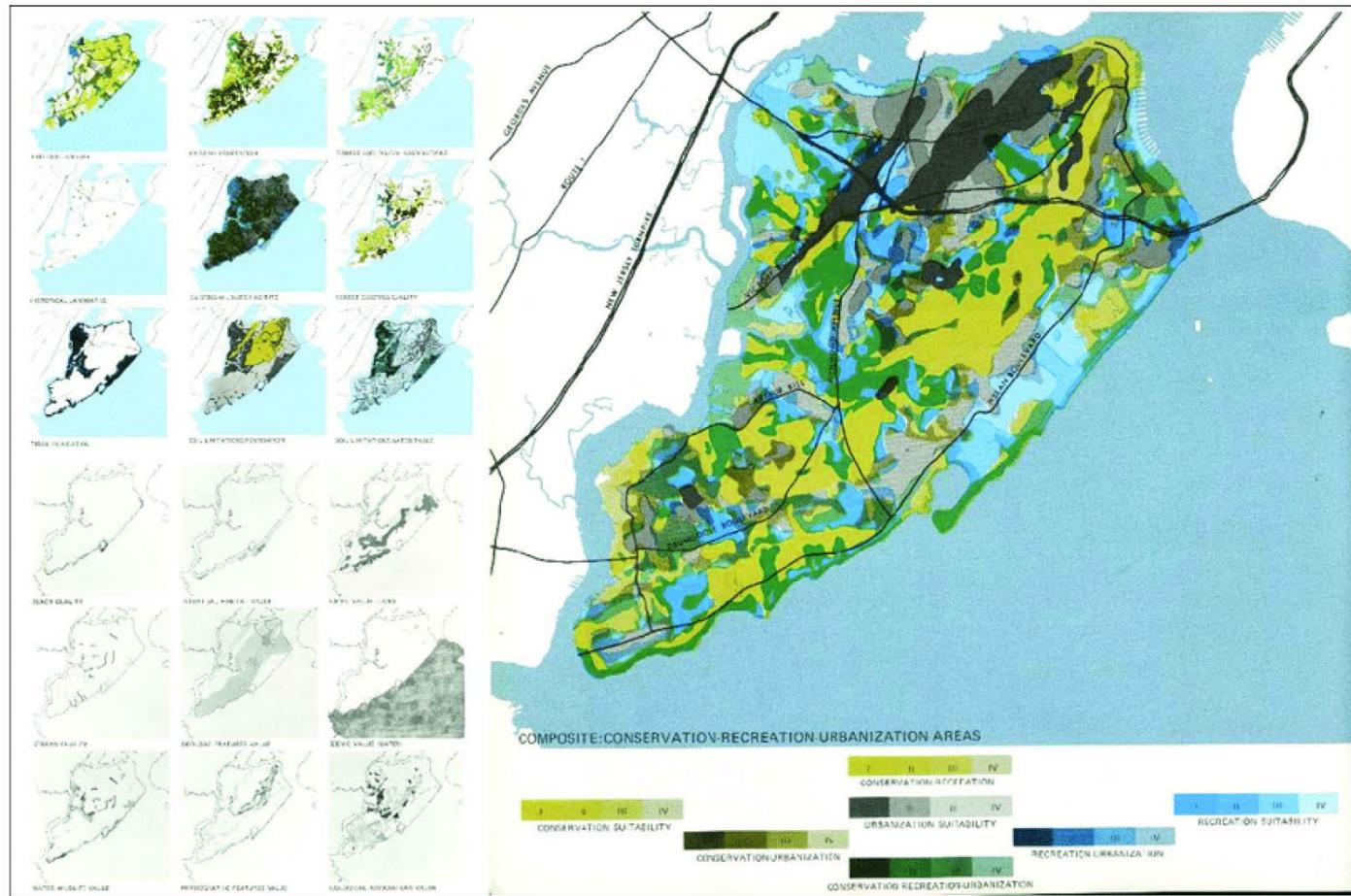


Urban Analysis as a Feedback Loop





Layer juxtaposition of observed realities



'DESIGN WITH NATURE' RESEARCH
IAN MCHARG, 1969



Influencing the way that we use tools



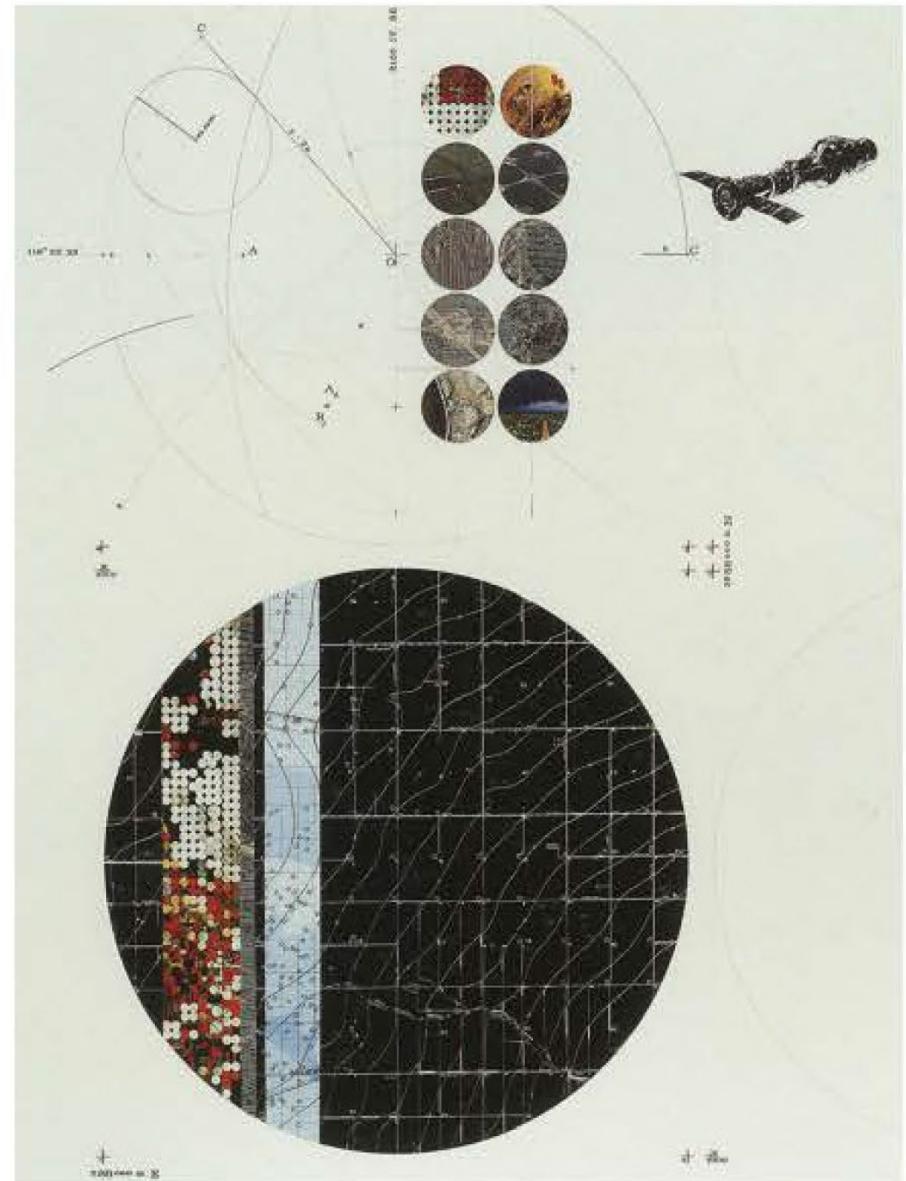


Alternative Model of Urban Analysis. The Agency of Mapping

"Make a Map, not a Tracing"

[...]

...the function of mapping is less to mirror reality than to engender the re-shaping of the worlds in which people live."

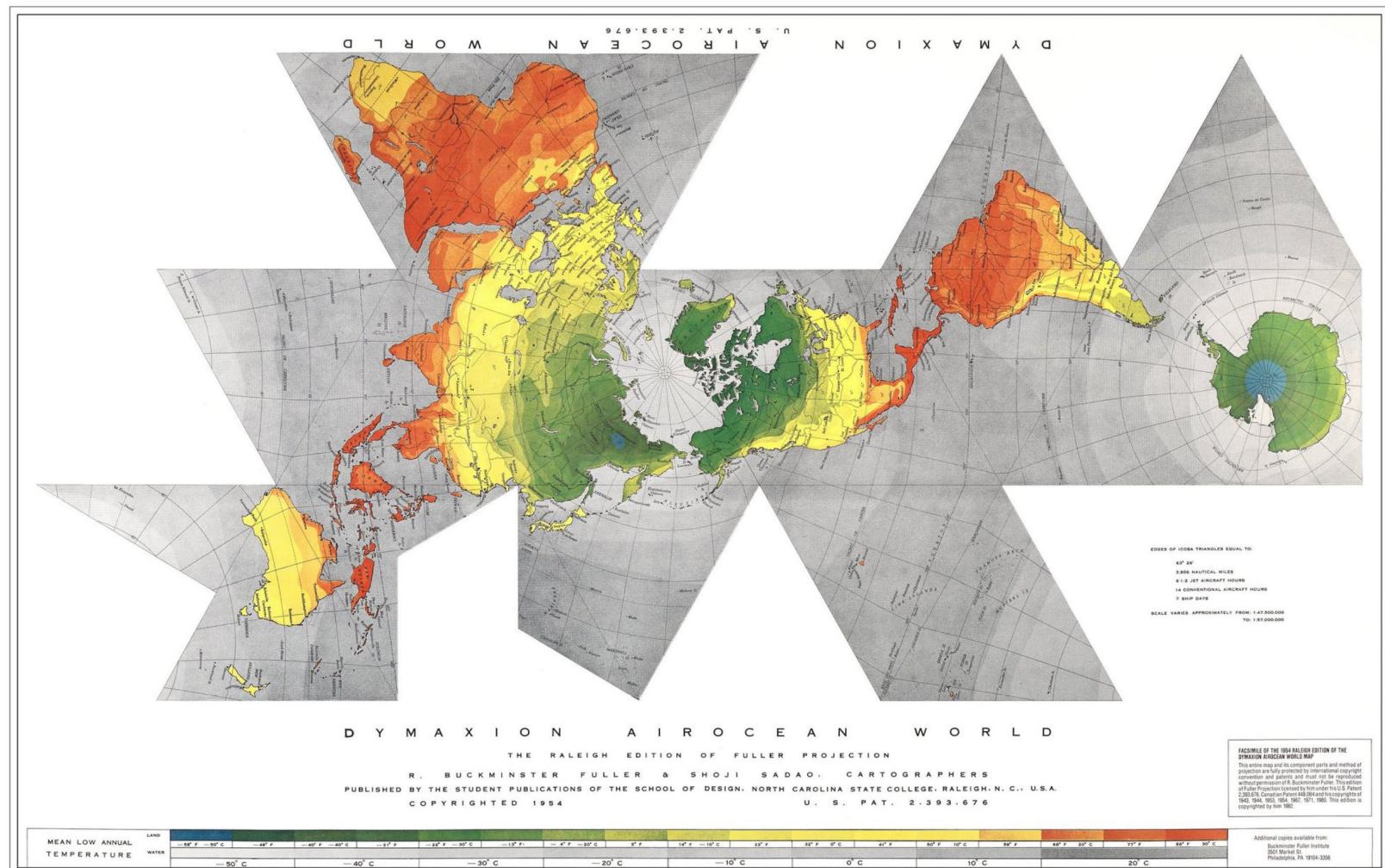


Mapping Agency
James Corner



THE AGENCY OF MAPPING

“...the function of mapping is less to mirror reality than to engender the re-shaping of the worlds in which people live.”



'DYMAXION MAP'
ISTER FULLER, 1954



Observations beyond pre-established Categories





EARTH AT NIGHT
NASA, 2016



Cities are just a form of
urbanization and they could be
conceived as a result of broader
processes of sociospatial and
socioecological transformation”

CITIES OR URBANIZATION?
DAVID HARVEY, 2005



EL EJIDO, SPAIN



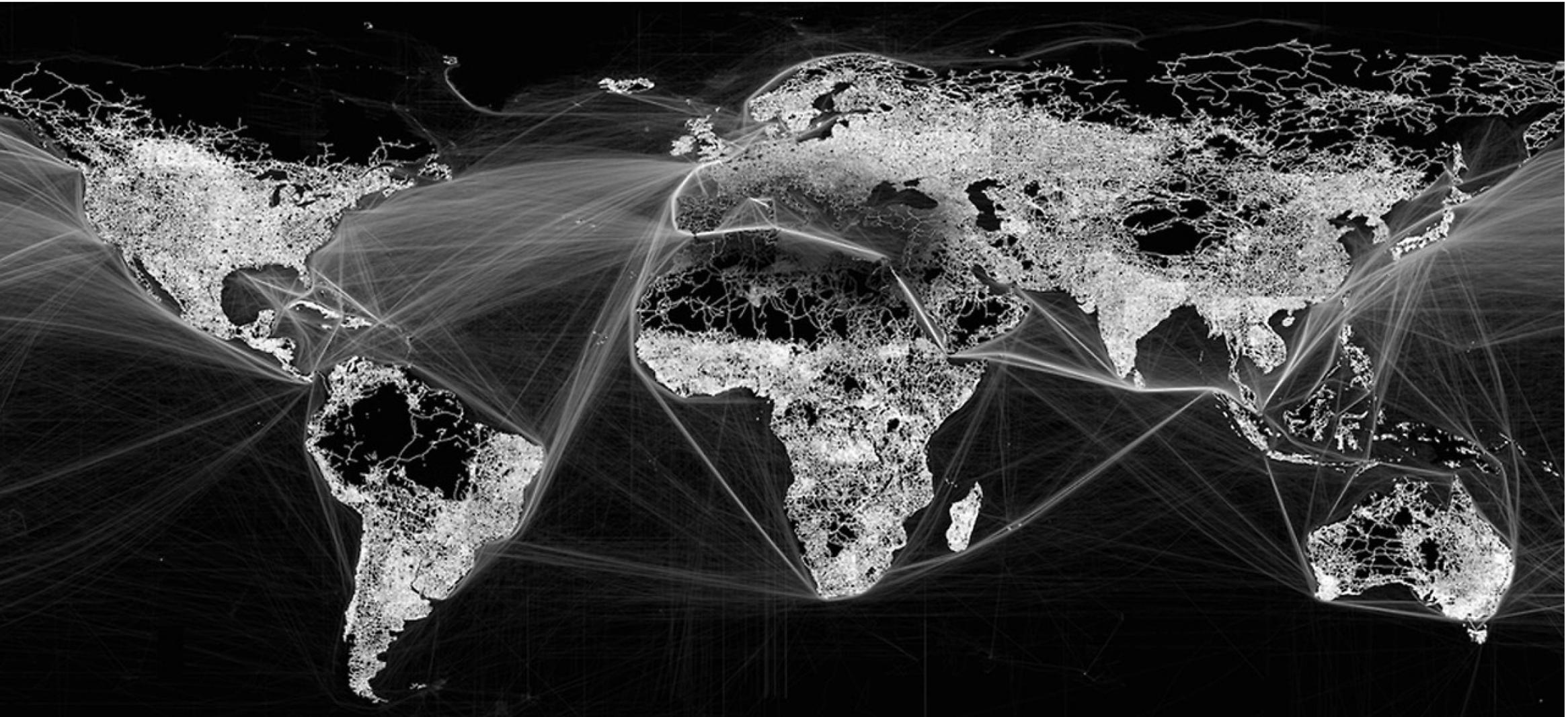
COUNTRYSIDE, THE FUTURE

AMO, 2019



PATCHWORK LOGGING

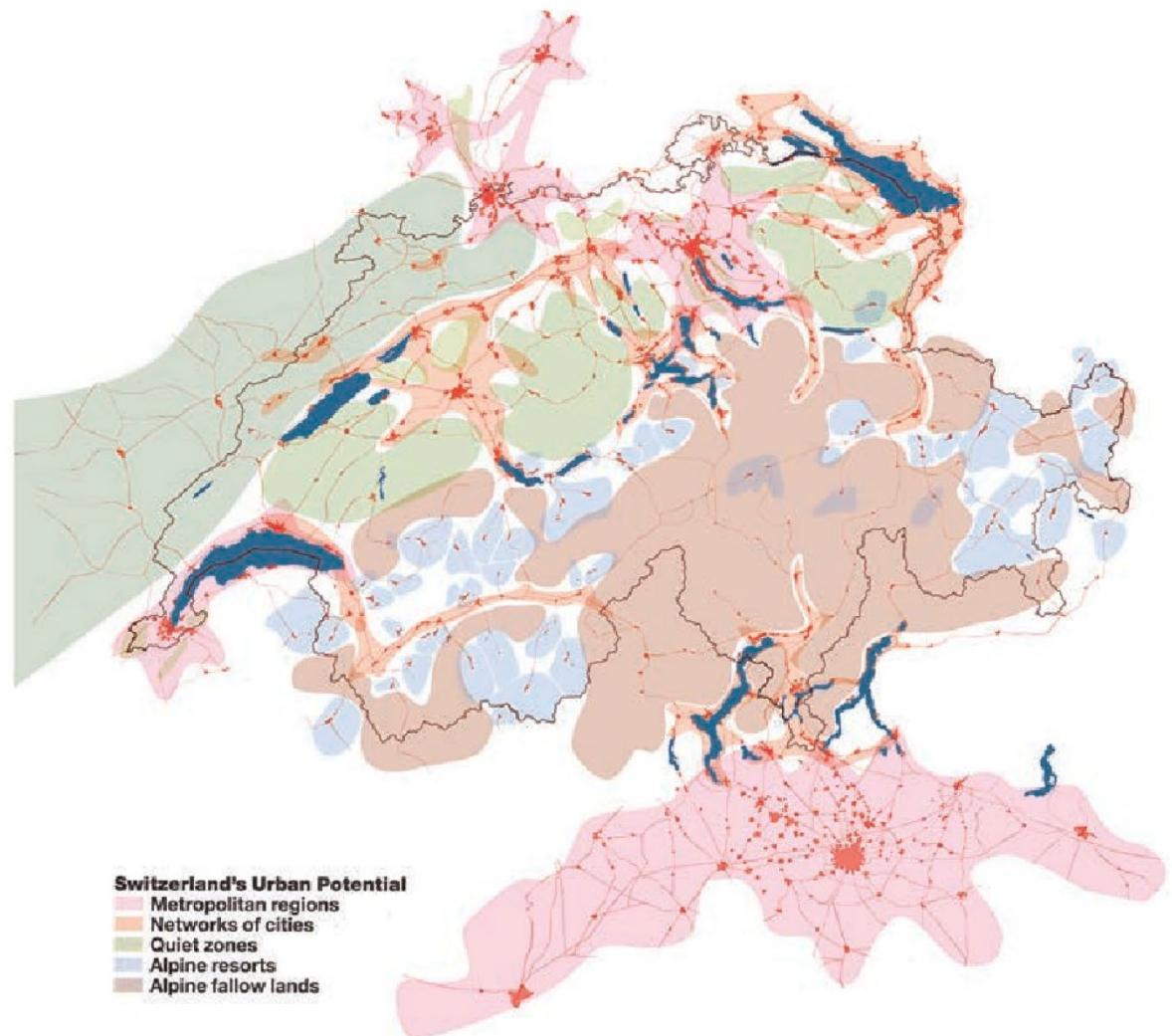
GARTH LENZ,



GLOBAL MAP OF HUMAN INFLUENCE
BRENNER AND KATSIKIS, 2016

Cities are just a form of urbanization and they could be conceived as a result of broader processes of socio spatial and socio ecological transformation"

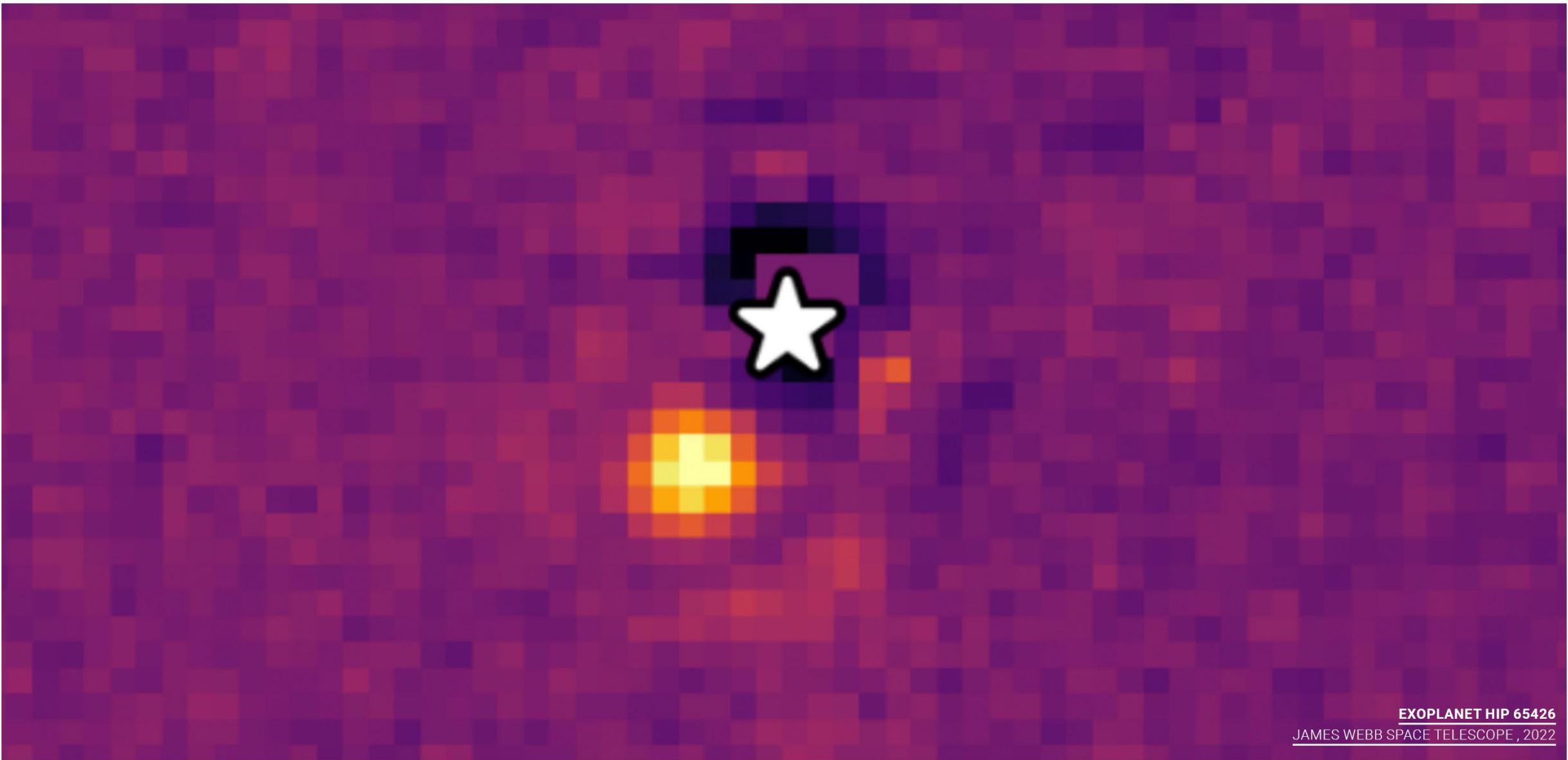
CITIES OR URBANIZATION?
DAVID HARVEY, 2005



SWISS URBAN LANDSCAPE
ETH STUDIO BASEL, 2005



Potential evolution of the way that we do Analysis



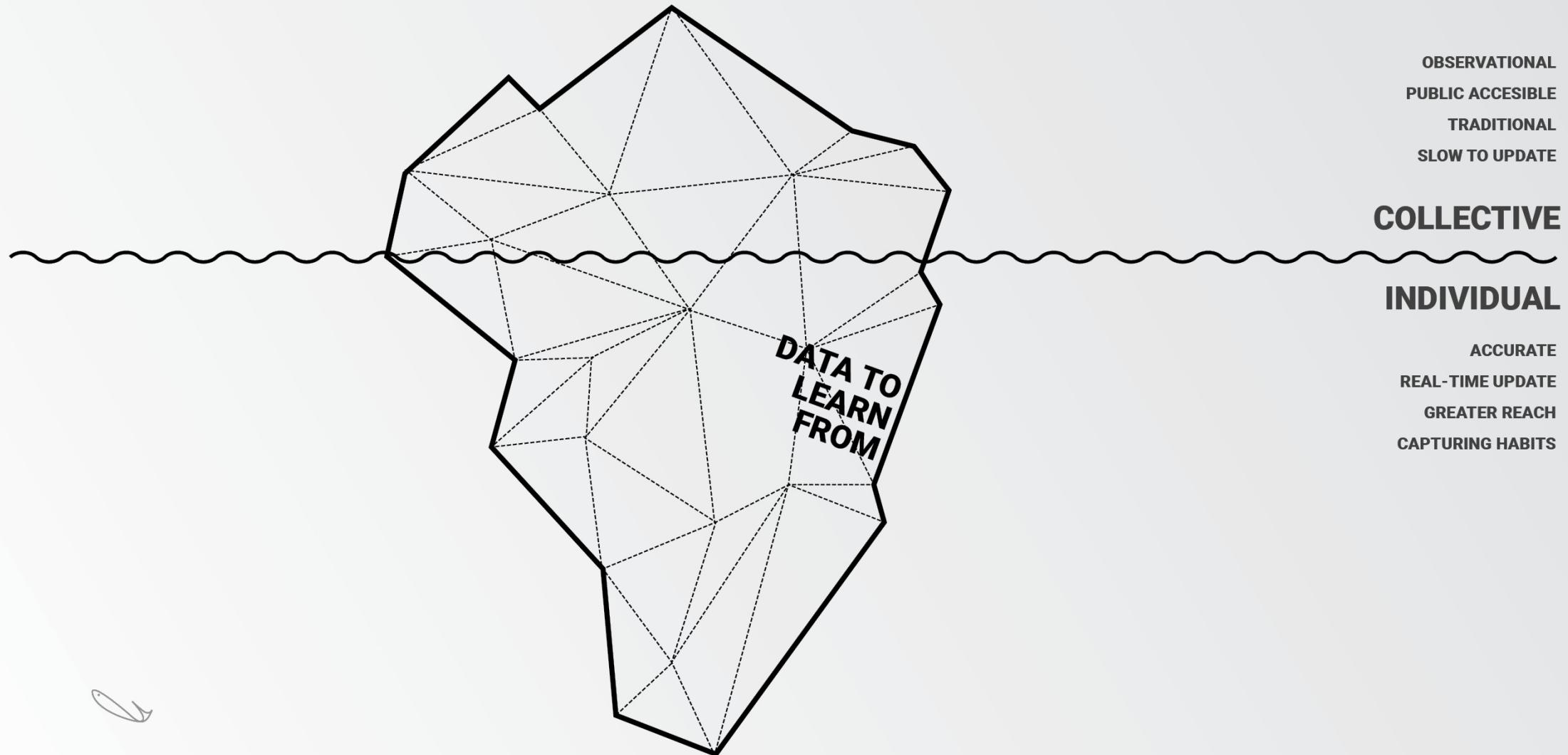
Urban Analysis as a Design System

How do we do an interpretation of the context where we are working?



THE PARADIGM OF FINDING THE INFORMATION

VIRTUAL VS. REAL SPACE





URBAN EXPERTS

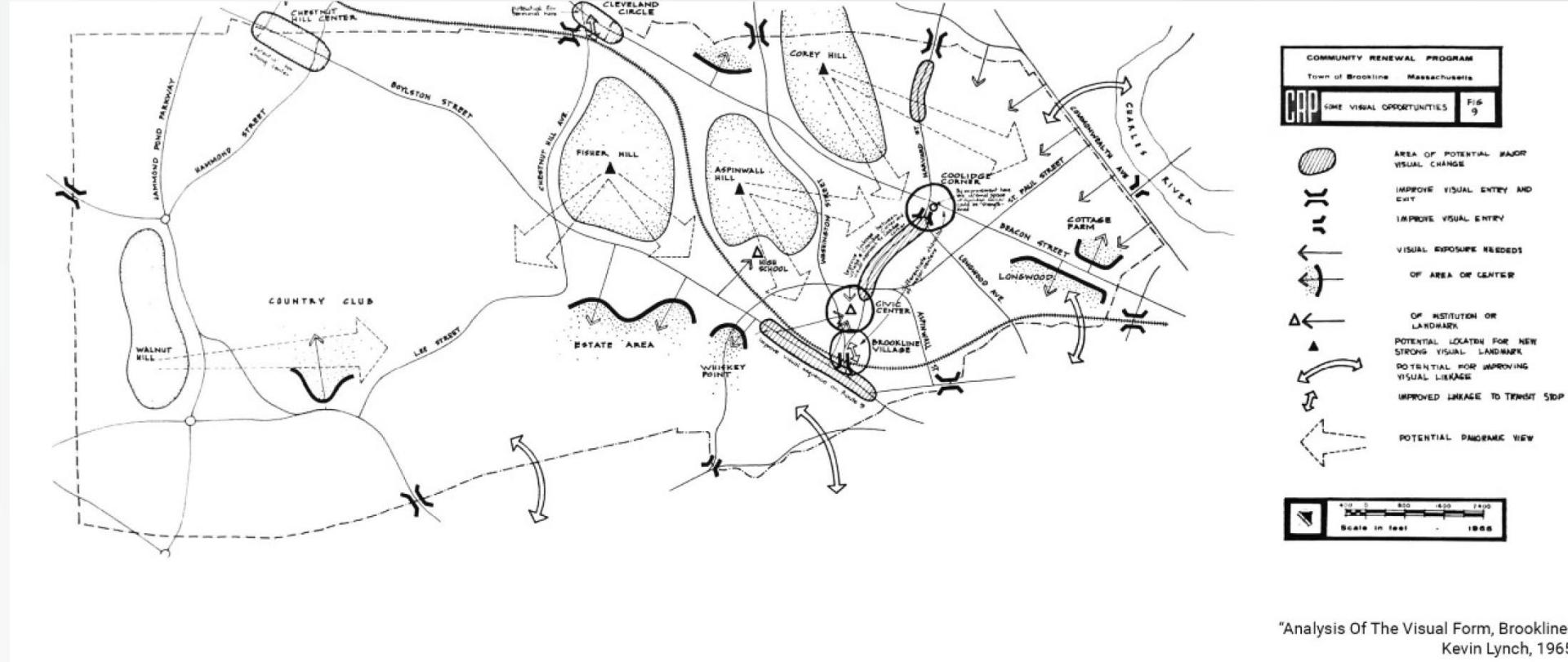
CITIZEN'S EXPERIENCE ON SITE





USER-ORIENTED URBANISM

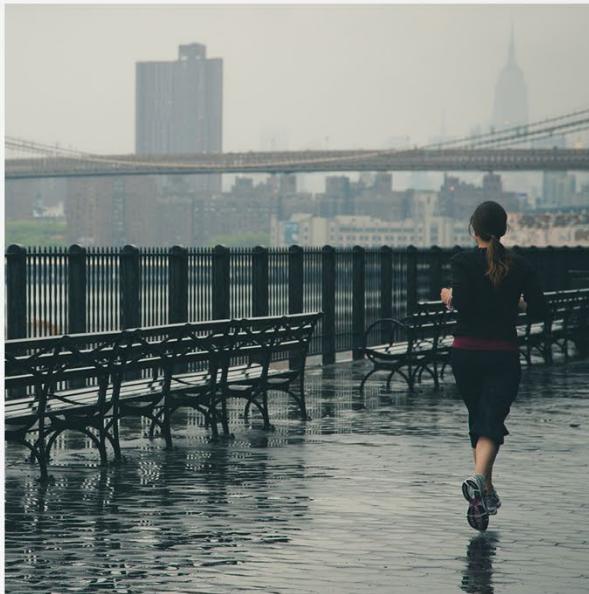
LEARNING FROM SITUATIONISM





APPS & INTERFACES

INFERENCE OF GEOGRAPHIC-BASED APPLICATIONS

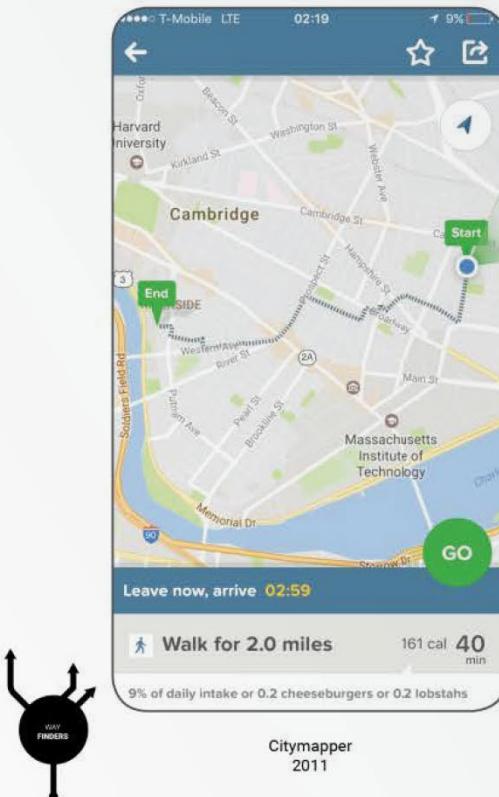


the potential of an app in changing, modifying or suggesting on behaving in the public space.

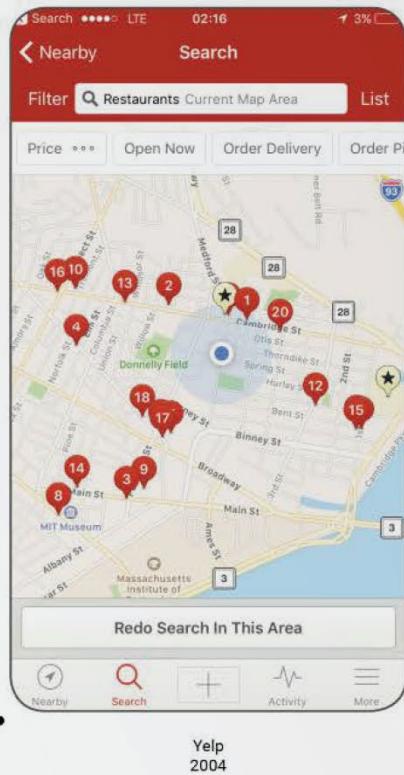


APPS & INTERFACES

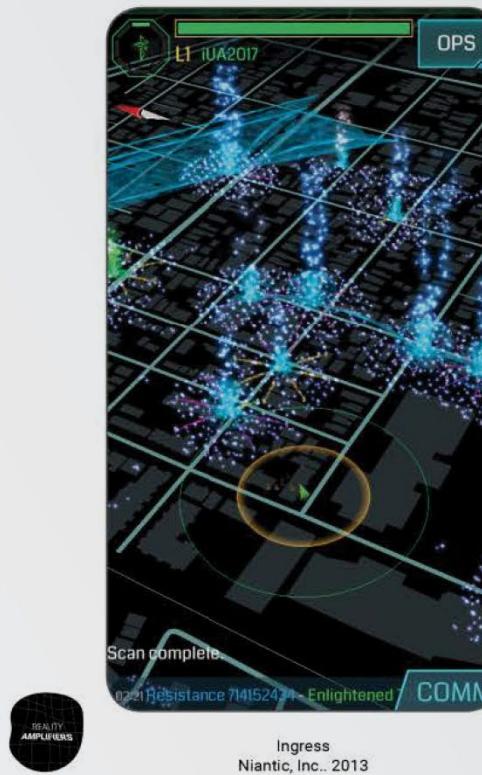
INFERENCE OF GEOGRAPHIC-BASED APPLICATIONS



Citymapper
2011



Yelp
2004



Ingress
Niantic, Inc.. 2013



Analysis Methods as Systems of Evaluation

**THE OUTCOME OF
AN URBAN ANALYSIS
CAN ...**

- ... UNVEIL PARALLEL REALITIES**
- ... INCREASE PUBLIC AWARENESS**
- ... CHANGE PERCEPTIONS**
- ... ALTERNATIVE EVALUATIONS**

**PROJECT
EXAMPLES**

“YANESSEN TO-IRO”

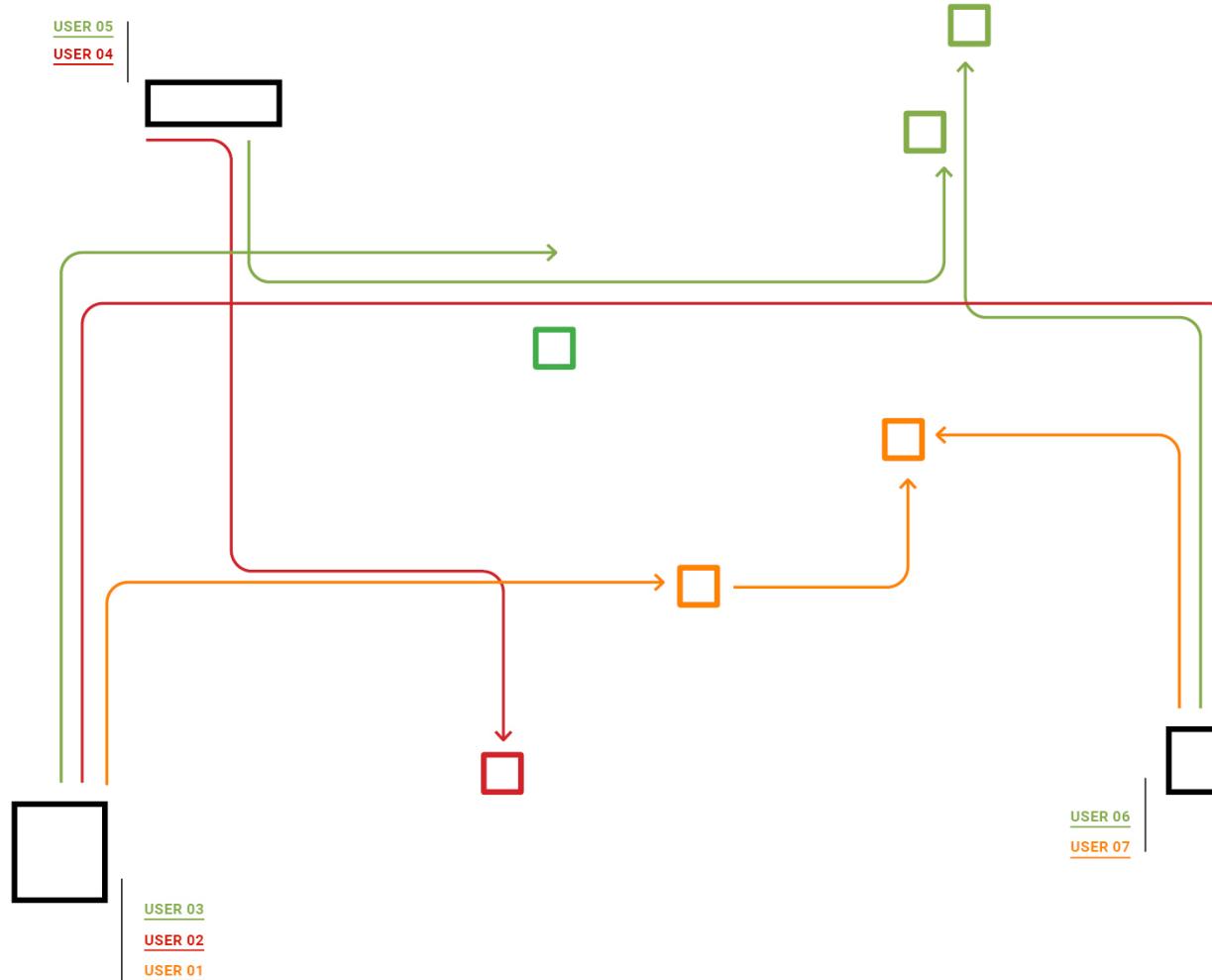
USER-ORIENTED URBAN PLAN BASED ON EXPERIENTIAL ANALYSIS AND WAYFINDING
TECHNOLOGIES

Context:

TOKYO URBAN DESIGN WORKSHOP
Harvard GSD & Meiji University



DIFFERENT PATHS, DIFFERENT EXPERIENCES

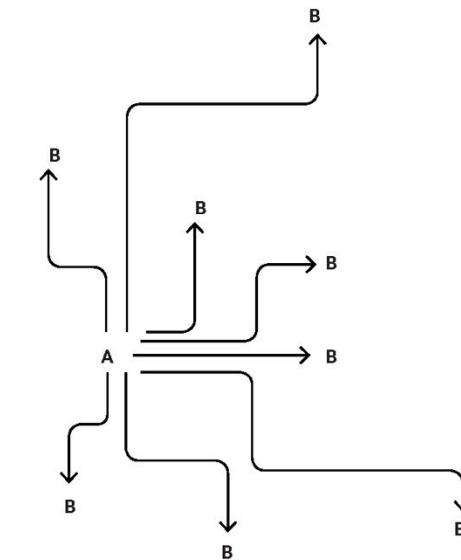
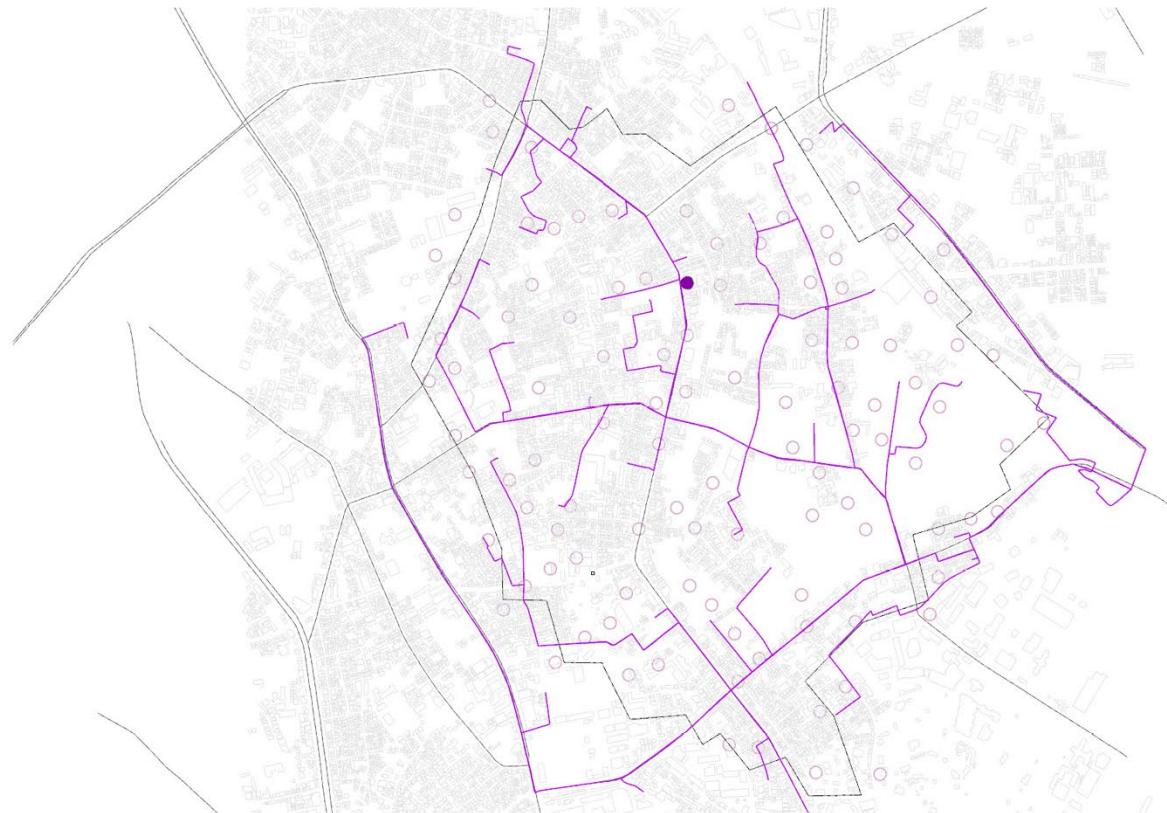


Using Google Maps API Technology



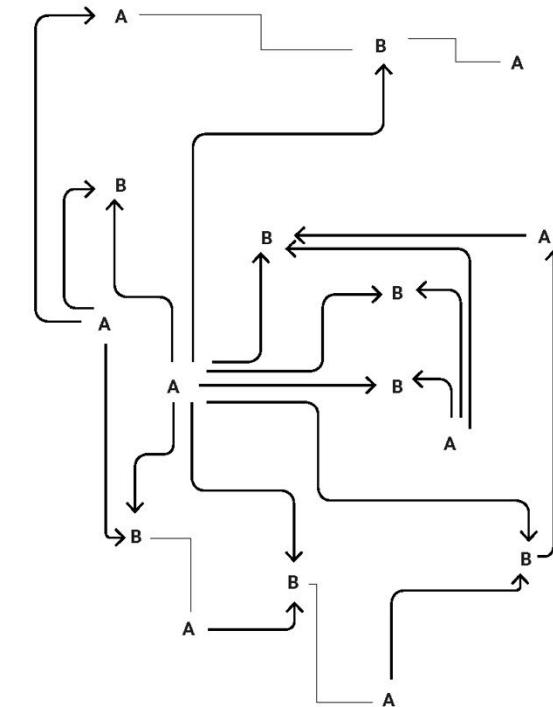
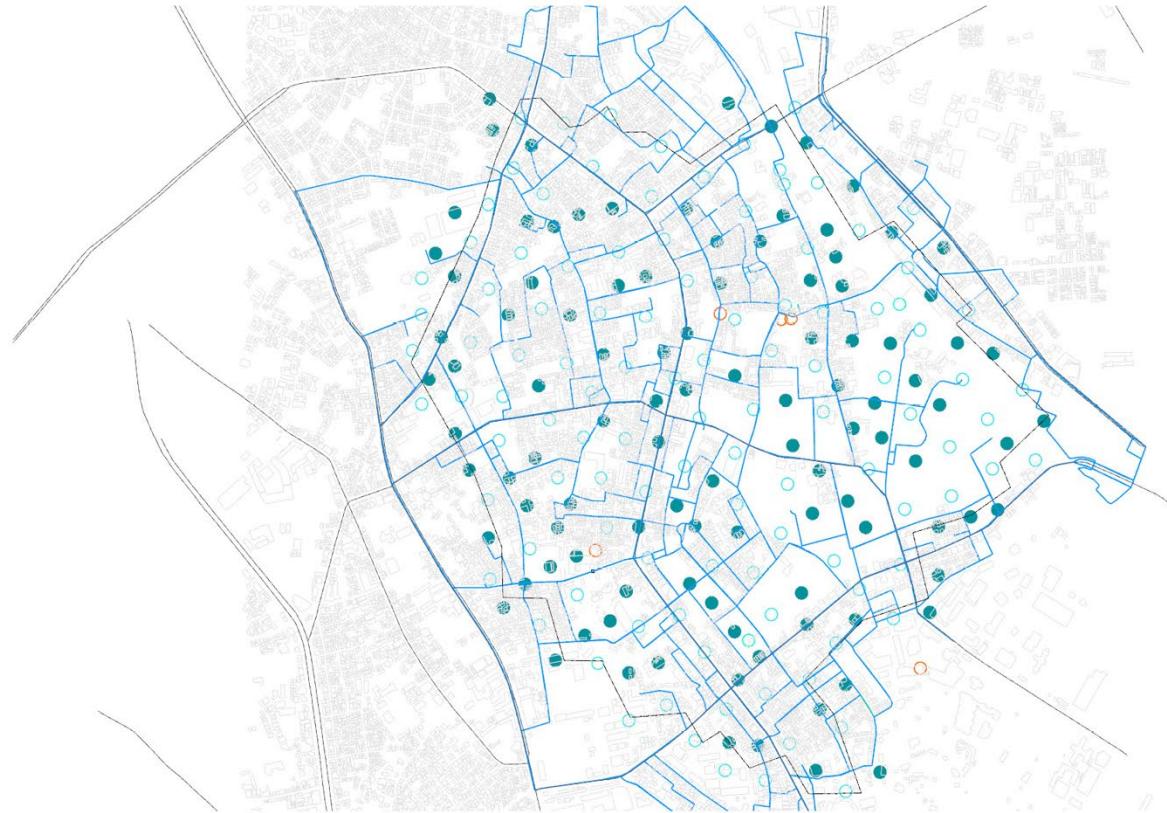
Using Google Maps API Technology

Paths From One Point



Using Google Maps API Technology

Mapping the Street Network



Who is Wandering Around YaNeSen?

PROFILES

LOCALS



STUDENTS



RESIDENTS
WORKING IN THE
AREA



(JUST) RESIDENTS



ELDERLY

VISITORS



RELIGIOUS



TOURIST



ART ENTHUSIAST



ARTISTS



SAMPO

ELEMENTS OF ANALYSIS

PLACES

WHERE DO THEY GO?

ACTIVITIES

WHAT ARE THEY DOING?

CIRCULATION

HOW DO THEY MOVE AROUND THE
AREA?

TIME

WHEN ARE THEY USING IT?

PROFILES

Profiles Study: Students

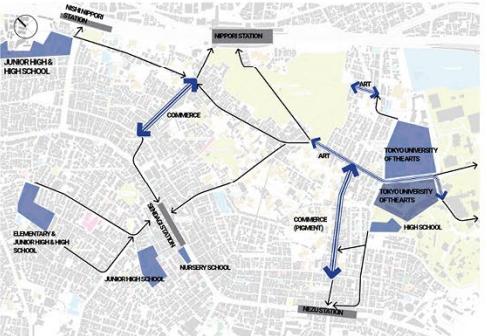


Places: Share House, University, Cafes, Restaurants, Sento

Activities: Exhibition, Making Art Works, Pigments

Circulation: Bicycle, Walking | Destination Based

Time: Morning, Evening | Daily



Profiles Study: Residents Working In The Area

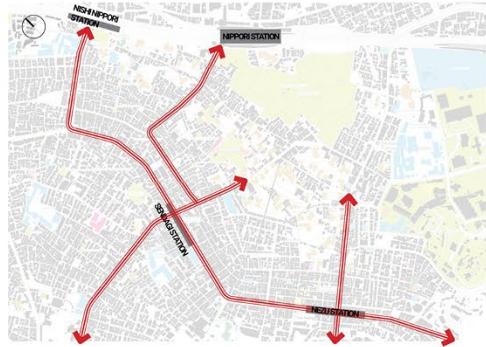


Places: Workshops, Private Residence, Cafes, Restaurants, Supermarket

Activities: Installers for Exhibitions, Grocery Shopping, Tour Guide, Stone Cutting

Circulation: Walking, Cycling, Private Vehicle | Destination Based

Time: All Day | Daily



Profiles Study: (Just) Residents

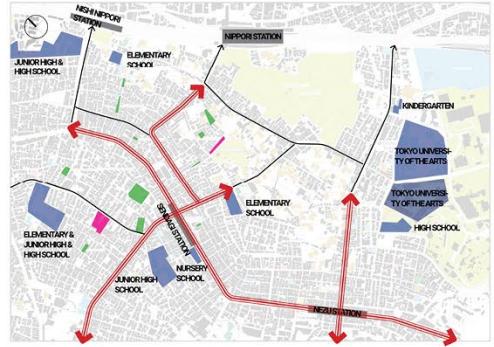


Places: Sento, Supermarket, Playgrounds, Community Center, Train Station

Activities: Kindergarten, Grocery Shopping

Circulation: Walking, Public Transport | Destination Based

Time: Early Morning, Evening | Daily



Profiles Study: Elderly



Places: Public Bath (Sento), Supermarket, Dinner

Activities: Wandering, Cats Feeding

Circulation: Walking, Public Transport | Journey-Based

Time: All Day | Daily



Profiles Study: Religious Visitors



Places: Temple, Cemetery

Activities: Funerals, Festivals, Flower shop, Hanami

Circulation: Walking, Public Transport, Private Vehicle | Destination Based

Time: Working Hours | Occasional



Profiles Study: Regular Tourists

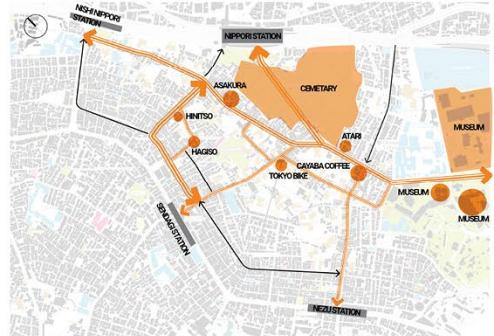


Places: Private Residence, Cemetery, Airbnb

Activities: Wandering, Eating, Shopping

Circulation: Walking, Public Transport, Journey-Based, Cycling

Time: All Day | Daily



Profiles Study: Art Enthusiasts

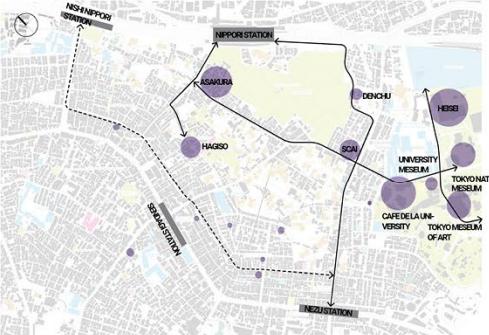


Places: Tokyo Art University Museum, Cafeteria of the University, Sento Bath House, Higashi

Activities: Visit Exhibition

Circulation: Public Transport, Private Vehicle | Journey Based

Time: Working Hours | Occasional



Profiles Study: Artists

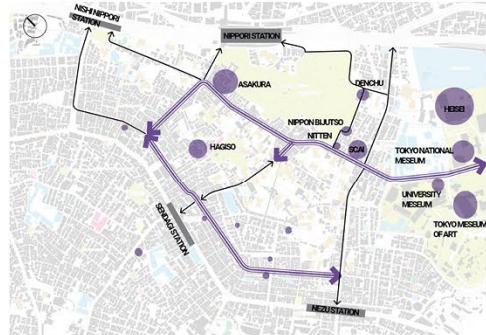


Places: Bar, Gallery, Cafe, Wandering, Pigment/Paint Store

Activities: Taking Photos, Shopping, Making Workshops

Circulation: Public Transport, Private Vehicle, Walking | Journey Based

Time: All Day | Daily



Profiles Study: Sampo

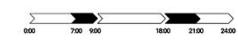


Places: Street, Cafes, Restaurant, Cemetery, Sento

Activities: Wearing Yukata, Making Lanterns, Having Lunch

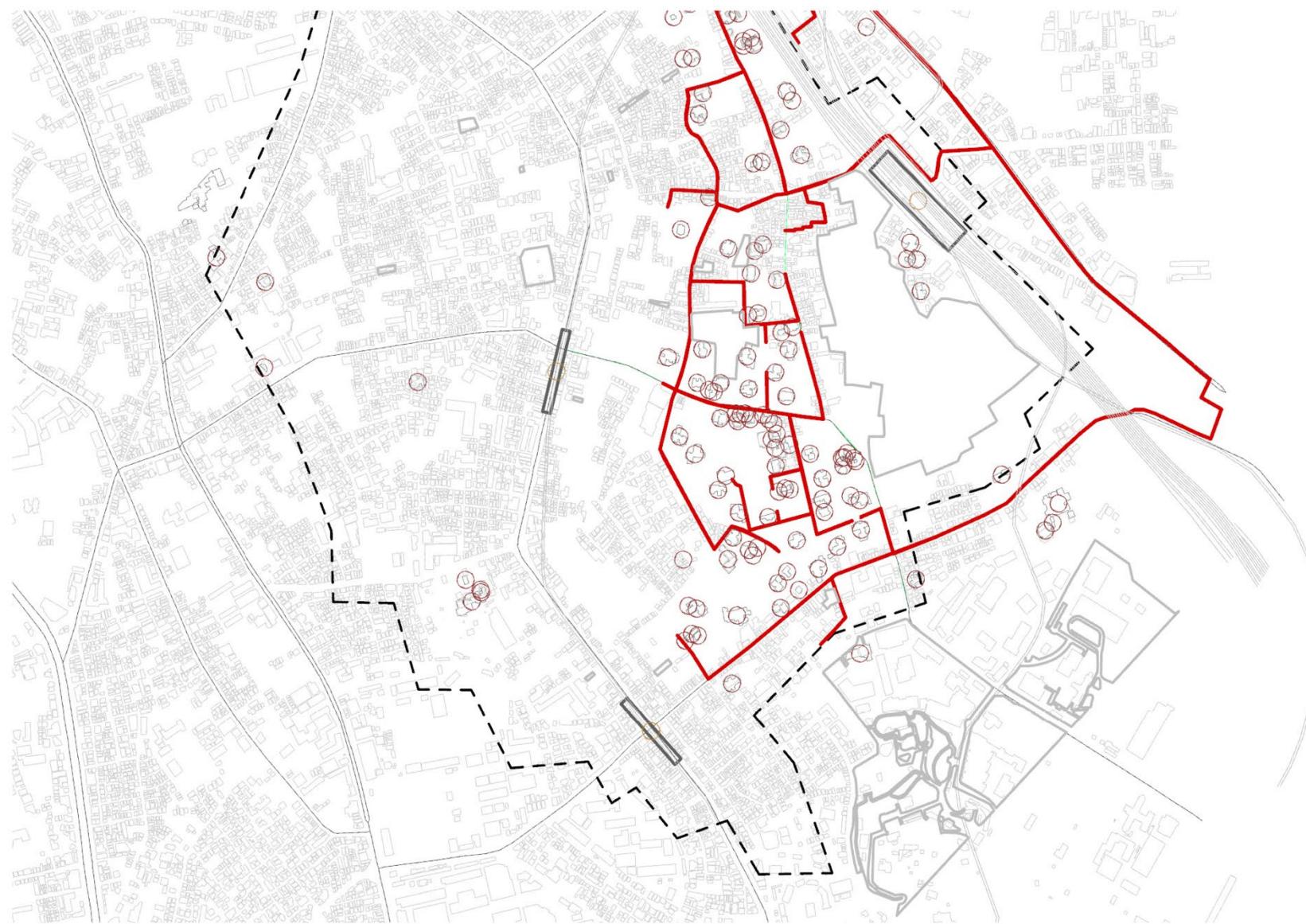
Circulation: Public Transport, Walking | Journey Based

Time: Morning, Evening | Daily



Unveiling Paths

Religious YaNeSen

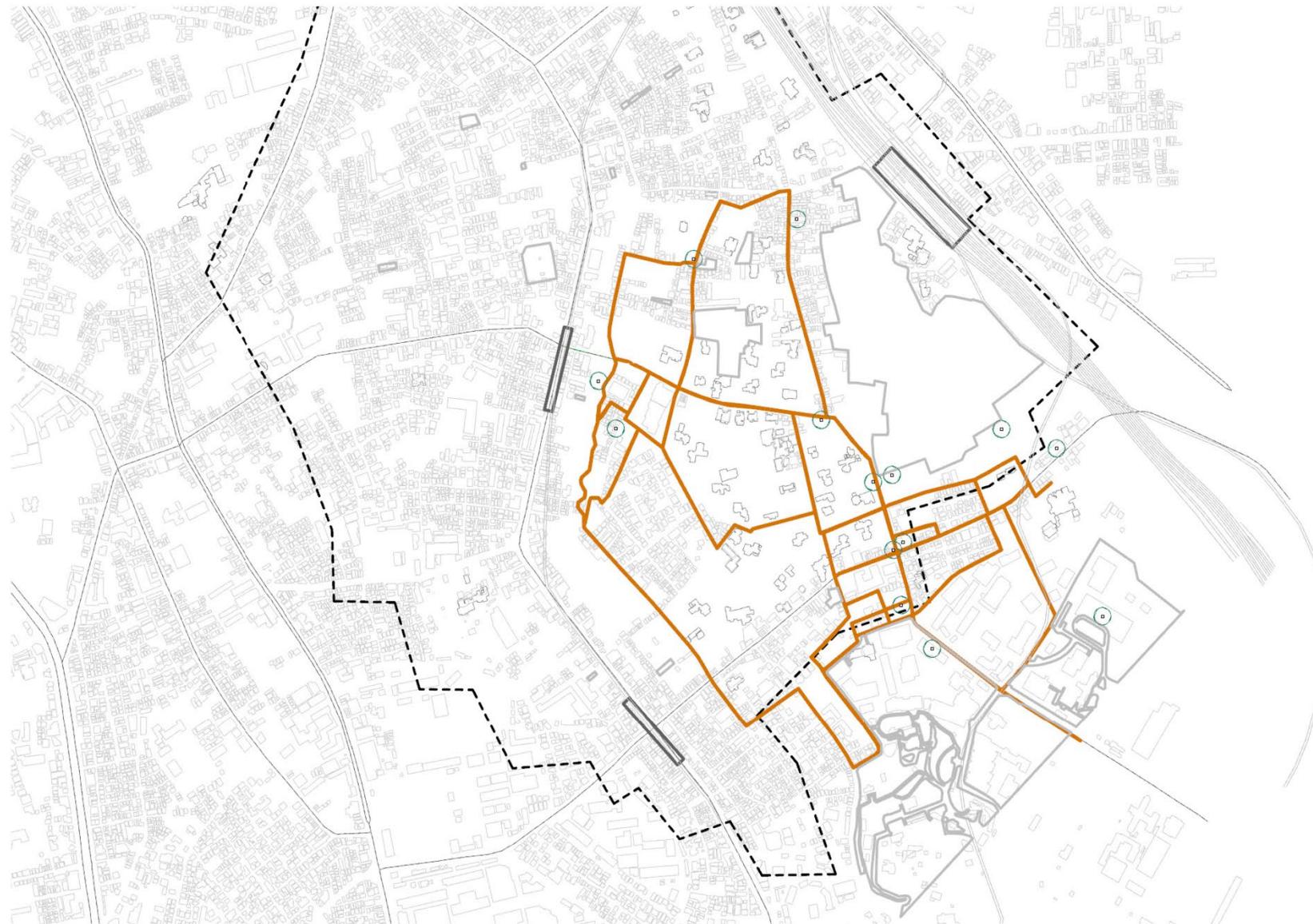


PARAMETERS

temple locations +
train stations +
parking lots +



Artistic YaNeSen

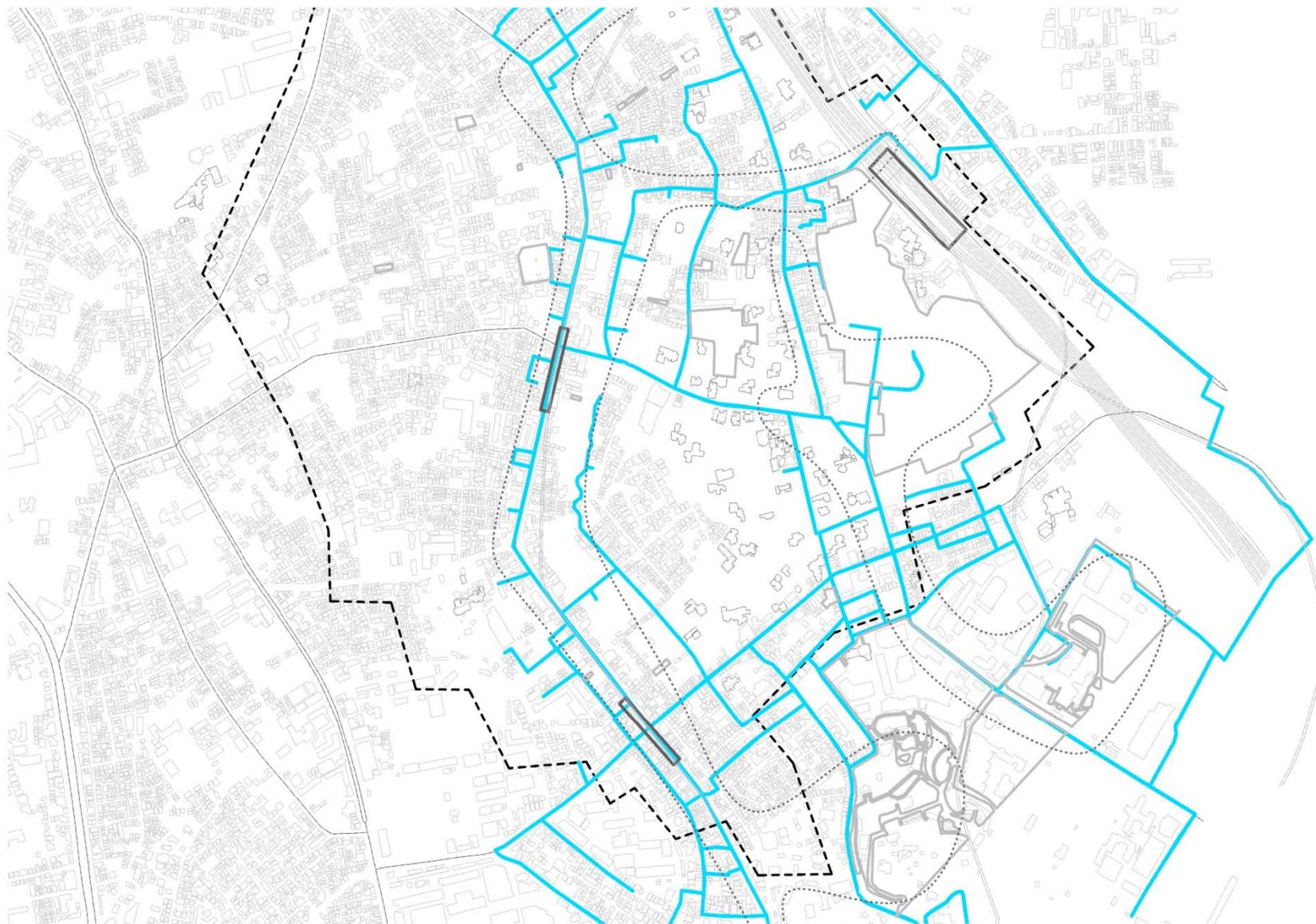


PARAMETERS

gallery locations +
cafes +
art schools +
museums +



Sampo YaNeSen



PARAMETERS

temples +

train stations +

car park +

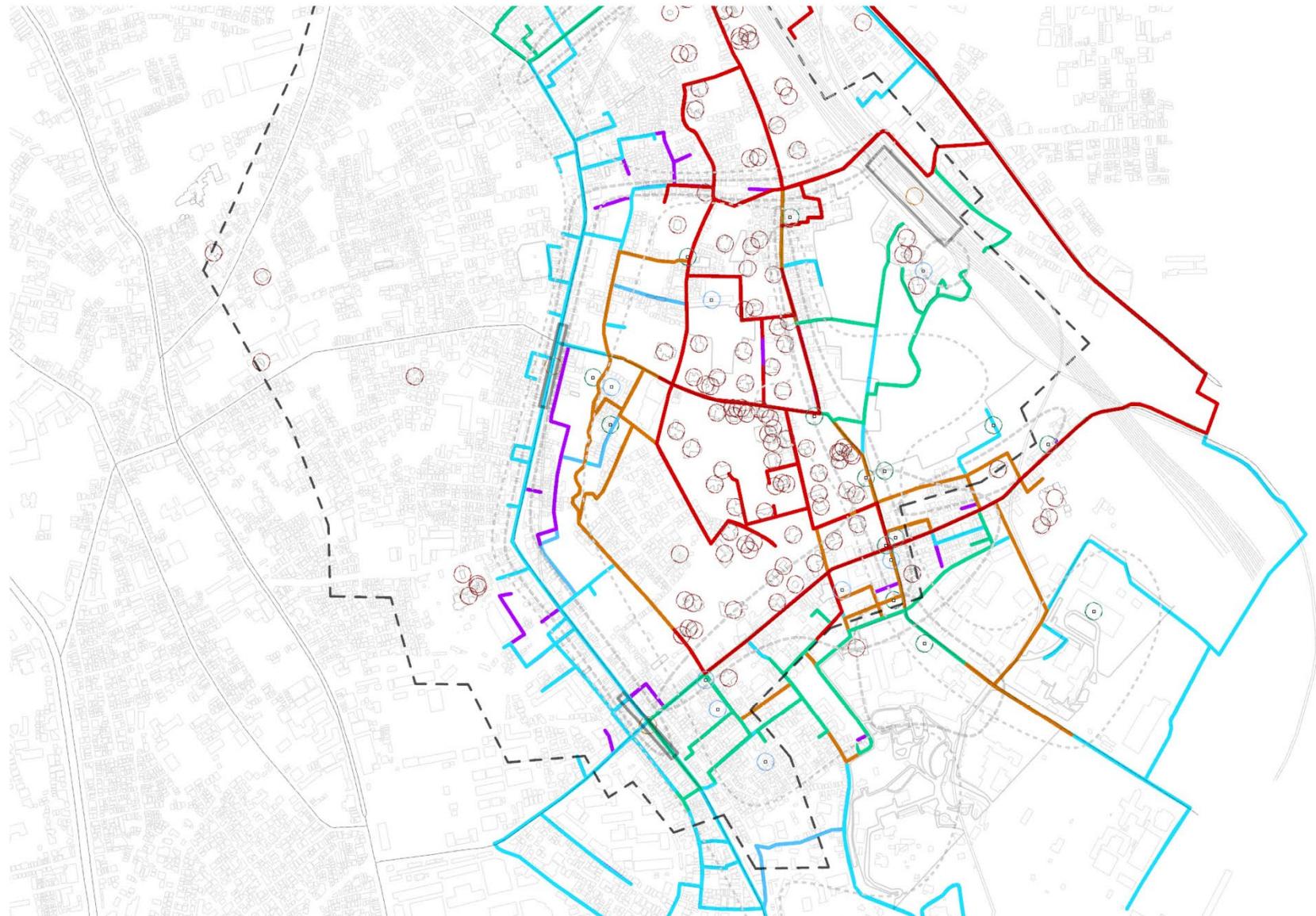
commercial areas +

museums +

cafes +

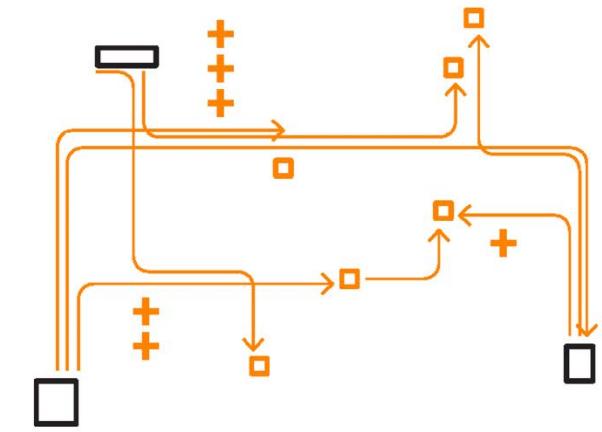
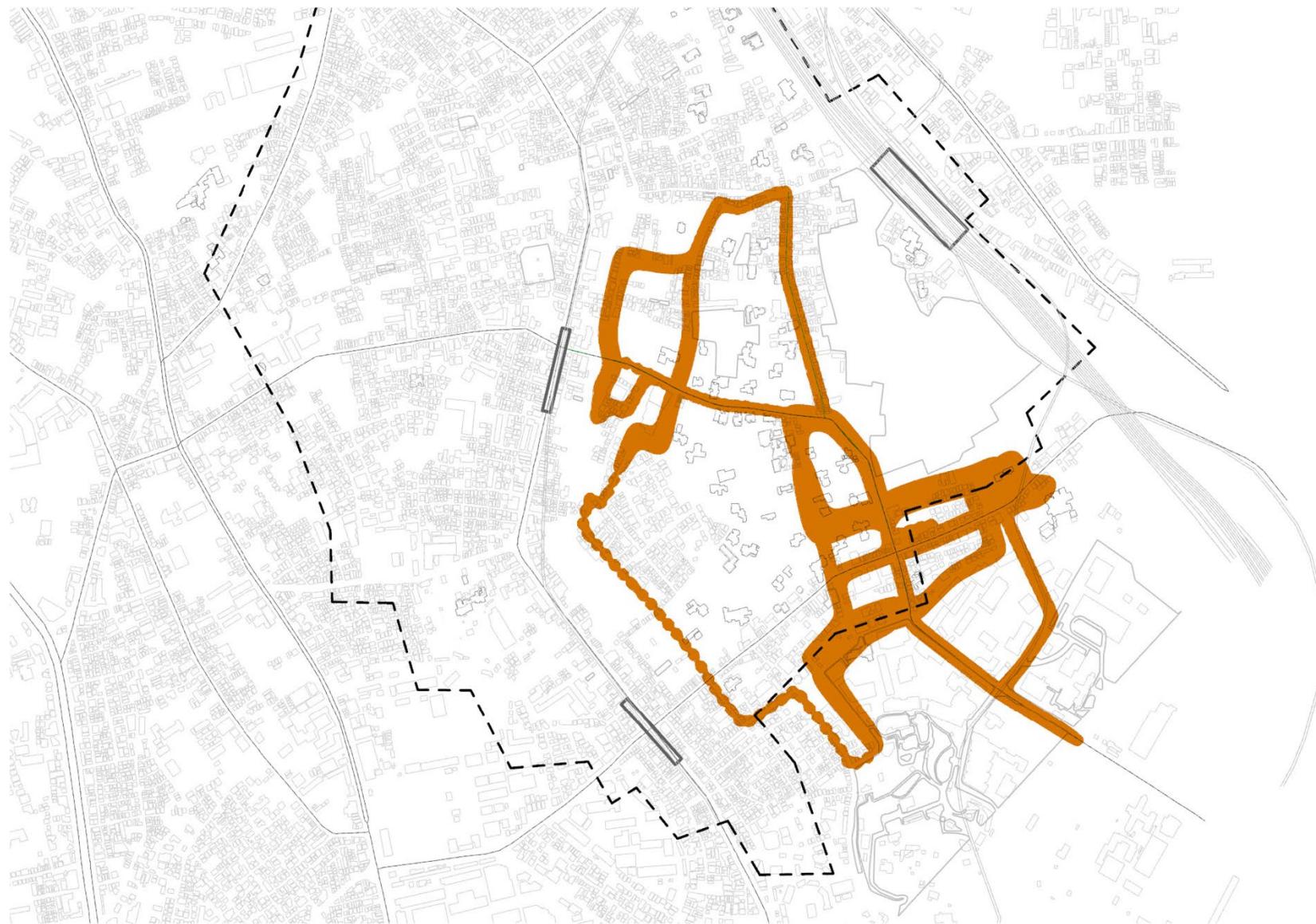


More than One YaNeSen

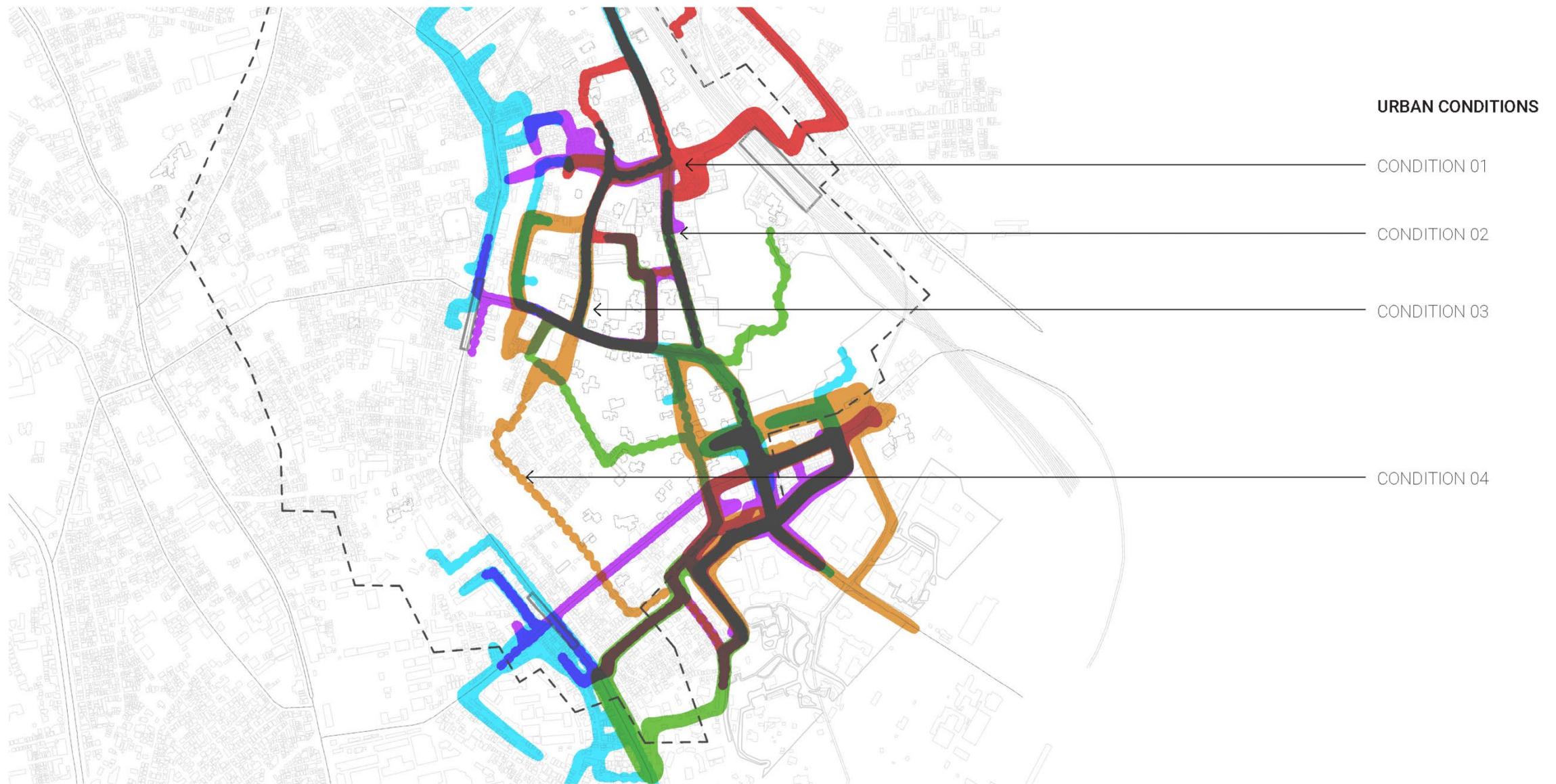


What Urban Strategies can be Implemented Along the Paths?

Path Convergence Study



Path Convergence Study

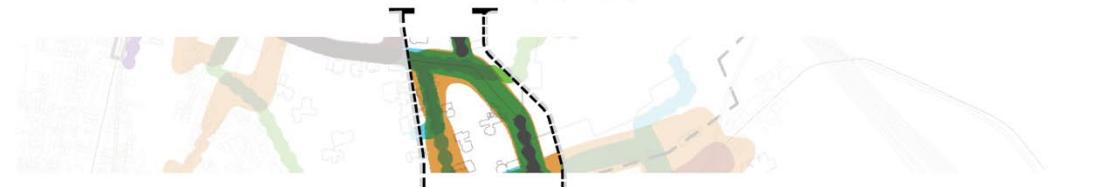


Pedestrianization Levels

01



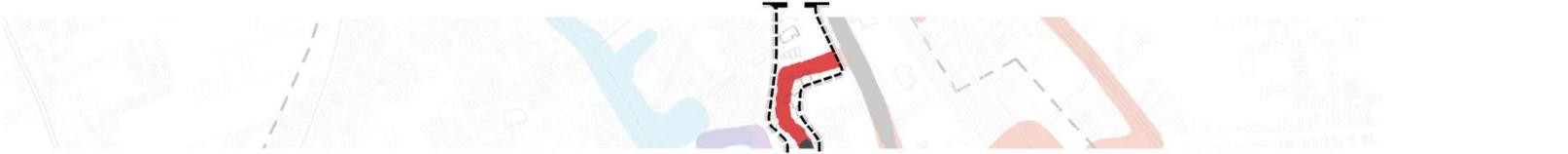
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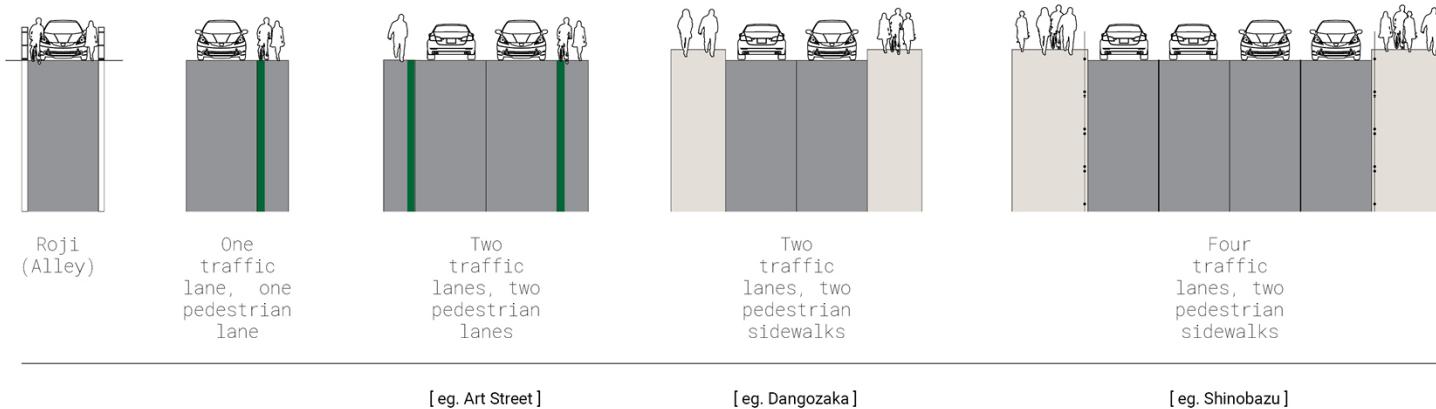
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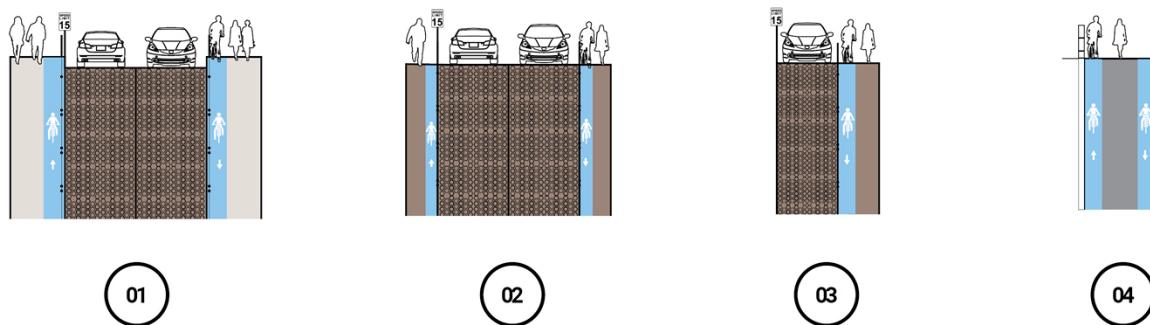
04



Road Types

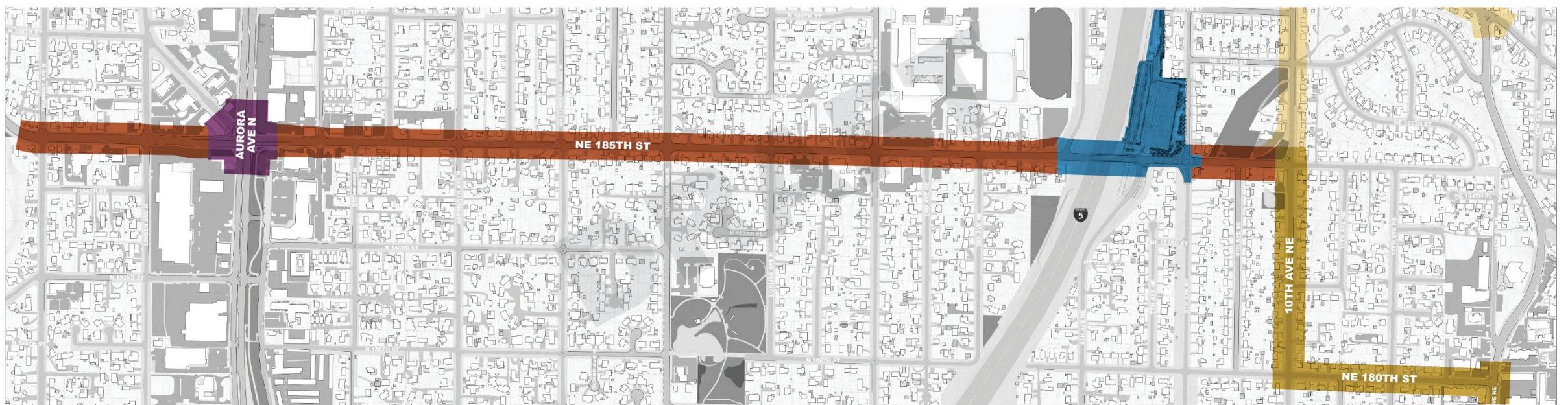


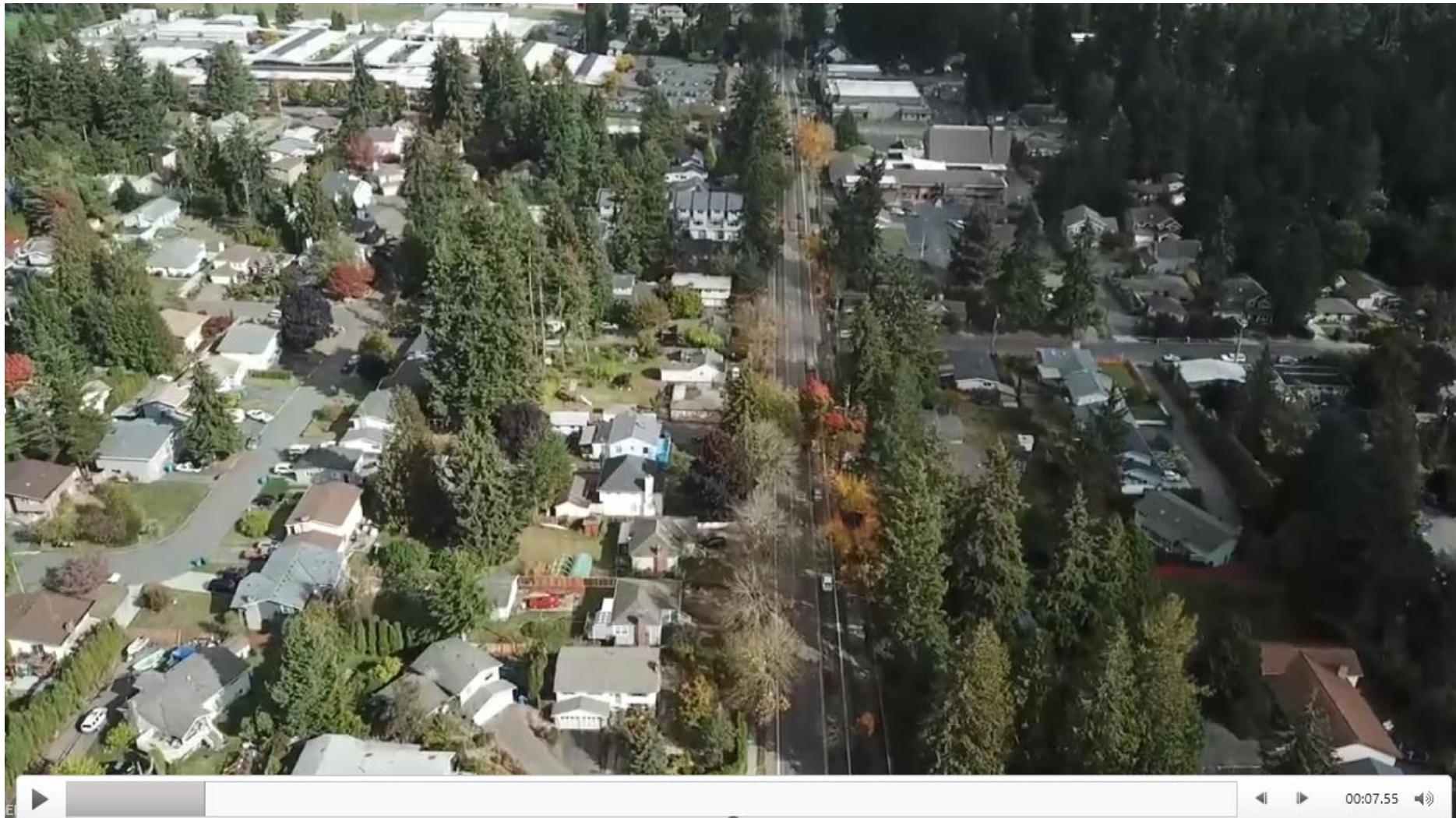
Pedestrianization Examples



SHORELINE 185th CORRIDOR

INFER A DIFFERENT PERCEPTION OF THE STREET IN FRONT OF
YOUR HOME?





E



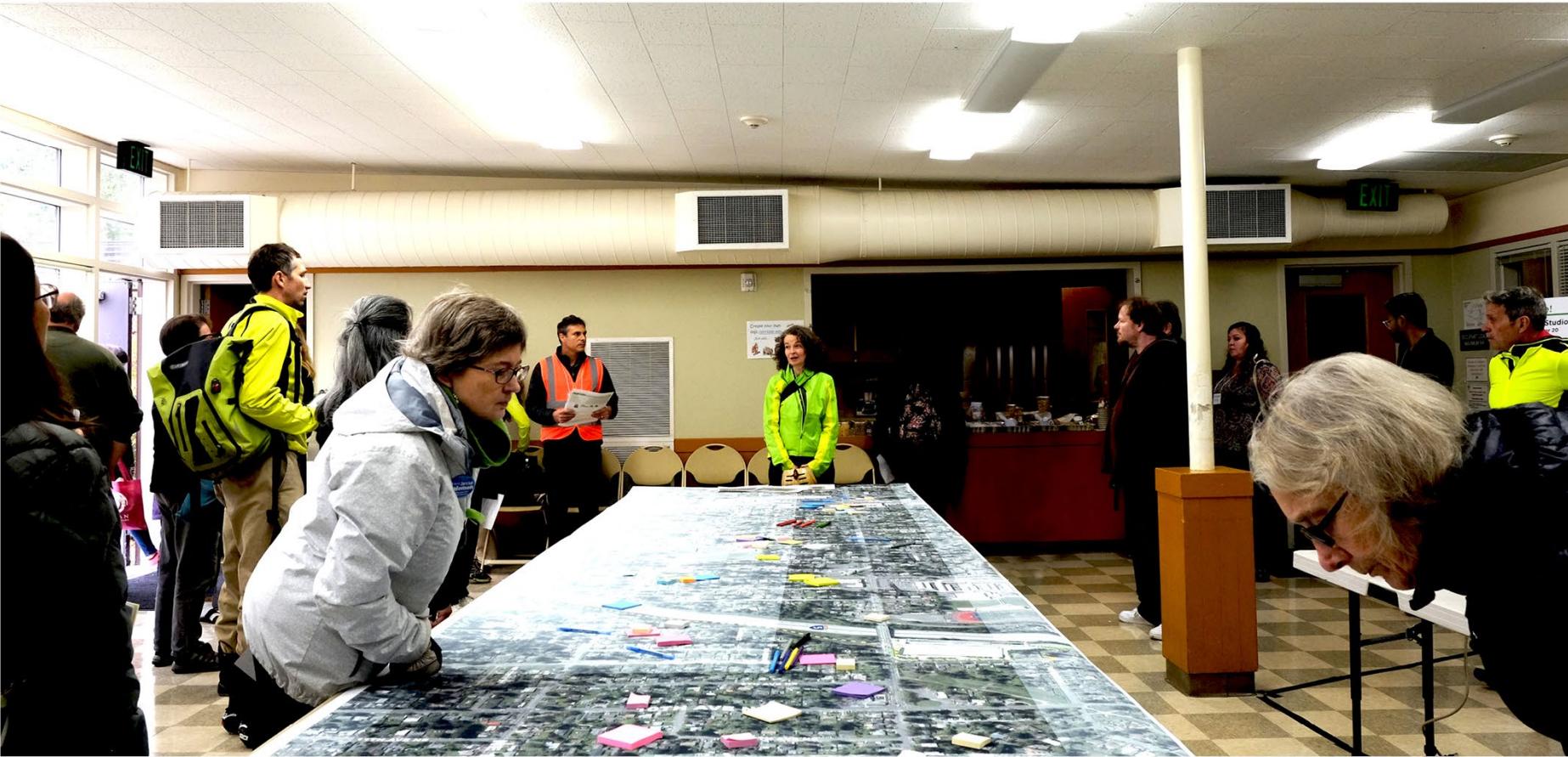
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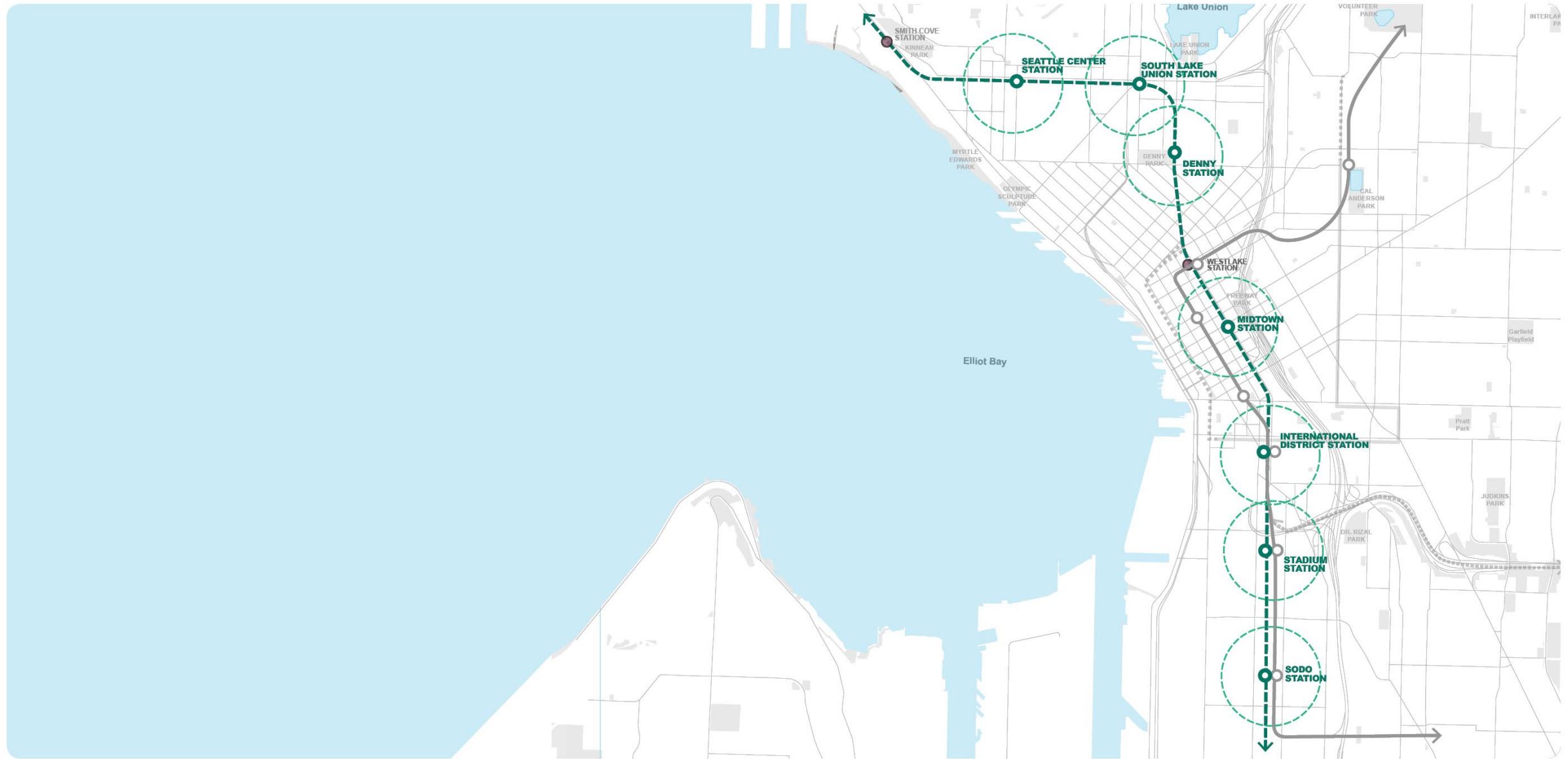
DATA-DRIVEN DESIGN PROTOTYPES

HOW TO EVALUATE THE URBAN ENVIRONMENT
ALONG A TRANSPORTATION PROJECT?

Context:

Transportation Project
LMN Architects

Stations for Analysis



xX STATION LOCATIONS

**xX STATION LOCATIONS
xxx TRACK ALIGNMENTS**

xXXX
options

**xX STATION LOCATIONS
xxx TRACK ALIGNMENTS
xX TUNNEL TYPES**

xxxx
options

xX STATION LOCATIONS
xXX TRACK ALIGNMENTS
xX TUNNEL TYPES
xX STATION CONSTRUCTION TYPES

xx,xxx
options

xX STATION LOCATIONS
xxx TRACK ALIGNMENTS
xX TUNNEL TYPES
xX STATION CONSTRUCTION TYPES
xX NUMBER ENTRIES

xx,xxx
options

xX STATION LOCATIONS
xxx TRACK ALIGNMENTS
xX TUNNEL TYPES
xX STATION CONSTRUCTION TYPES
xX NUMBER ENTRIES
xX PLATFORM MODELS

xx,xxx
options

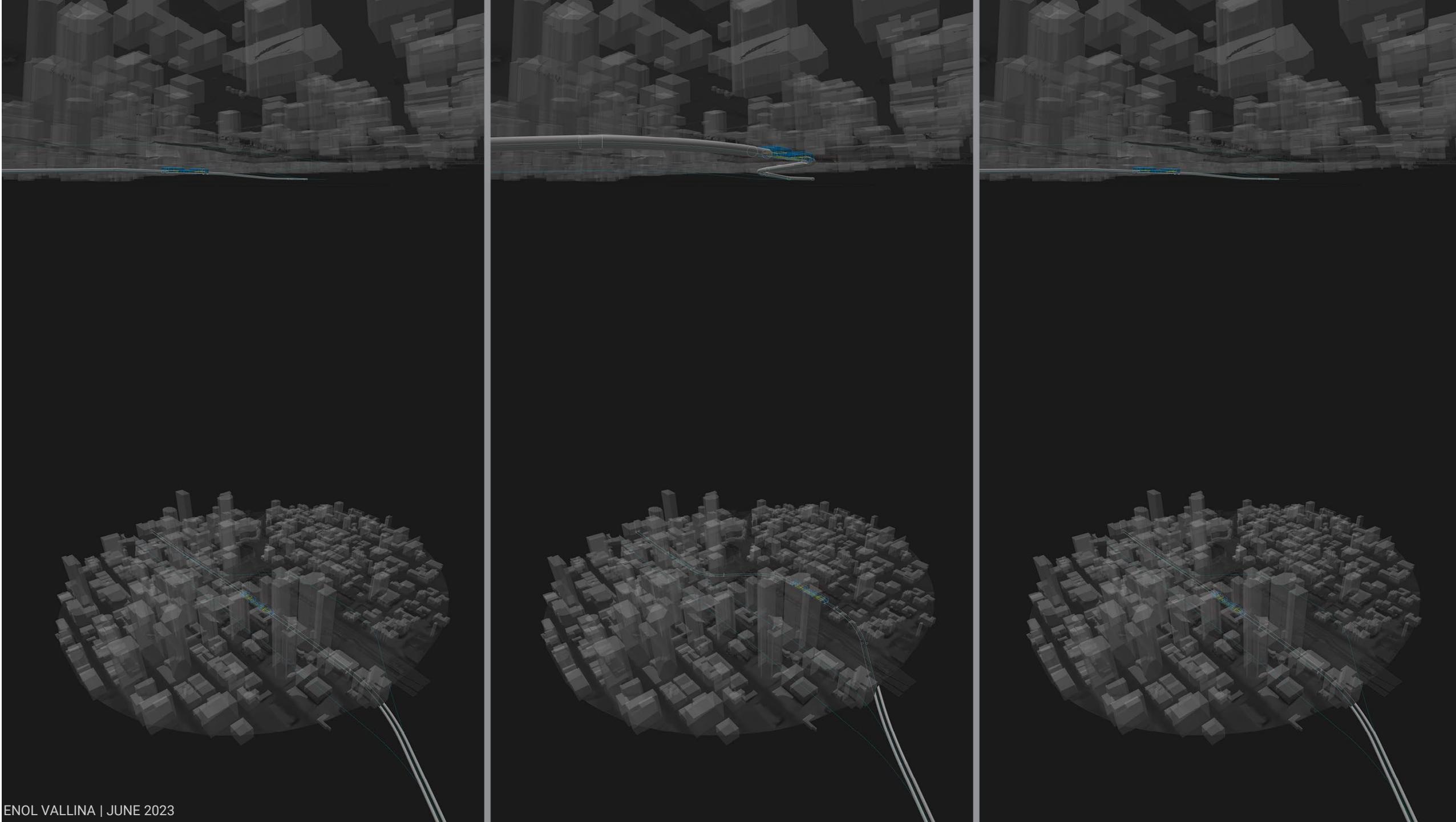
xX STATION LOCATIONS
xXX TRACK ALIGNMENTS
xX TUNNEL TYPES
xX STATION CONSTRUCTION TYPES
xX NUMBER ENTRIES
xX PLATFORM MODELS
xX STREET CONDITIONS

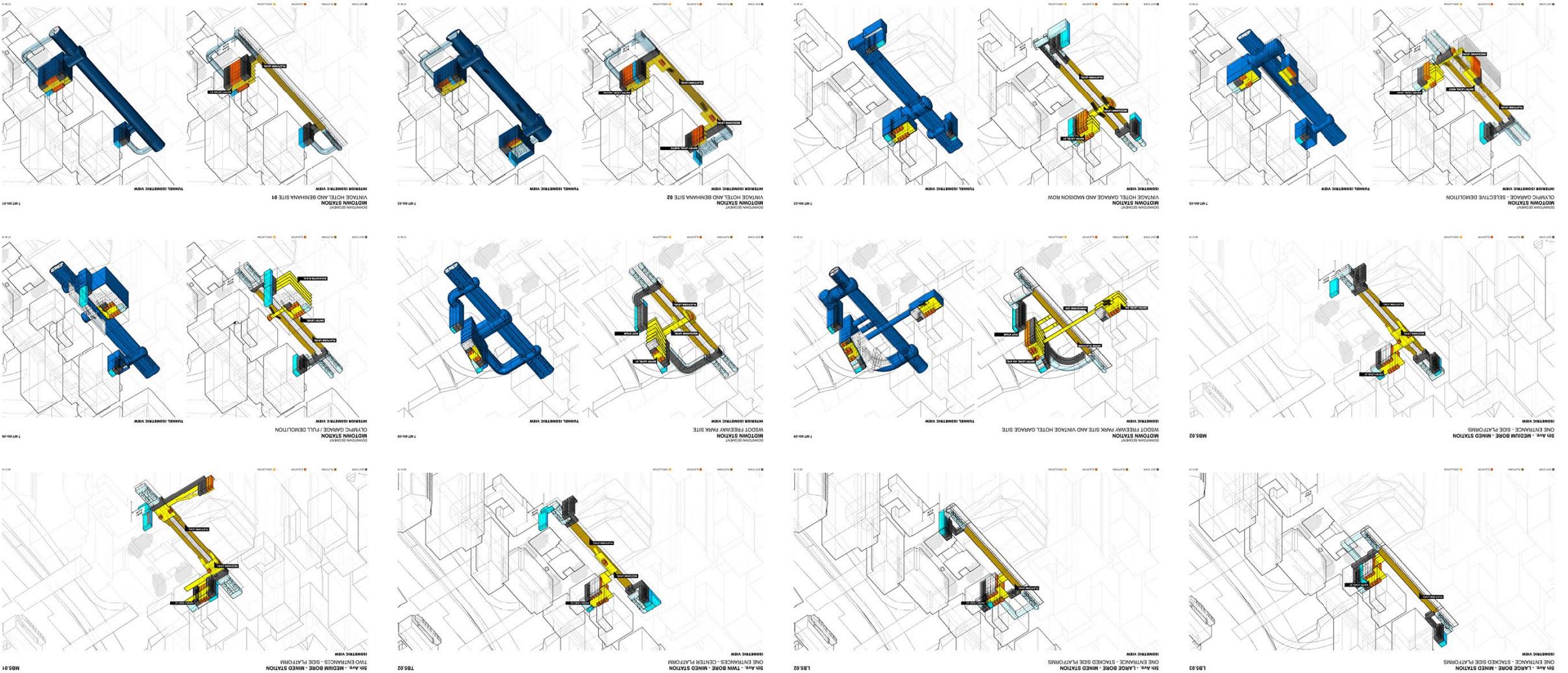
xXX,XXX
options

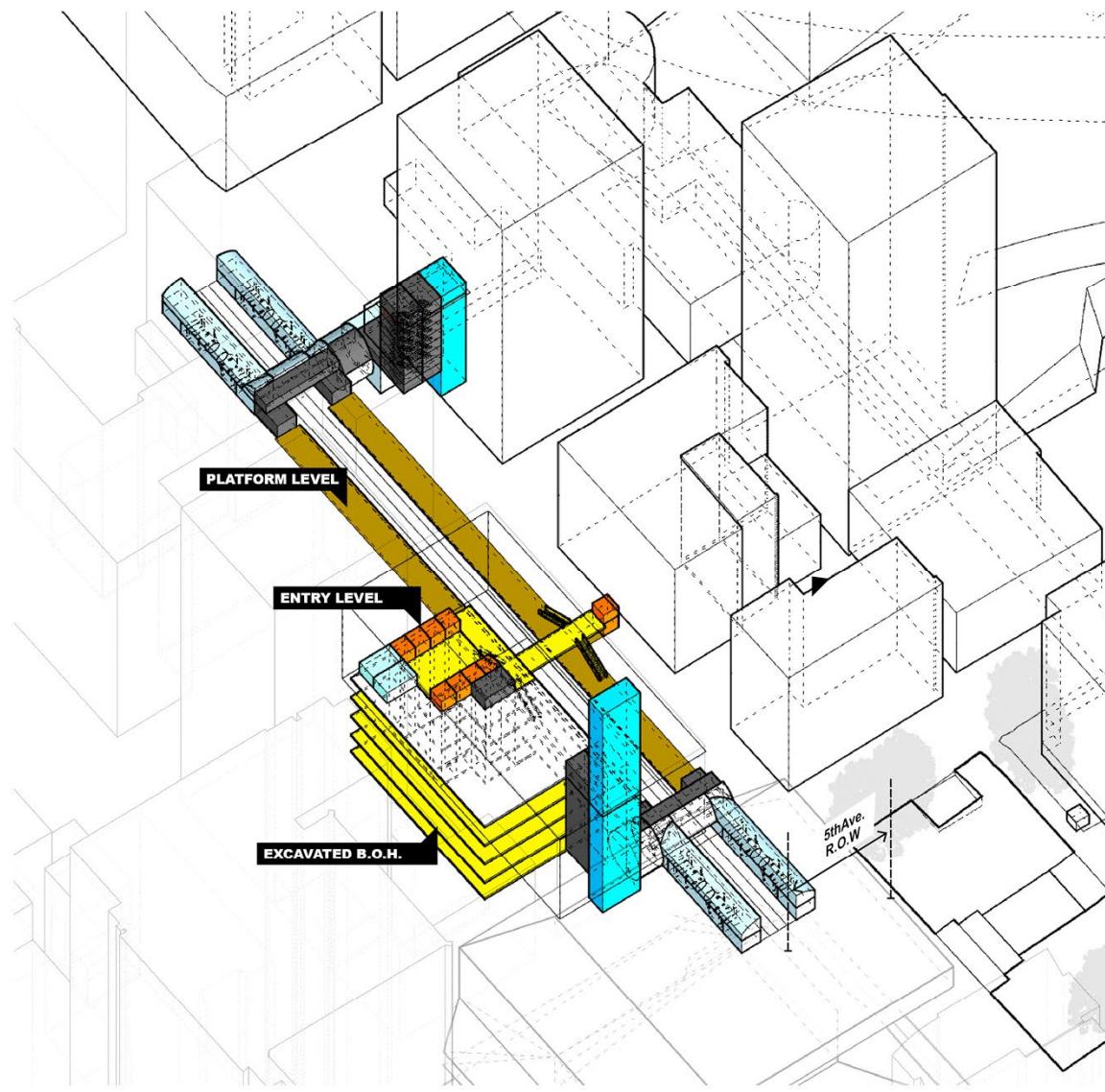
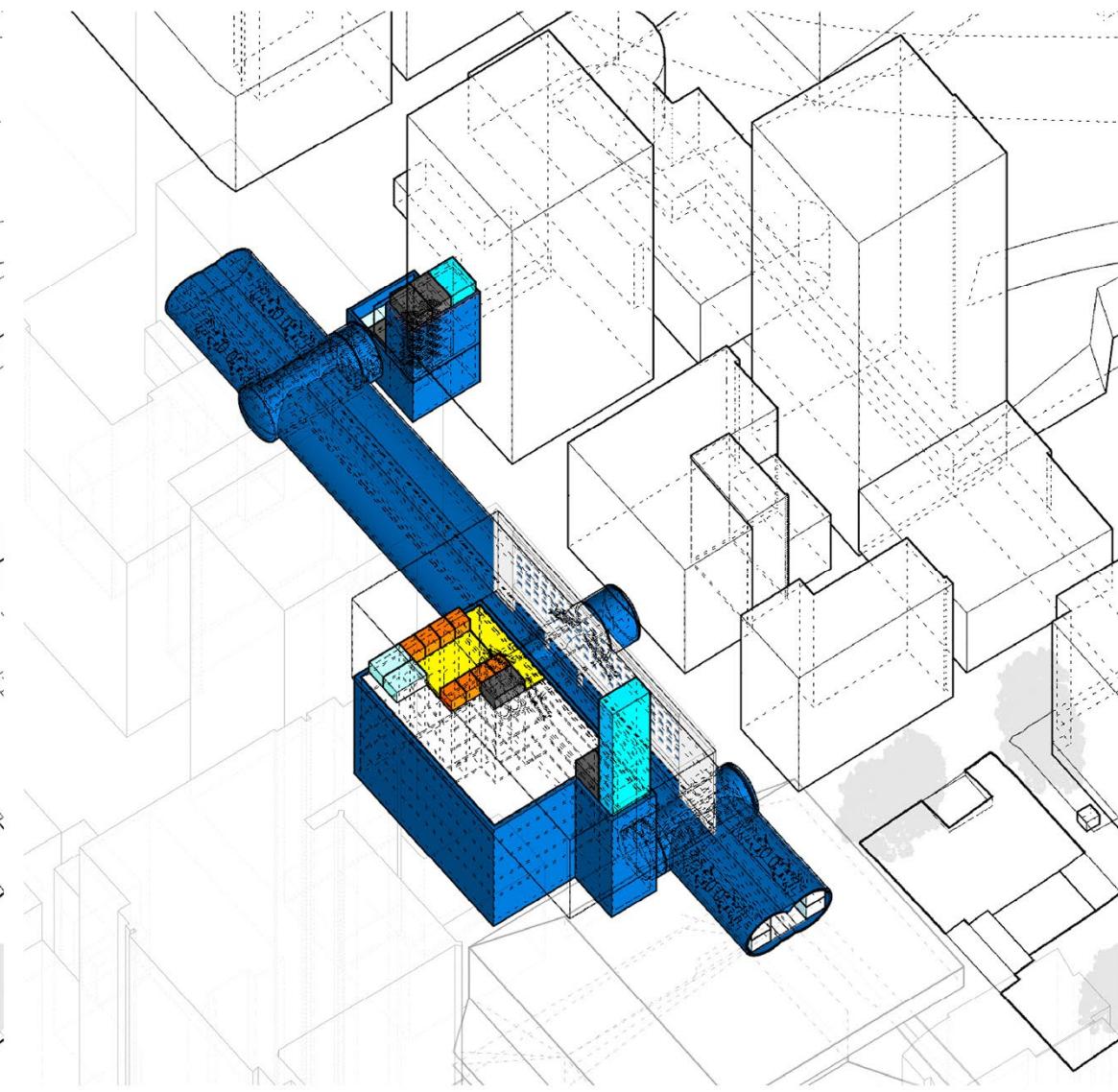
- xX STATION LOCATIONS**
- xxx TRACK ALIGNMENTS**
- xX TUNNEL TYPES**
- xX STATION CONSTRUCTION TYPES**
- xX NUMBER ENTRIES**
- xX PLATFORM MODELS**
- xX STREET CONDITIONS**
- xX CIRCULATION MODELS**

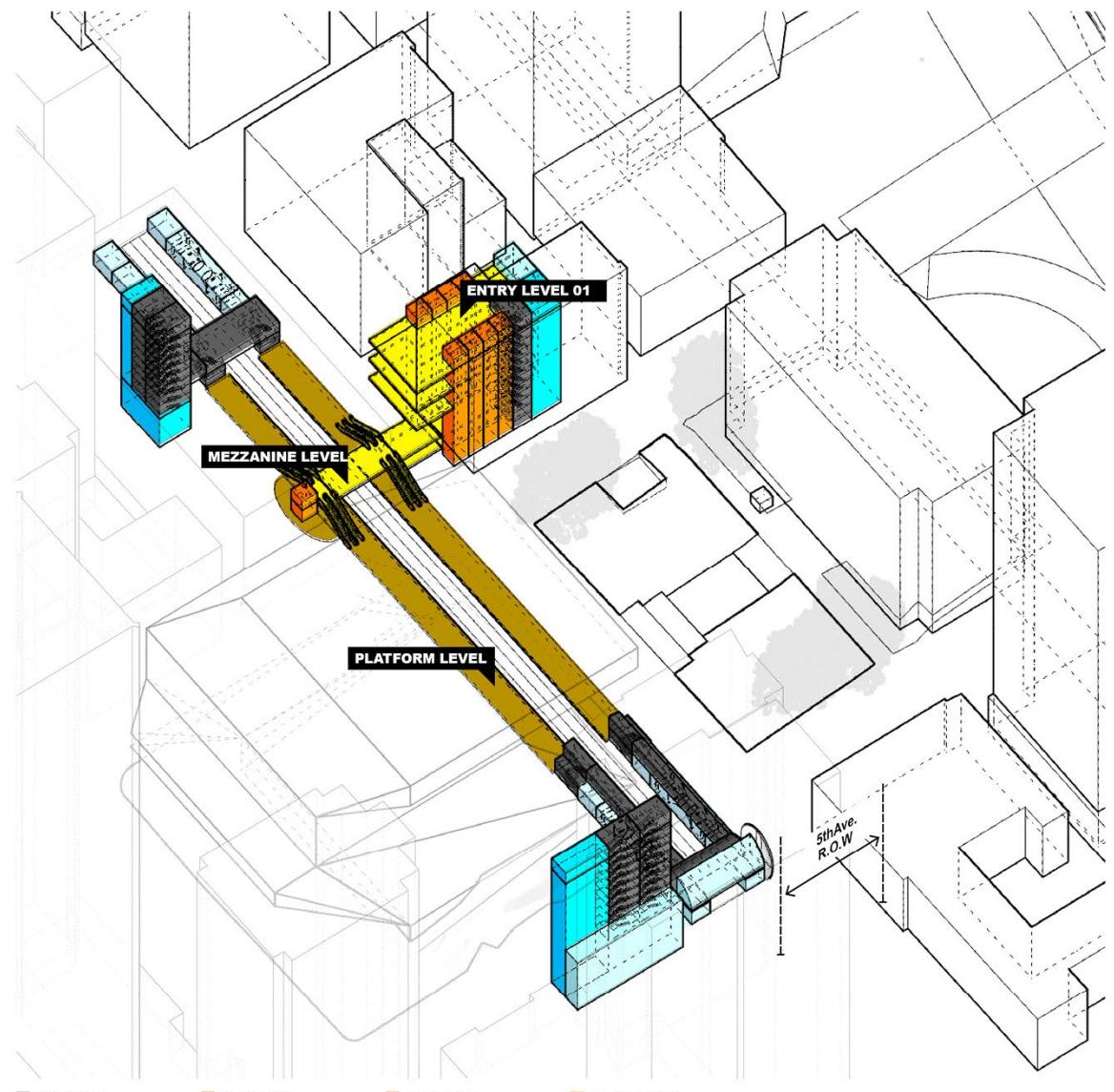
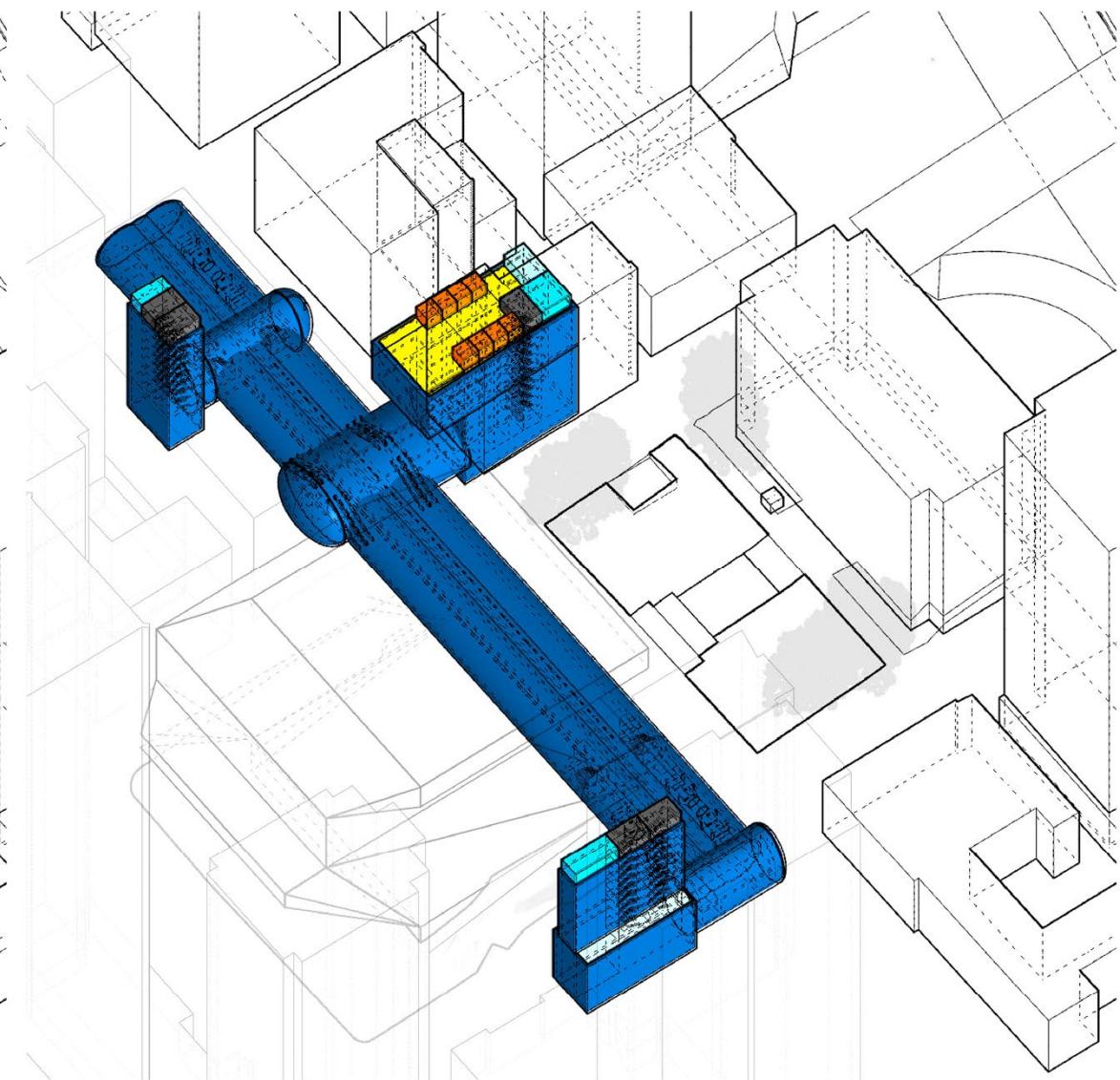


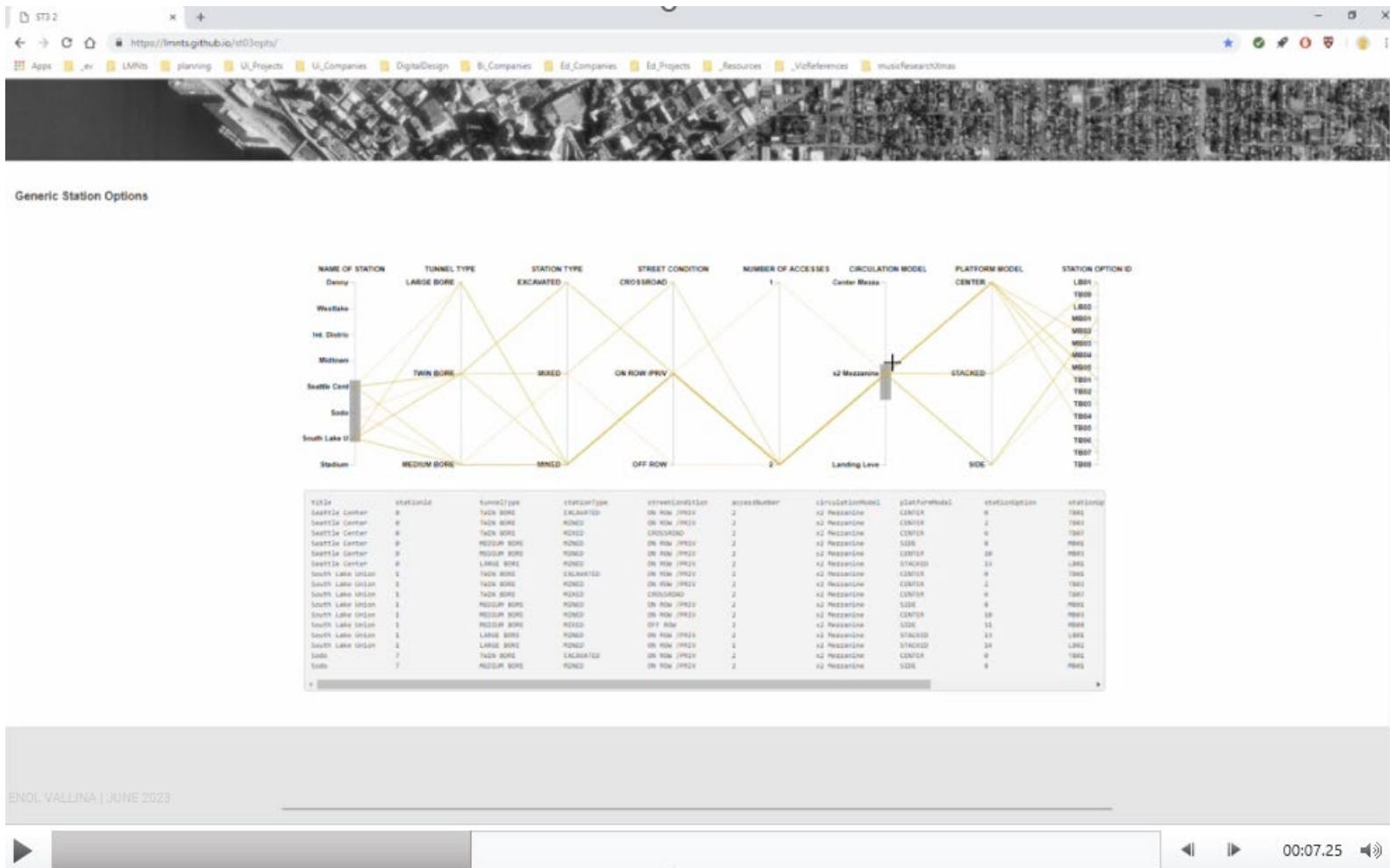
xxx,xxx
options





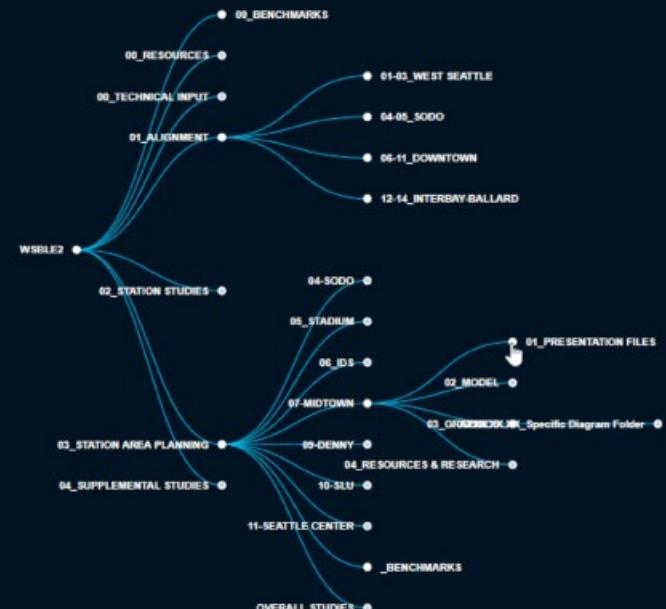
INTERIOR ISOMETRIC VIEW**TUNNEL ISOMETRIC VIEW**

ISOMETRIC VIEW**TUNNEL ISOMETRIC VIEW**



SOUND TRANSIT: WEST SEATTLE TO BALLARD LINK EXTENSION

Phase 02 | Project & Files Structure



INTERACTIVE URBAN ANALYSIS

EXPLORING ALTERNATIVE FORMS OF INFERENCE IN THE DESIGN PROCESS

Context:

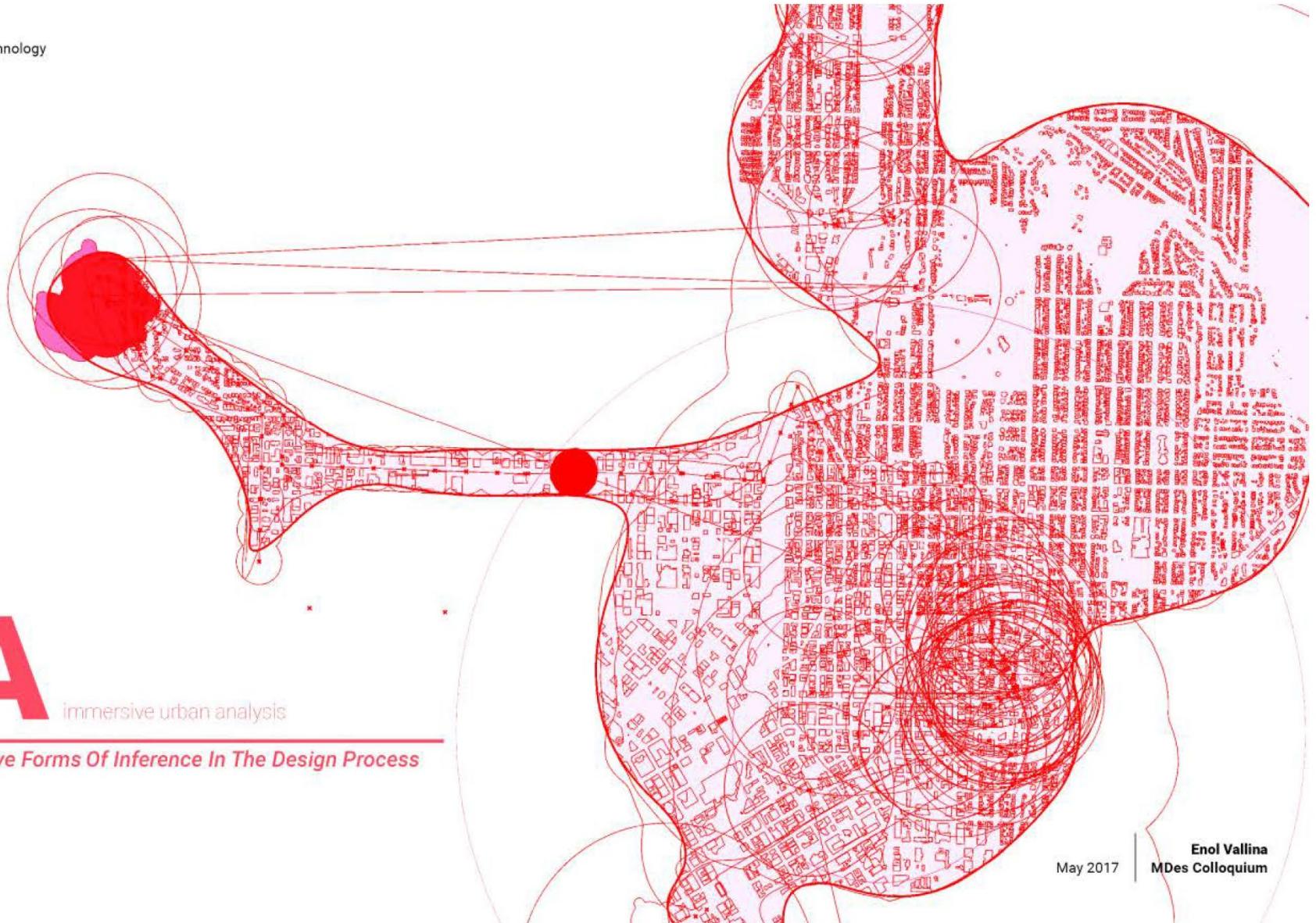
*Master in Design Studies, Technology - Final Thesis
Harvard GSD*

Harvard GSD | Master in Design Studies Technology

iUA

immersive urban analysis

Exploring Alternative Forms Of Inference In The Design Process



May 2017
Enol Vallina
MDes Colloquium

Acknowledging The Context

Increase Public Awareness And Learn From The Interaction That Citizens Can Have While Being In Direct Contact With The Public Data.

The current role of the community in the urban process varies significantly among cities and countries; however, the most common mode of participation is by organizing public community meetings at specific stages of the project. The purpose of this meetings is for informational reasons so the community could have the opportunity to keep track of the plans in planning process of the place where they live. Although there is an effort by some councils to engage with the community, the attendance to these meetings is limited in occasions and, in addition, it can also be questioned if the attendees profile represents fully the diversity of the community.

Social networks have transformed the way of relating between people in a community and they have also influenced the way of perceiving the urban space. Through a process of retro-feedback, a comment, a path or a rating can affect certain decisions, thus the individuals image of the city. Depending on the type of social network, a user is able to understand an invisible layer of information in the city; for instance, by using a fitness application such as "Strava" the user can learn about the most common paths to follow around the city for his or her running exercise. This common knowledge of the city's space can facilitate new information about the area that is analyze which, following the fitness app example, it could determine the decisions towards the network of open spaces or the accessibility of sport complexes.

The citizens automatically become a sort of an "informal urban expert" by experiencing the city; therefore, their data through the use of social networks could be a way to share their expertise for the good of the community besides sharing it with a network of contacts.



The 'Baseball Caps' Analogy Diagram

The Place: Seattle

Collaboration with LMNs

As a way to attempt to understand the city without pre-existing conceptions, it was important to get in to study the city without being personally attached to it; then, to be able to start from zero the analysis process and being informed by the locals about the different issues and advantages. Moreover, the overall experience of study the city from scratch was also a decision that goes in line with the principles suggested by Kevin Lynch in "The image of the city" in relation with the idea that a proper situationist experience would involve strolling around the city without any source of pre-existing information such as maps. Finally, an important part of this research was to have an expert local point of view on-site. This was made thanks to the collaboration with the research & development department of LMN Architects.

The collaboration allowed to help a series of workshops with the team that helped to understand the current issues and challenges of the city from an urban designer point of view. In addition to this process of understanding, the collaboration has also facilitated to have a valuable source where to contrast the assumptions made during the analysis part of the project.

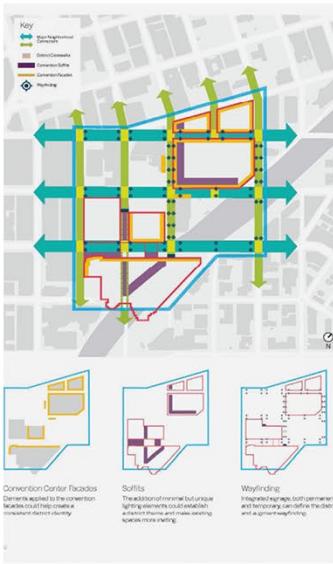
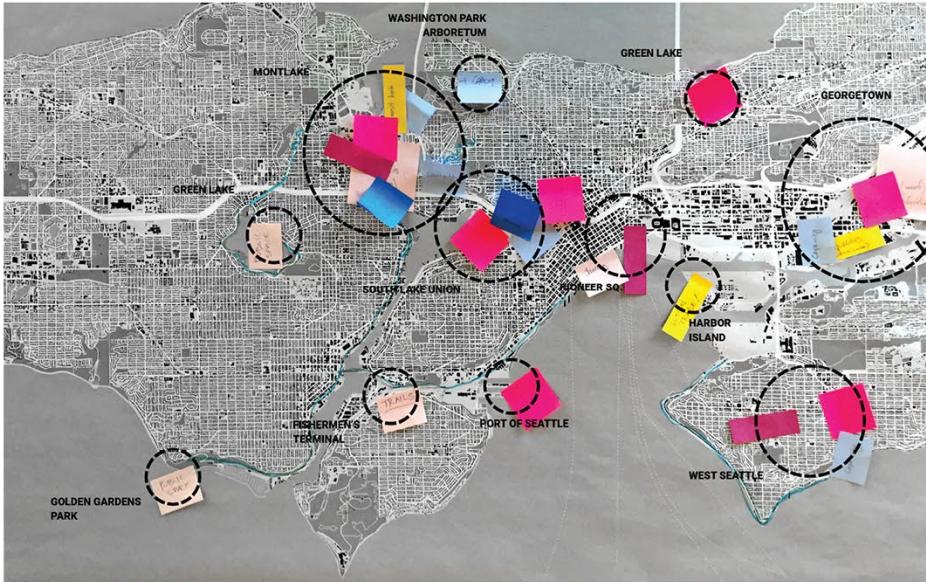
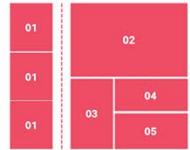
01. Organization of Workshops & Activities to Understand the Issues & Challenges of the City

02. Localization of the Areas of Interest

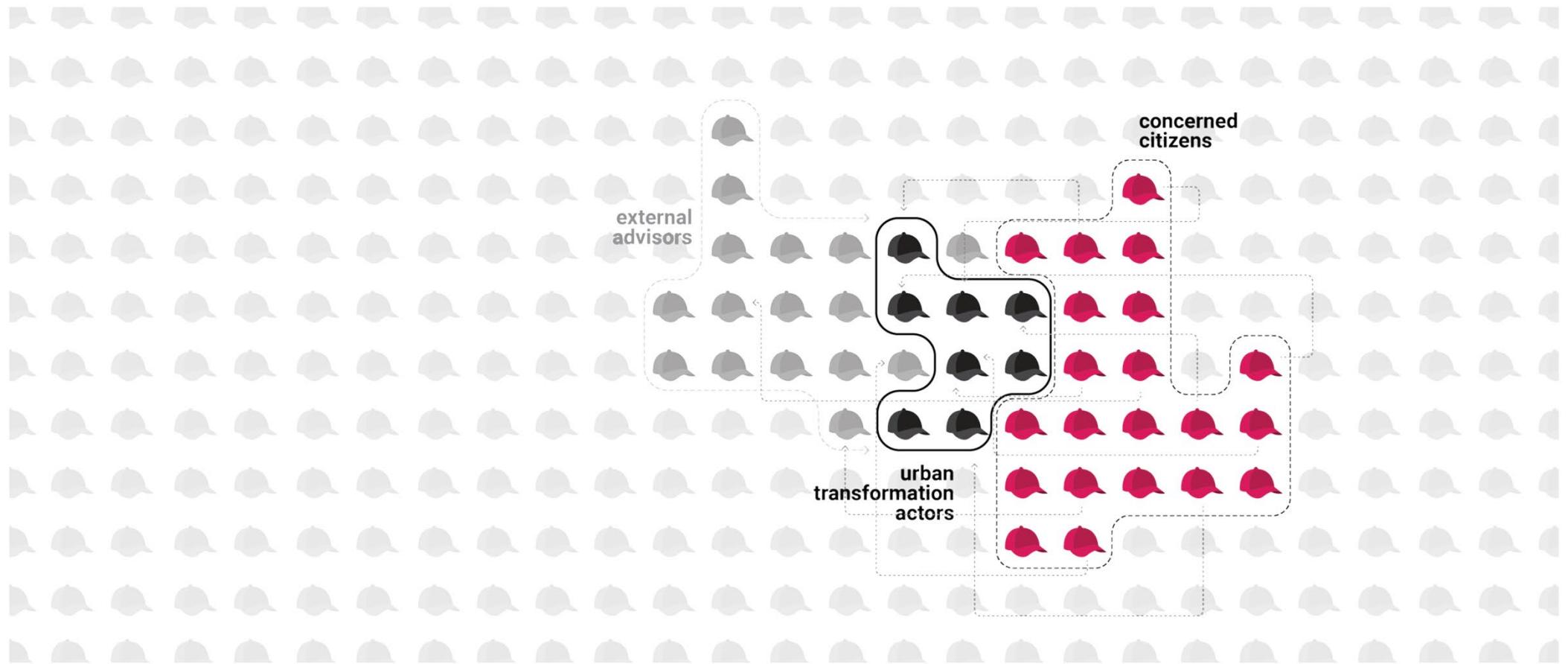
03. Understanding the methods used in the office to do Urban Analysis

04. Classification of Issues around Broad Topics

05. Research about Urban Design Projects done by the Studio

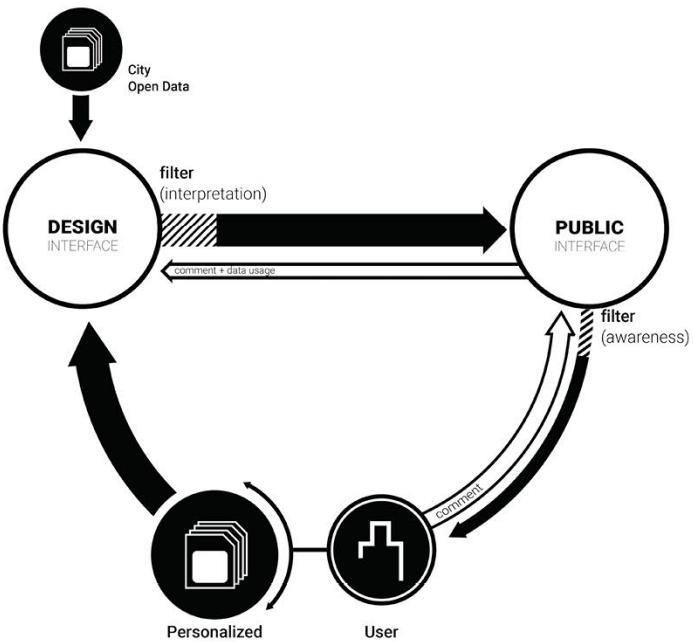


INTERFACES



The Construction Of The Interaction

The proposal consists of a workflow in the form of a loop that is retroactively informing itself by the interaction of the designer and the individual who is using the public interface. The data that is visualized is a combination of general geographic information and the individual's personal data relevant for the site. Therefore, this loop consists in three phases that have also been technically developed with different tools.



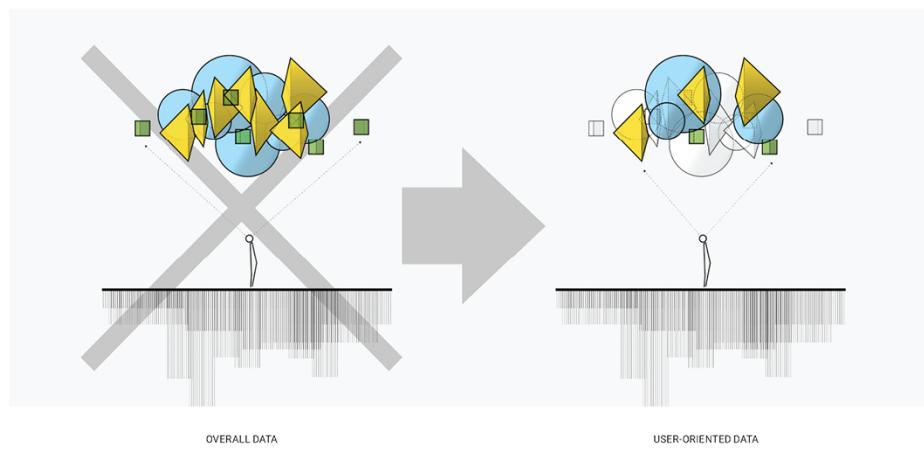
Workflow Diagram



Data Gathering

Personal Profile

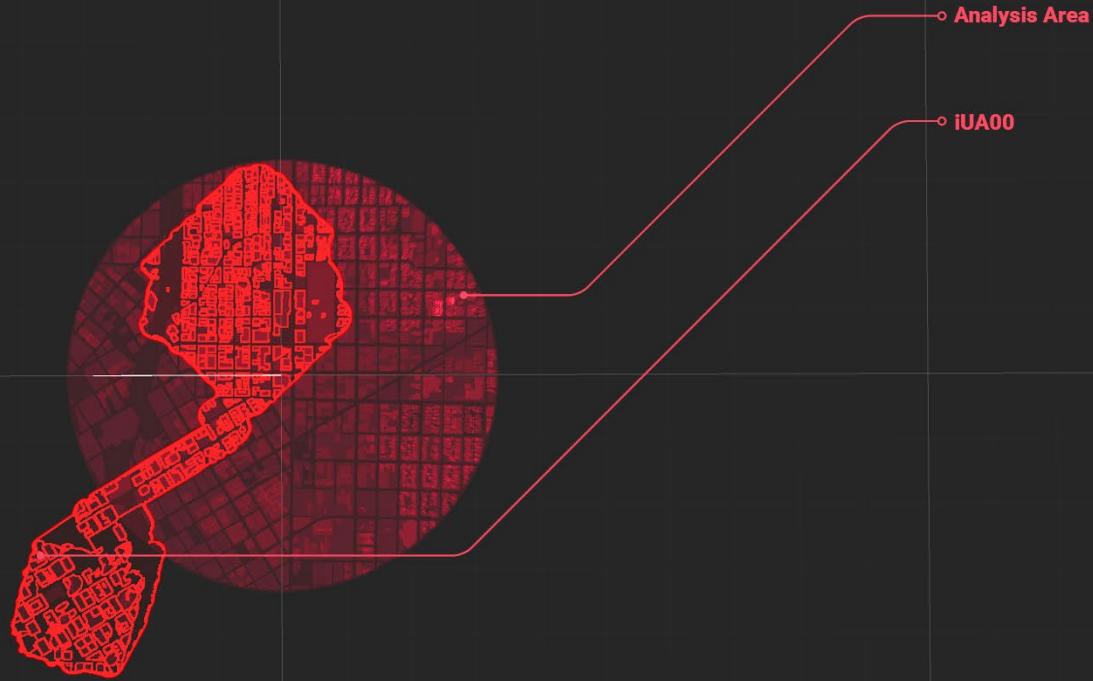
The project envisions a situation where the individuals who have the right to be involved in an eventual urban transformation could have access to the system of interfaces. The reasons for having access can be as obvious as being residents, having economic interests, working destinations or even being always involved in the case that the place has a special significance city-wide. Due to technical limitations of this research, it was decided to run three profiles that could cover a wide array of interests and modes of use of the urban environment. Therefore, the first action was to run a series of analysis of census data to understand the type of population that lives in the area of study.



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  "food_mode": "cooking",  
  "interest": "concerts",  
  "food": {  
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      "category": ["restaurants", "gym"],  
      "price": "1,2"  
    },  
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      "category": ["grocery", "bars"],  
      "price": "1,2,3,4"  
    }  
  },  
  "personal": {  
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    "dependents": 0  
  },  
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    "lat": "47.617632",  
    "lon": "-122.323922",  
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    "rent": 1500  
  },  
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  },  
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    },  
    {  
      "address": "1005 Boren Ave, Seattle",  
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      "tag": "socializing"  
    }  
  ]  
}
```



user
iUA00



Analysis Area

iUA00



Data Gathering

2. Identifying Relevant Social Networks

Trying to cover all the social networks that a user may be using during the day seems like a herculean task that will only be valid for a limited period of time since the life of certain services changes significantly through time. For instance, 'Myspace' or 'fotolog.com' were dominant more than ten years ago in the same way that 'Instagram' may be seen in a similar way in the future. Therefore, this research creates a catalogue of urban topics and, then, associates the subtracted information from a social network to these pre-defined urban-related topics.

This research recognizes the following urban topics which are also targeted by being Public, thus coming from public or governmental institutions or Private, hence collected by private companies:

1. Content

Information from social networks that enable the individual to express comments, visions or opinions in the form of words, images or video.

2. Fintech

Data that could give an overview of the micro-economy in the area and the trends for sharing.

3. Fitness

Tracking data that could show the usage of streets and open spaces for fitness and even commuting purposes.

4. Play

Taking in account the impact of augmented reality video games in the way that the city is interacted, it can be interesting to recognize those spaces in the same way as playgrounds are recognized.

5. Share

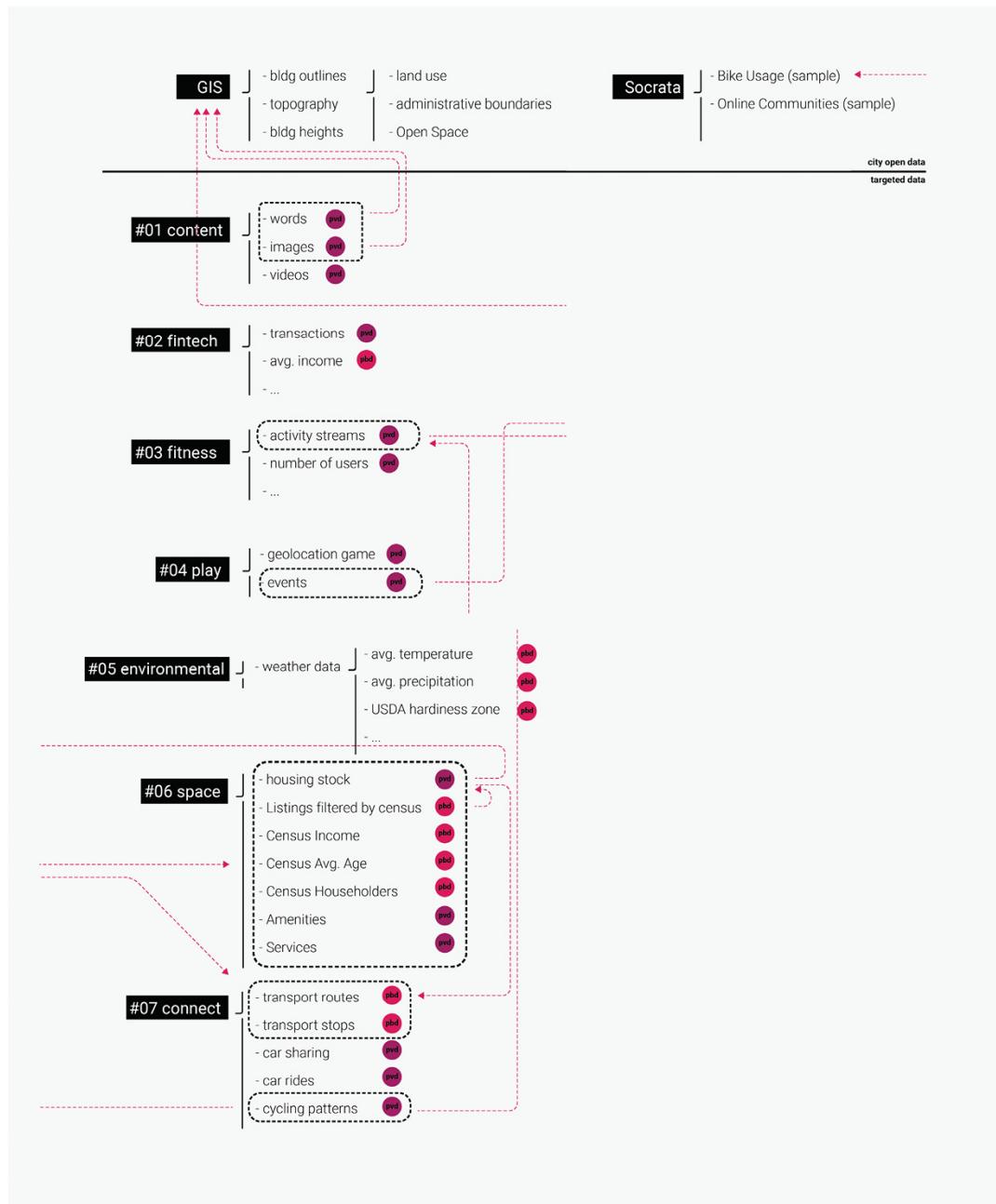
Access to data that provides an agenda of events and gatherings happening in an area.

6. Space

The connection with physical spaces around the city creates networks of destinations based on preference and habits. This information can help to visualize this networks in contrast to the land use or other administrative/legal boundaries.

7. Connect

Understanding connection as being able to physically connect places around the city, this information could show alternative modes of urban transportation such as car sharing, pedestrian flows, bike lanes or carpooling.



Data Gathering

3. Personal Data in Relation with the Site of Analysis

Based on the personal profile information, a series of scripts try to discern a set of data in relation with a time of the day, the 'spectacle space' defined earlier, the site of analysis and other personal information that could define the profile type such as the economic or marital status, number of dependent persons and their basic profile, household information. Data that can also be taken from the census database, thus it would be easier to correlate with other urban studies. Once the personal and contextual parameters are defined together with the urban topic to explore, the script connects the accessible API's to pull the data and, then, to format it in a way that it could be easily accessible by the design and the public interfaces.

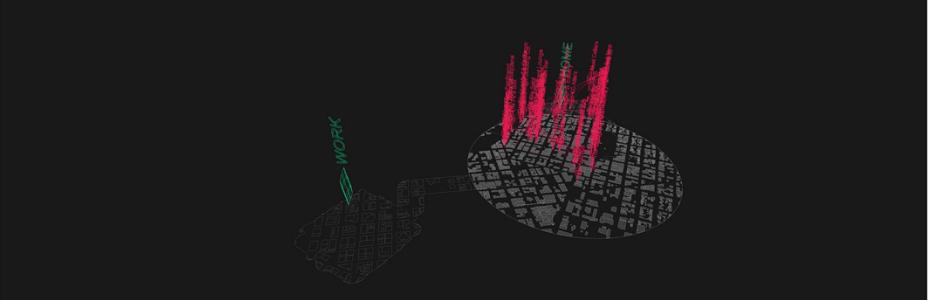
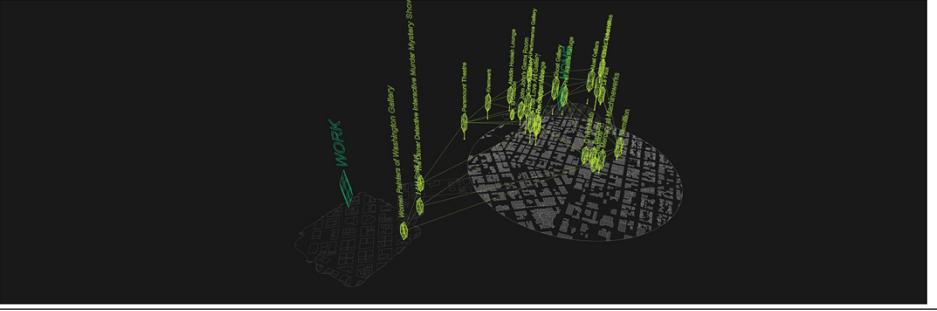
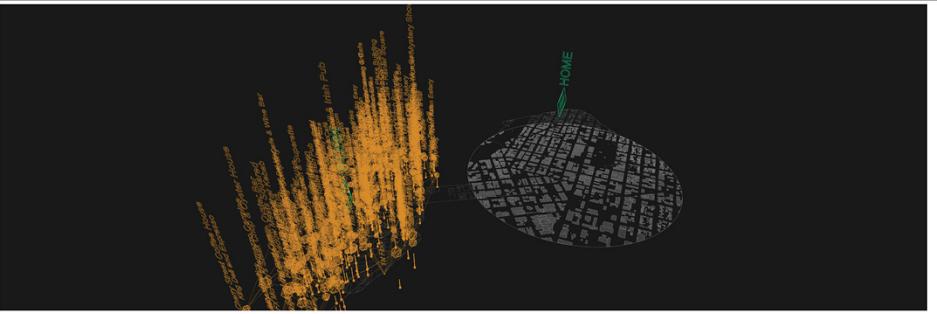
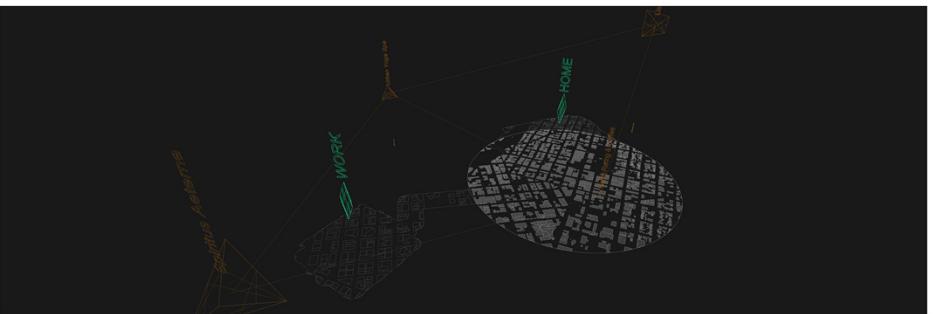
EXAMPLE OF DATA ANALYSIS
WITH THE USE OF SOCIAL NETWORK DATA
PERSONAL PARAMETERS
DEFINING THE DATA COLLECTED

USER: IUA00
TIME: MORNING (7.30-9.00AM)
ACTIVITY: FITNESS
ECONOMY STATUS: 1,2,3 /5
REACH: 2km
AREA ANALYSIS OFFSET: 3km
COMMUTING MODE: WALK
RATING TOLERANCE: 1,2,3 /5

USER: IUA00
TIME: NOON (12.00-14.00)
ACTIVITY: EAT
ECONOMY STATUS: 1,2,3 /5
REACH: 0.5km
AREA ANALYSIS OFFSET: 1km
COMMUTING MODE: WALK
RATING TOLERANCE: 1,2,3,4 /5

USER: IUA00
TIME: AFTERNOON (18.00-20.00)
ACTIVITY: ART EVENTS
ECONOMY STATUS: 1,2,3 /5
REACH: 2km
AREA ANALYSIS OFFSET: 3km
COMMUTING MODE: WALK
RATING TOLERANCE: 1,2,3 /5

USER: IUA00
TIME: MORNING (7.30-9.00AM)
ACTIVITY: SOCIALIZE
ECONOMY STATUS: 1,2,3 /5
REACH: 0.5km
AREA ANALYSIS OFFSET: 0.5km
COMMUTING MODE: WALK
RATING TOLERANCE: 1,2,3 /5



{ "The Instant Analysis Paradox" in Social Networks at a certain limited place. The percentage of users using geo-located posts is around 10% of the entire average volume of posts created in a specific time. Therefore, it becomes evident that, in order to get more precise results, the analysis period would have to be extended in time. This fact can be against the aim of a study to analyze behaviors during a certain period of time. Consequently, the accuracy of an analysis is contrary to the time frame analyzed. }

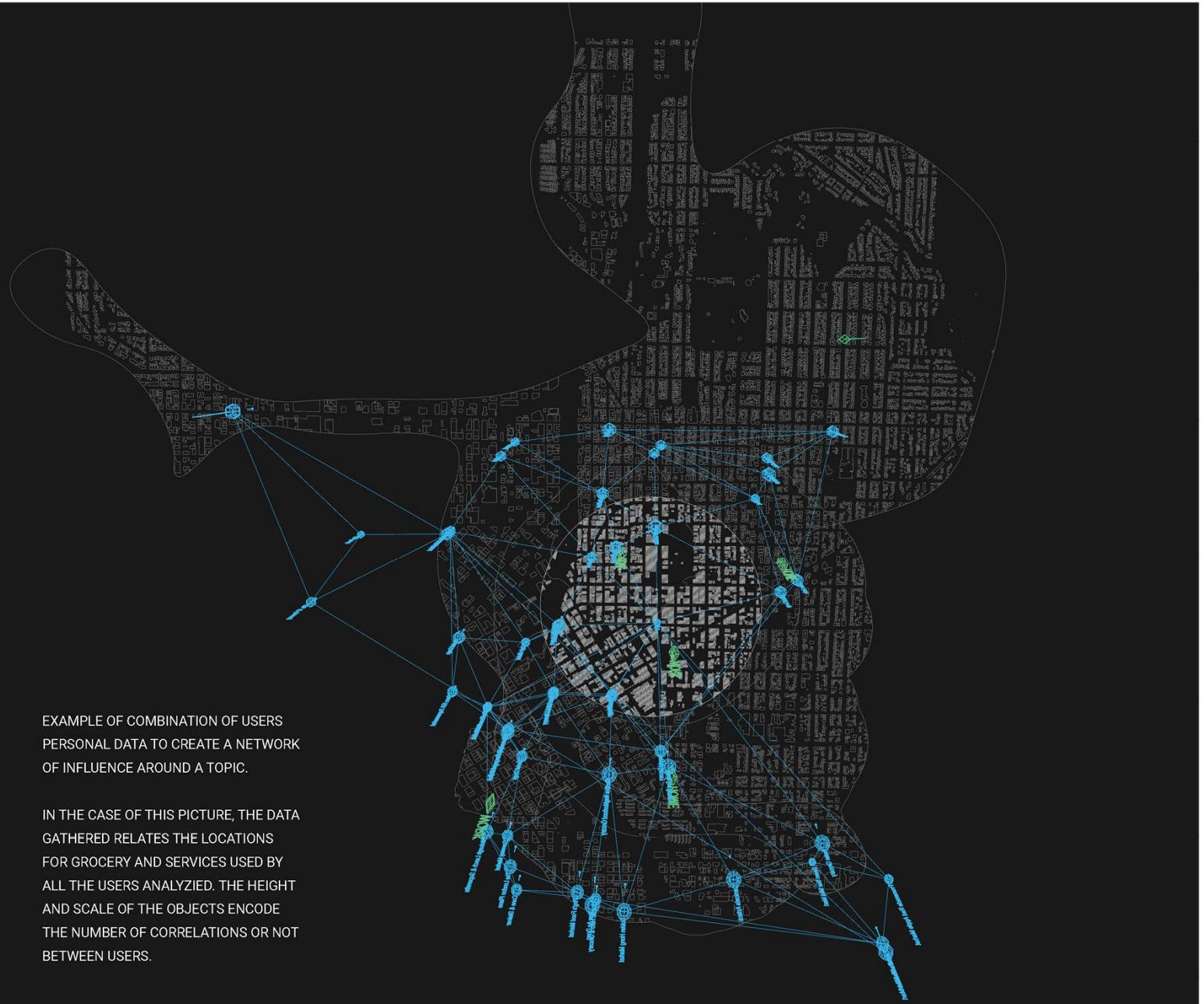
'Design Interface'

The Designer Interface has a crucial role in the entire interaction since it is where it is decided the type of approach towards a representation of data. As the interface channels the information gathered from the personal data and planning information, it becomes the space where a designer, as a part of the decision-making team, makes an interpretation of the site in response to the ambitions and requirements of all the concerned actors. By having the personal information included in the mixture of information to handle, the people is directly inferring into the analysis with their own information curated by the designer.

In addition, this interface is also receiving additional information from the interaction of the users of the public interface as well as other authorized mediums such as twitter hashtags or specific forum comments.

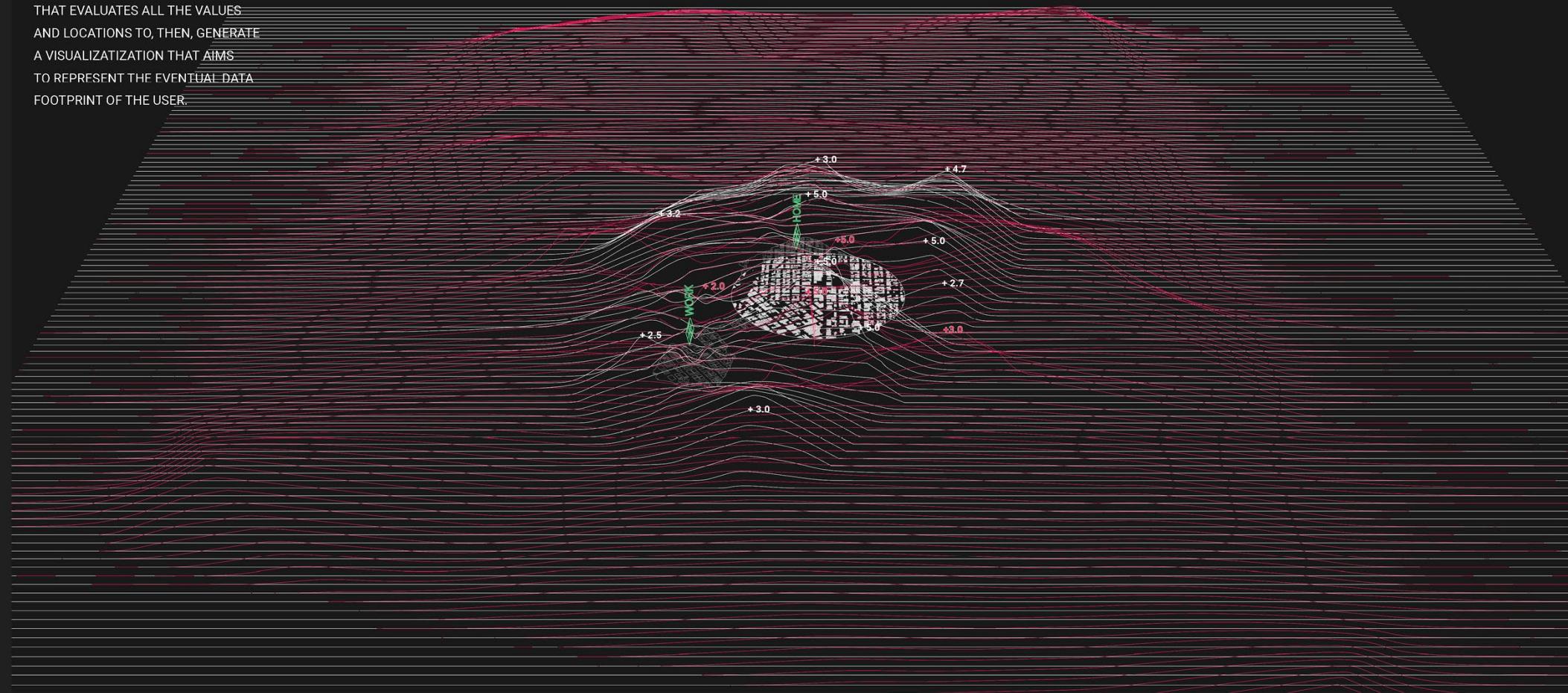
EXAMPLE OF COMBINATION OF USERS PERSONAL DATA TO CREATE A NETWORK OF INFLUENCE AROUND A TOPIC.

IN THE CASE OF THIS PICTURE, THE DATA GATHERED RELATES THE LOCATIONS FOR GROCERY AND SERVICES USED BY ALL THE USERS ANALYZED. THE HEIGHT AND SCALE OF THE OBJECTS ENCODE THE NUMBER OF CORRELATIONS OR NOT BETWEEN USERS.



'Design Interface'

BY PUTTING TOGETHER ALL THE RESULTS FROM THE DATA GATHERED IN SOCIAL NETWORKS RANKED BY RELEVANCE, THE DESIGN INTERFACE CREATES A SURFACE THAT EVALUATES ALL THE VALUES AND LOCATIONS TO, THEN, GENERATE A VISUALIZATION THAT AIMS TO REPRESENT THE EVENTUAL DATA FOOTPRINT OF THE USER.



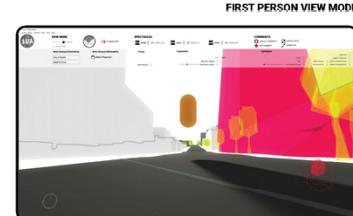
'Public Interface'

The 'Public Interface' has two three main functions: increasing data awareness, contrast the individual's spectacle space and an informed feedback process.

Firstly, it is an informational component of the design process. As it was described in description of the context, the channels for participation of the actual citizens who are affected by a future urban plan are outdated in the opinion of this research; consequently, it seems a necessity to reach with alternative tools those who are not represented or, at least, to give them the opportunity to participate. The fact of having an interface that could decode the complexities of the urban process seems crucial in order to increase the public awareness, hence promote social engagement with the affairs of their surroundings. Therefore, this interface uses a visual language, a way of interaction, closer to the one used in videogames as an attempt to create an intuitive environment where to understand the upcoming urban surrounding urban environment and its future plans.



WELCOME PAGE



FIRST PERSON VIEW MODE

The initial interface has an overall visualization of the area of analysis. The menu on top provides simple tools to change the solar incidence, and change to 'first person camera', which allows to 'walk' around the city to give a different sense of scale

INTERFACE:
INITIAL MODE



This mode gives general planning information such as land use, heights, etc. Besides other type of information that could be relevant for the project itself such as tree locations or bike infrastructure. Moreover, it also provides general information about the use of social networks by providing a series of clouds that represent the most used areas for posting on twitter.

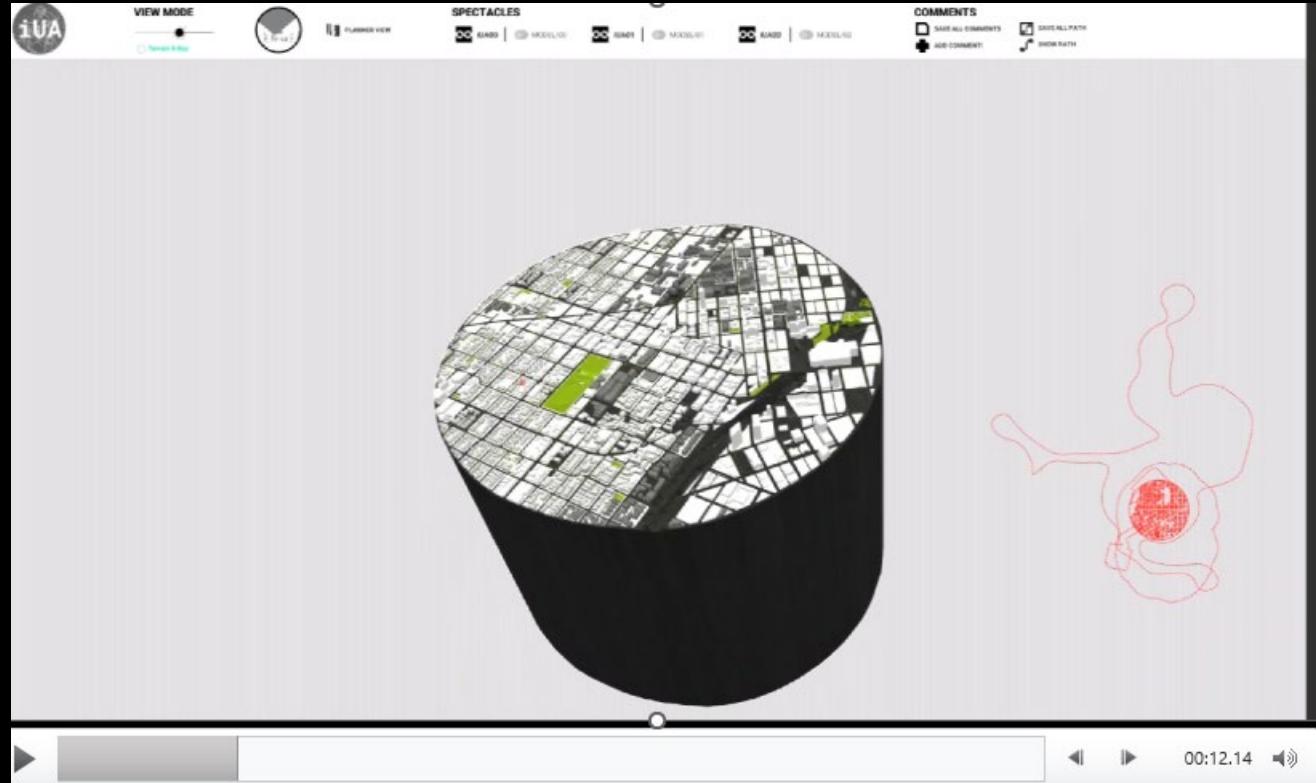
INTERFACE:
PLANNER MODE



This mode that gives the personal information based on the preestablished characteristics of the user. The menu below allows to project the data in both modes of view or to merge it with the planning information.

INTERFACE:
SPECTACLE MODE

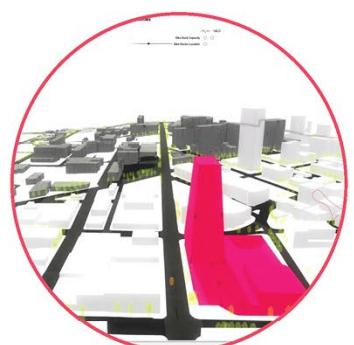




'Public Interface'

Secondly, since the personal data is collected in algorithmically transformed to create empiric data that could help to understand better the associations and complexities of the urban environment beyond the layered planning data, in this interface this data is visualized in the way that the individual that would access this interface will be able to contrast the strategies and the data assumptions behind the urban plan with her or his own data. This representation of the individual's areas of influence, connectivity, space associations etc. is eventually representing his or her own spectacle space.

Finally, this virtual environment can also help as a platform for public feedback as an additional way to the traditional public meetings. However, it is the believe of this research that the process of commenting through this application would be more informed with a background knowledge gained by having access to a set of information of difficult access and having the opportunity to contrast this information with the individual's personal data.



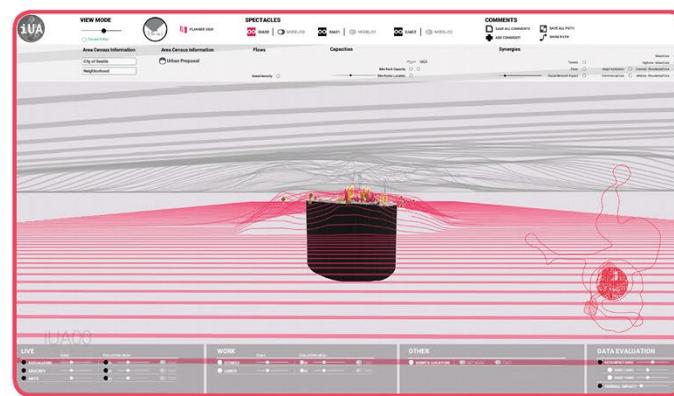
The user can have an understanding of his or her own data footprint and access the information that generates it.

DAILY DATA VISUALIZED



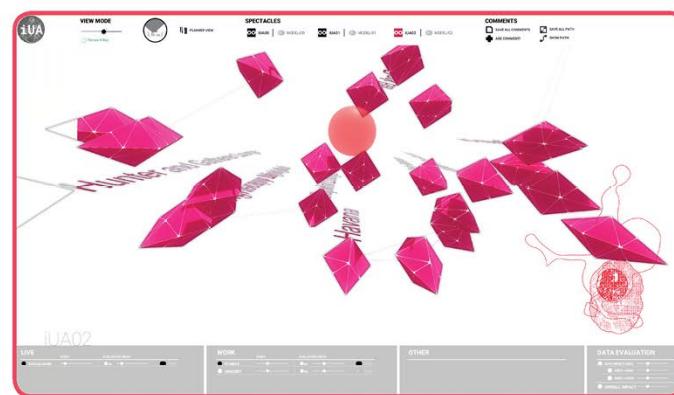
In the same way as in the Design Interface, the evaluation surface can be visualized in the 'Public Interface' as way to contrast the users footprint with the average footprint of all the participants.

EVALUATION SURFACE



Besides being in the model itself, the data can be contrasted by 'looking to the sky', so the user can reference it with the rest of information.

SPECTACLE DATA FIRST PERSON VIEW



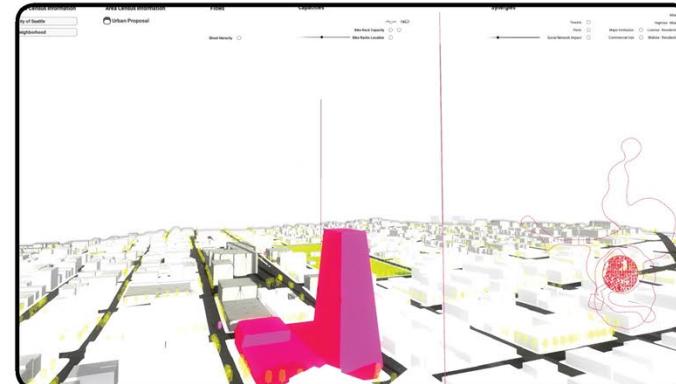
'Comment & Feedback'

'Public Interface'



The user is able to place a comment while 'walking' in the interface. This comment will be classified by the user with a topic tag (ex. public realm) and stored in a JSON file linked to the 'Design Interface'.

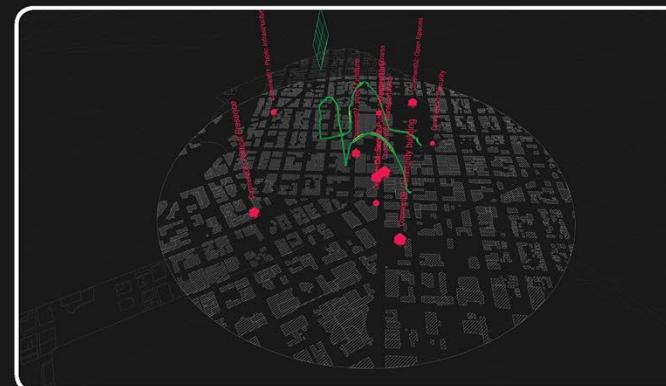
INSERT COMMENT



The comments are visualized in the interface as 'infinite' totems; consequently, the user can have a spatial reference of the interaction. Once finished, all the comments are saved or re-saved in the data file.

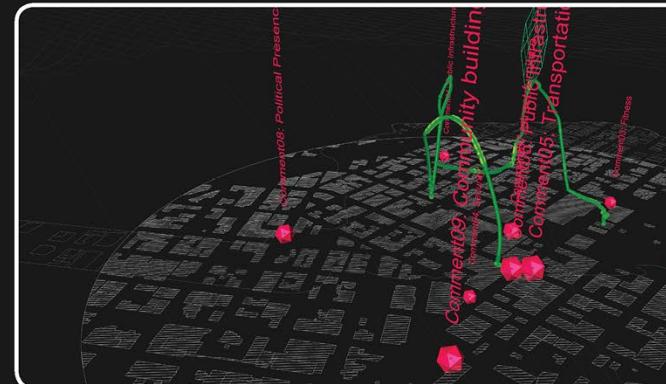
COMMENTS SPREAD
THROUGHOUT THE CITY

'Design Interface'



By reading the data file of the comments saved by the user, the design interface automatically generates the comments (red) in the map.

OVERALL FEEDBACK



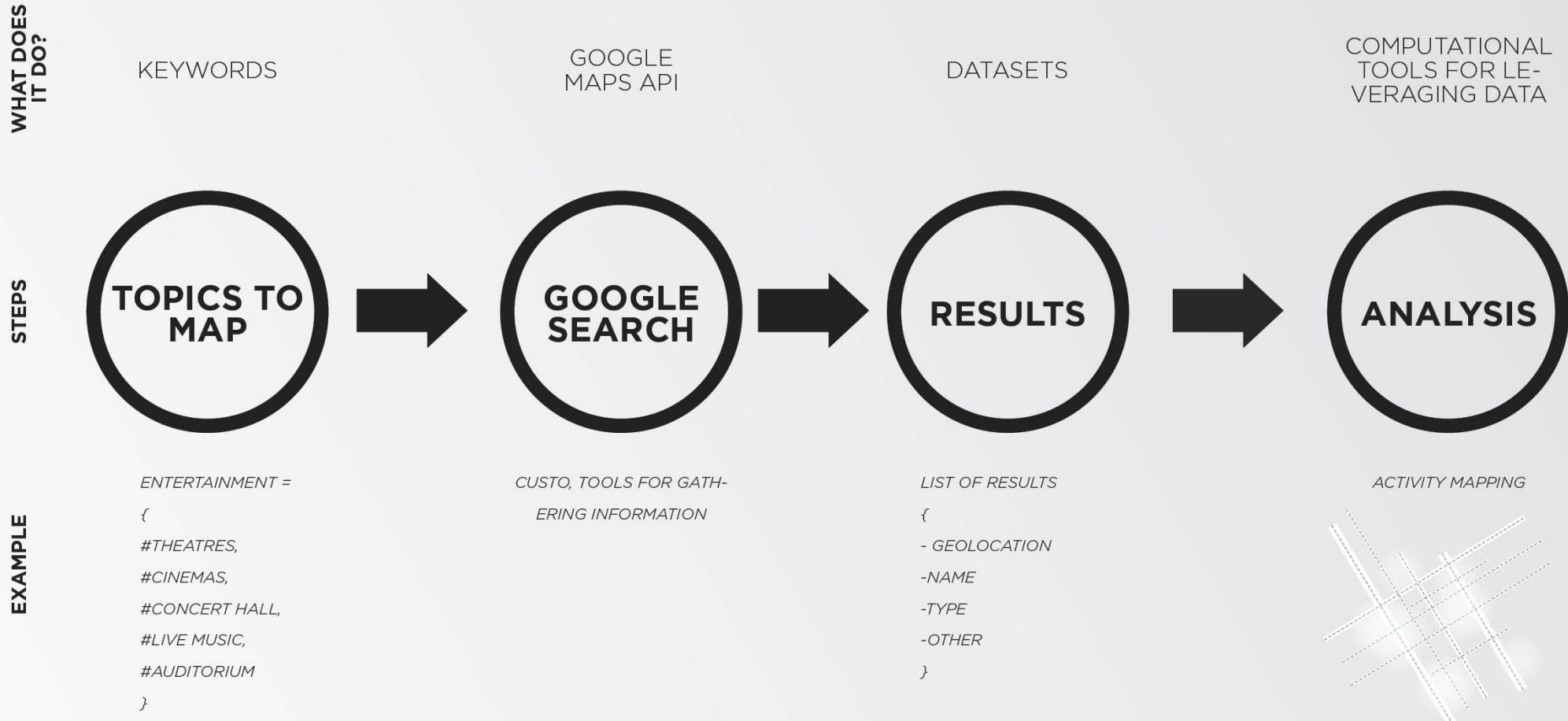
In addition, the information about where and when in the space the user has interacted is also stored. The Design Interface generates a polyline that represents the path of the user within the model (green), and the thickness of the polyline encodes the how much time the user spent in that location.

USER TRACKER

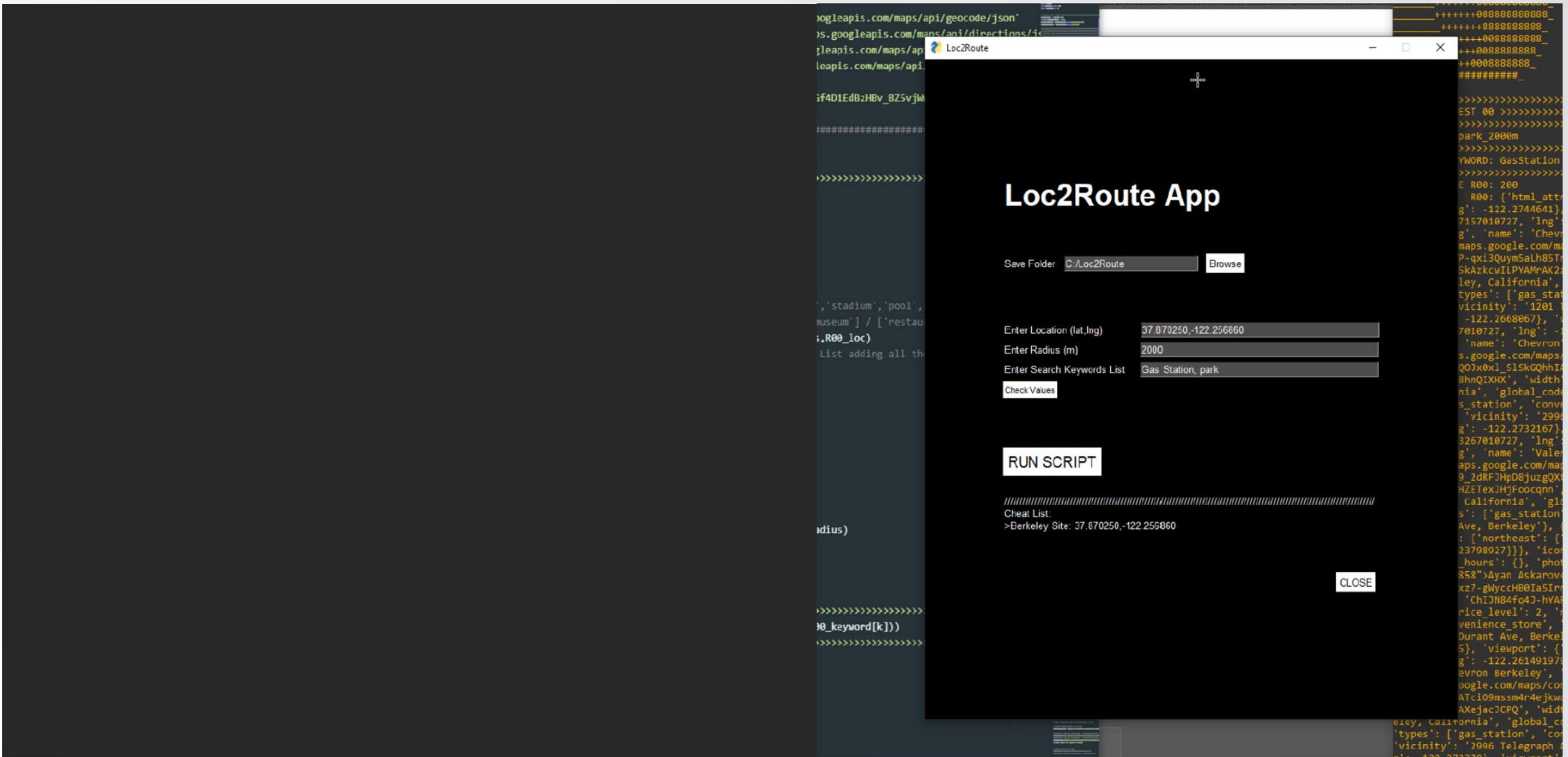


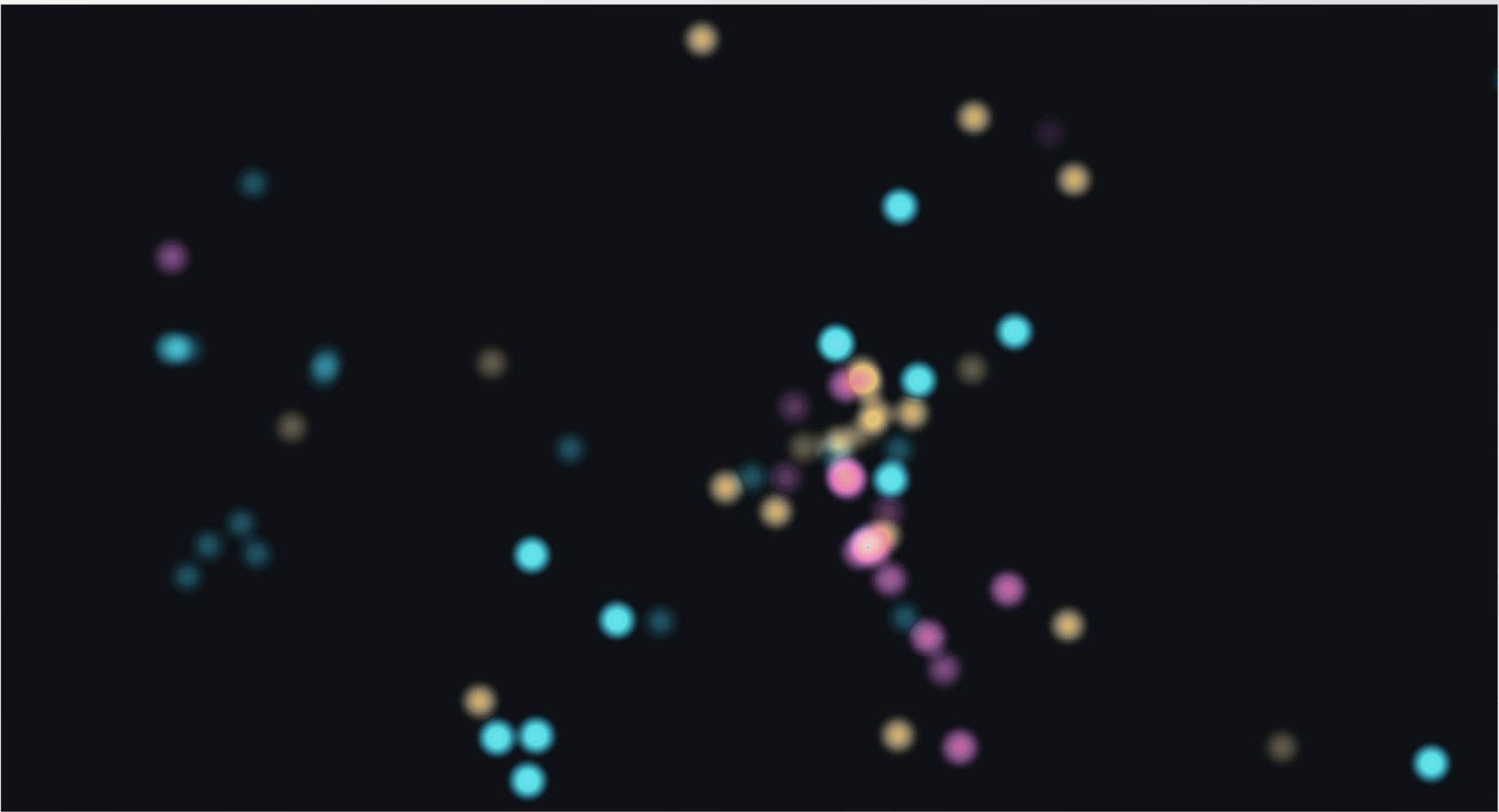
ACTIVITY MAPS

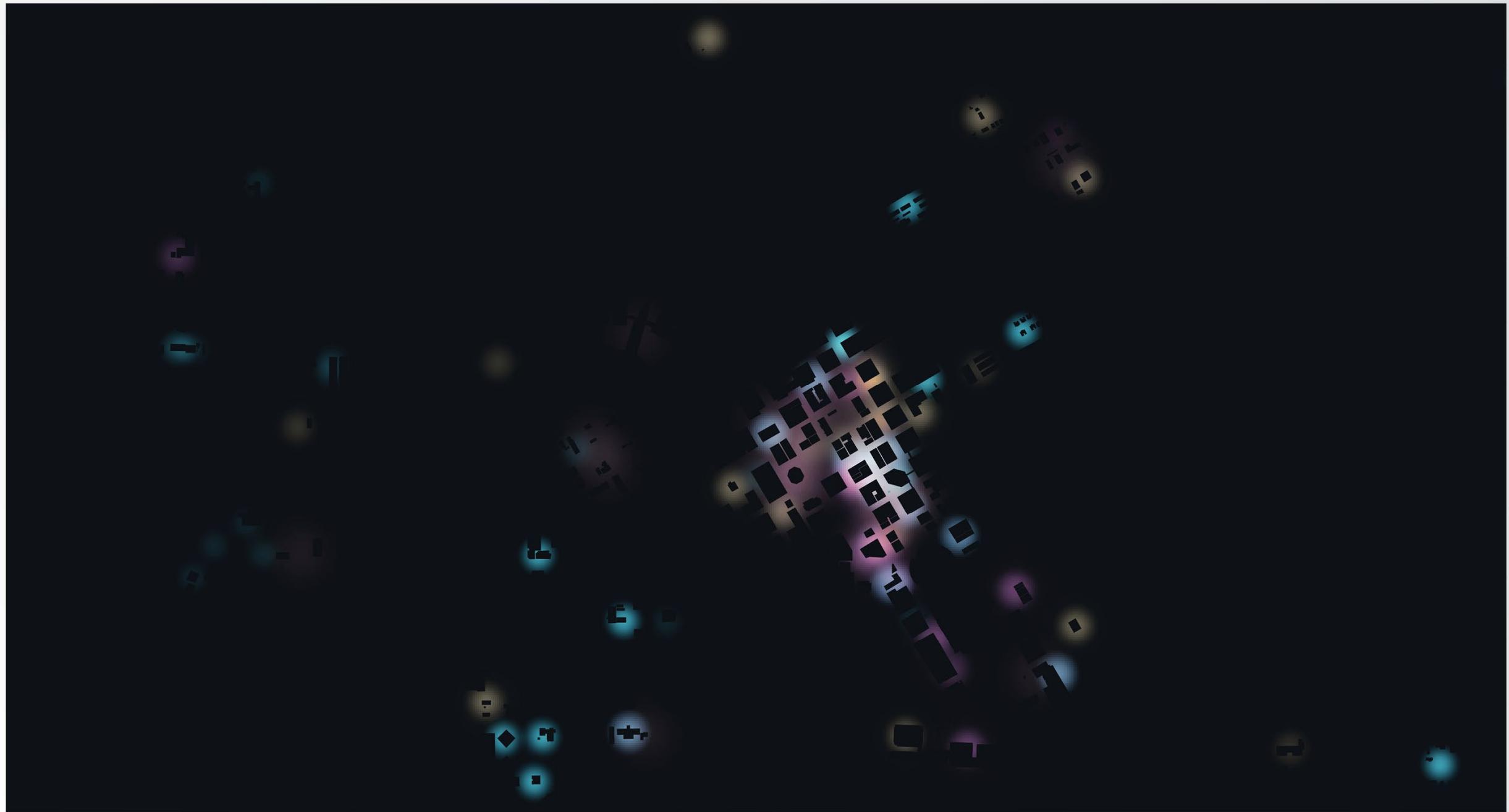
CUSTOM CATEGORIZATION ANALYSIS



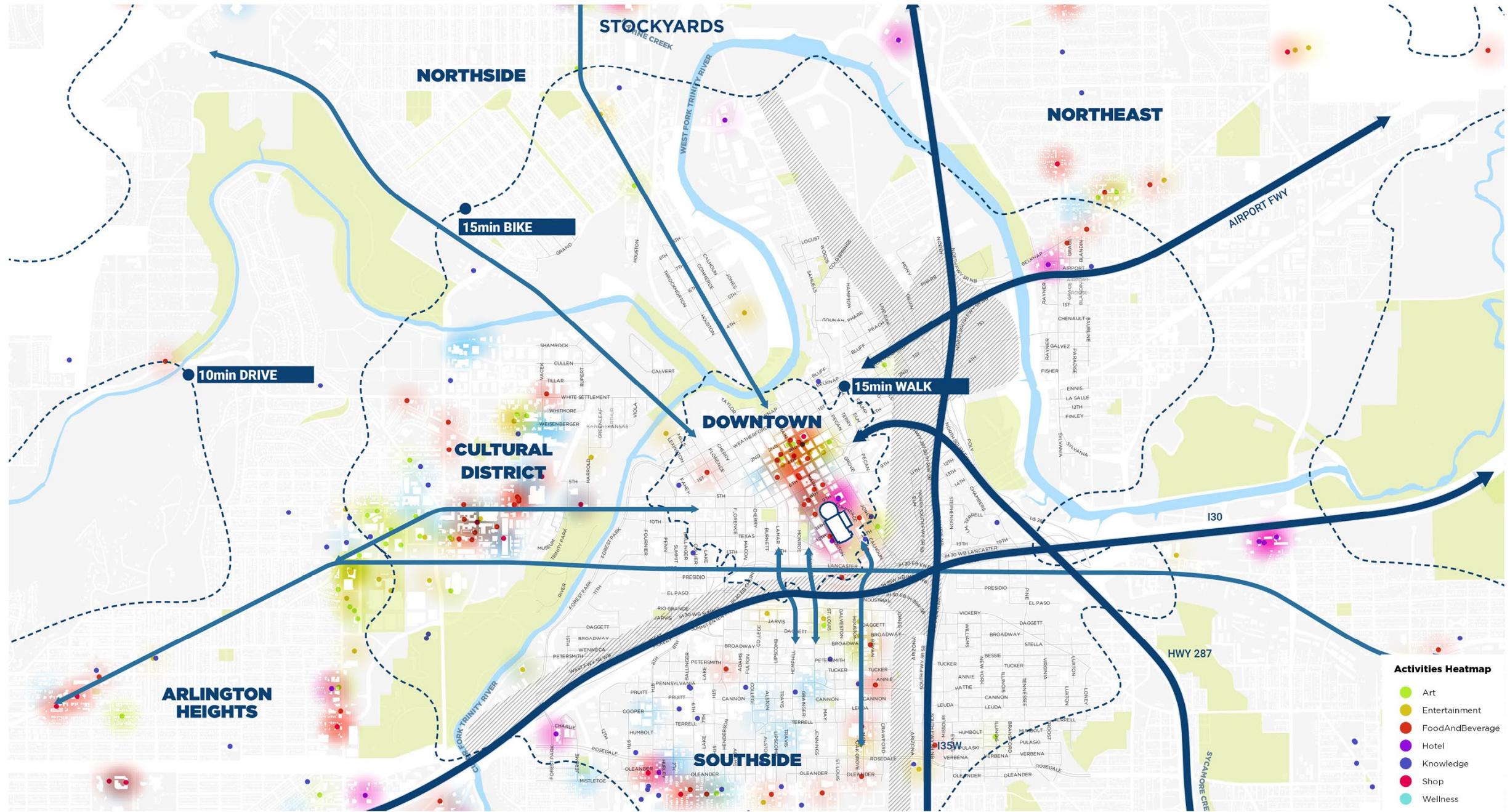
Tool Development



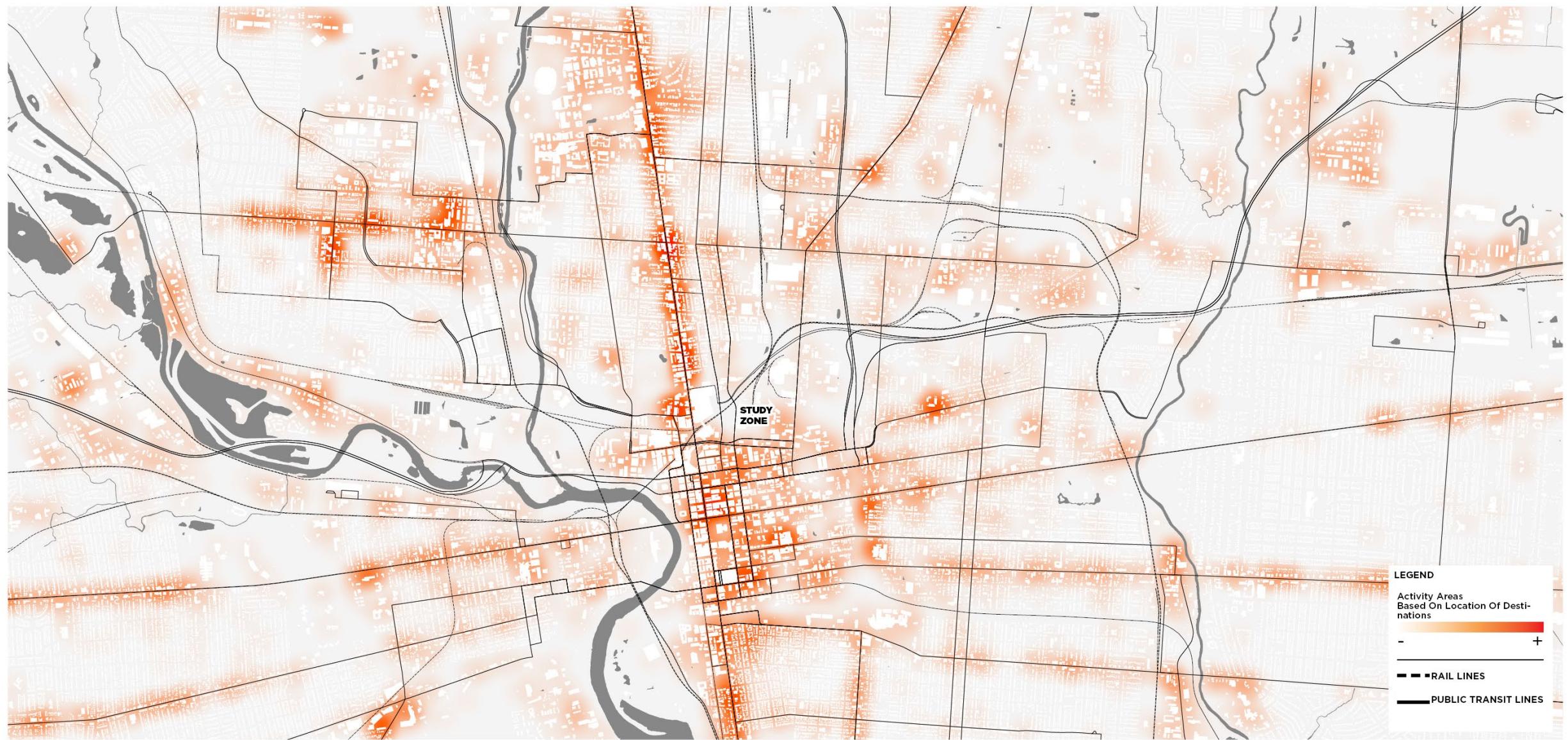








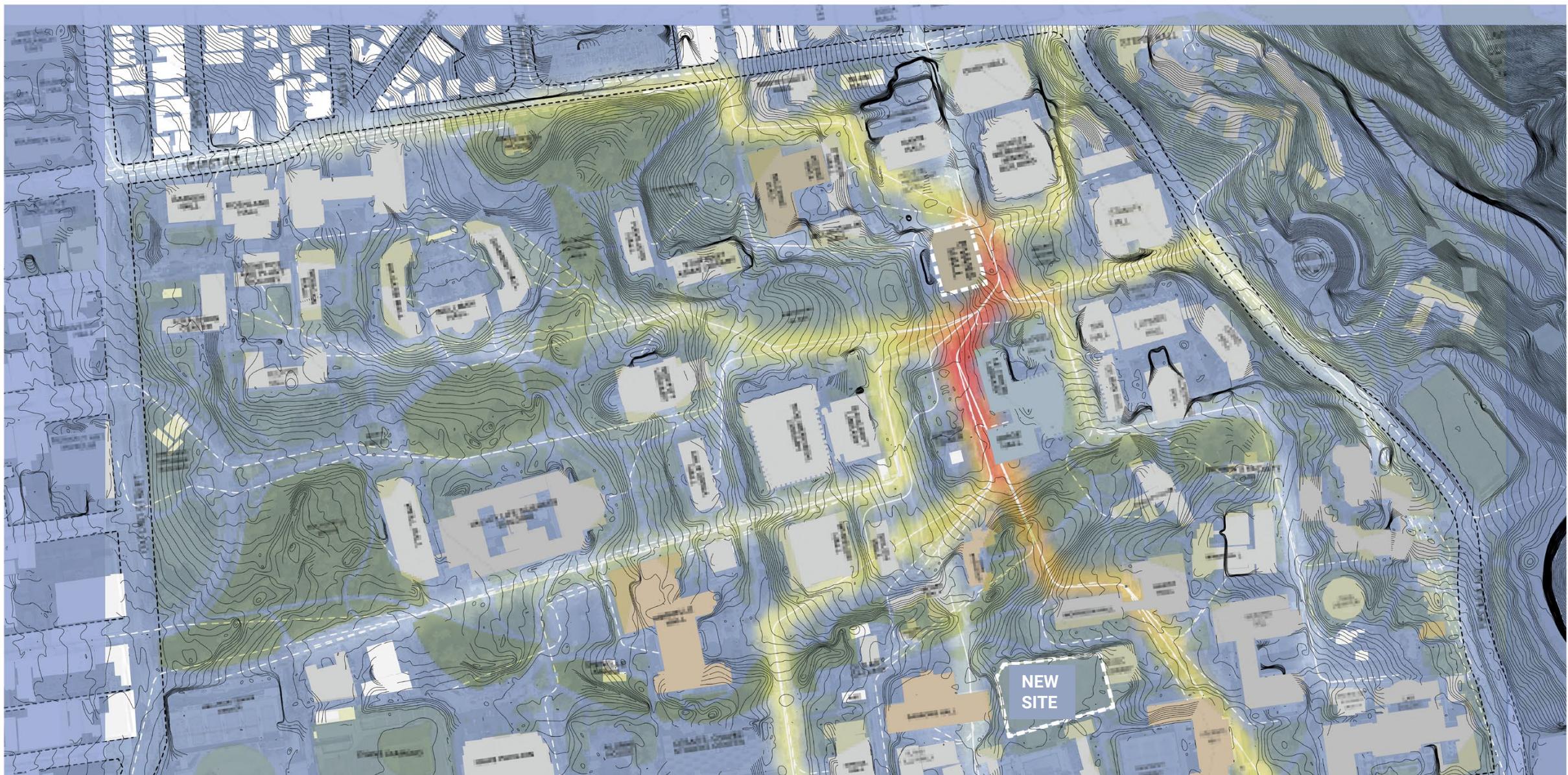
Activity Map



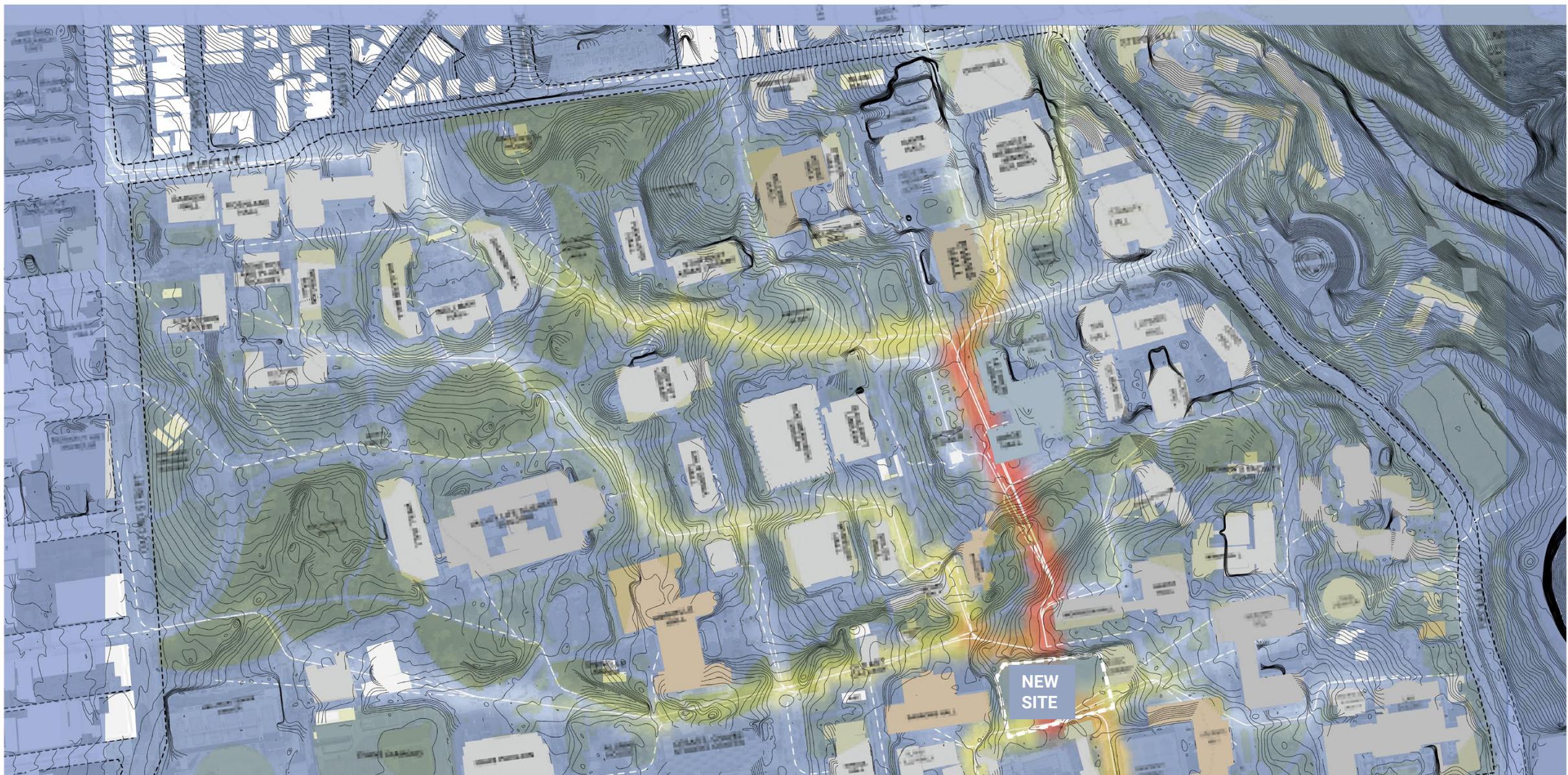
Walking Activity Flows with Strava Input



Predicting Walking Flows with Mapping API



Predicting Walking Flows with Mapping API



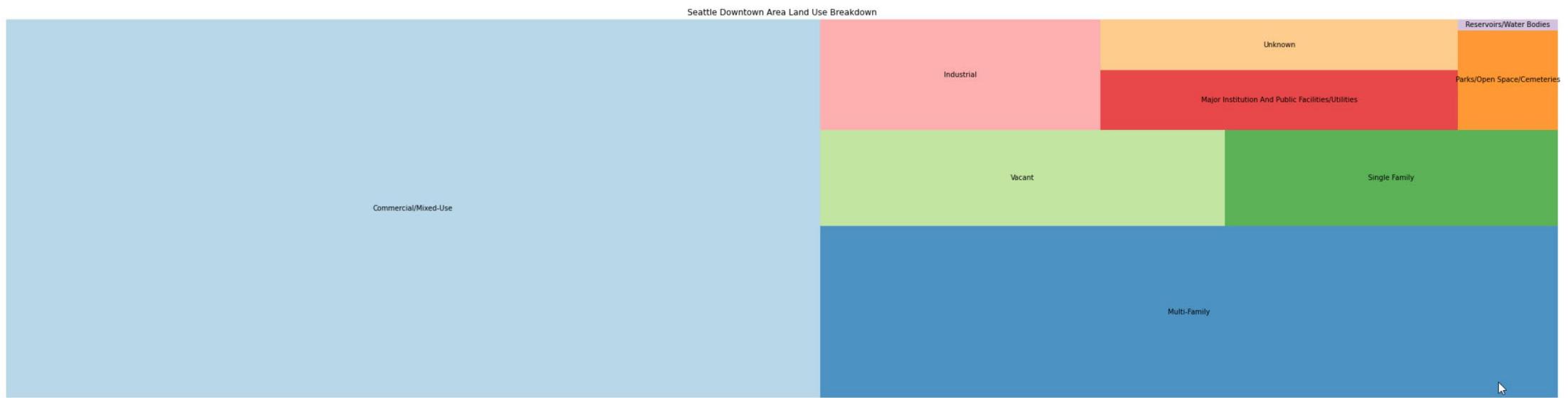


SELF-CATEGORIZATION

FINDING ALTERNATIVE SPATIAL ASSOCIATIONS



Land Distribution in Seattle Downtown

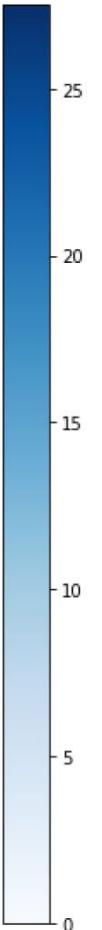


FAR Availability in Seattle Downtown

Seattle Downtown Area Available FAR /2016 Data

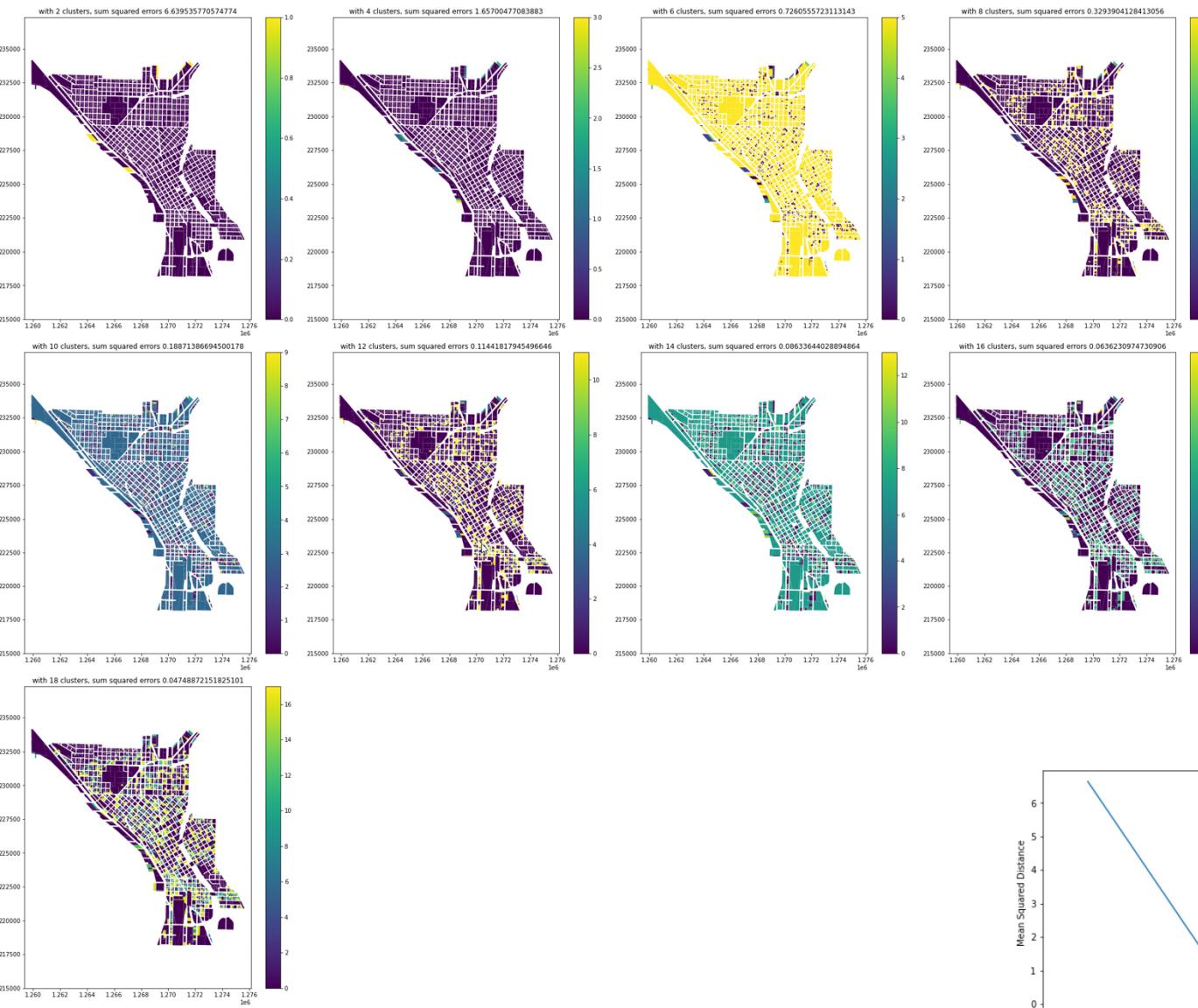


Seattle Downtown Area with Max of 27.5 FAR /2016 Data



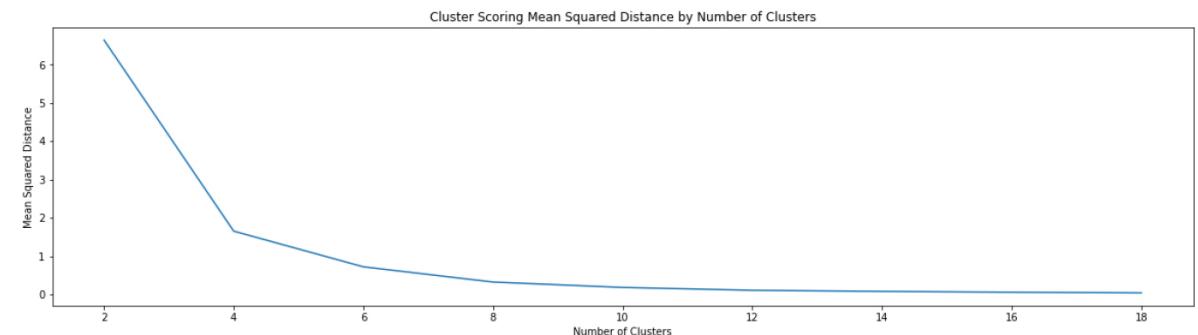


K-Means Clustering: Parcels in Seattle Downtown



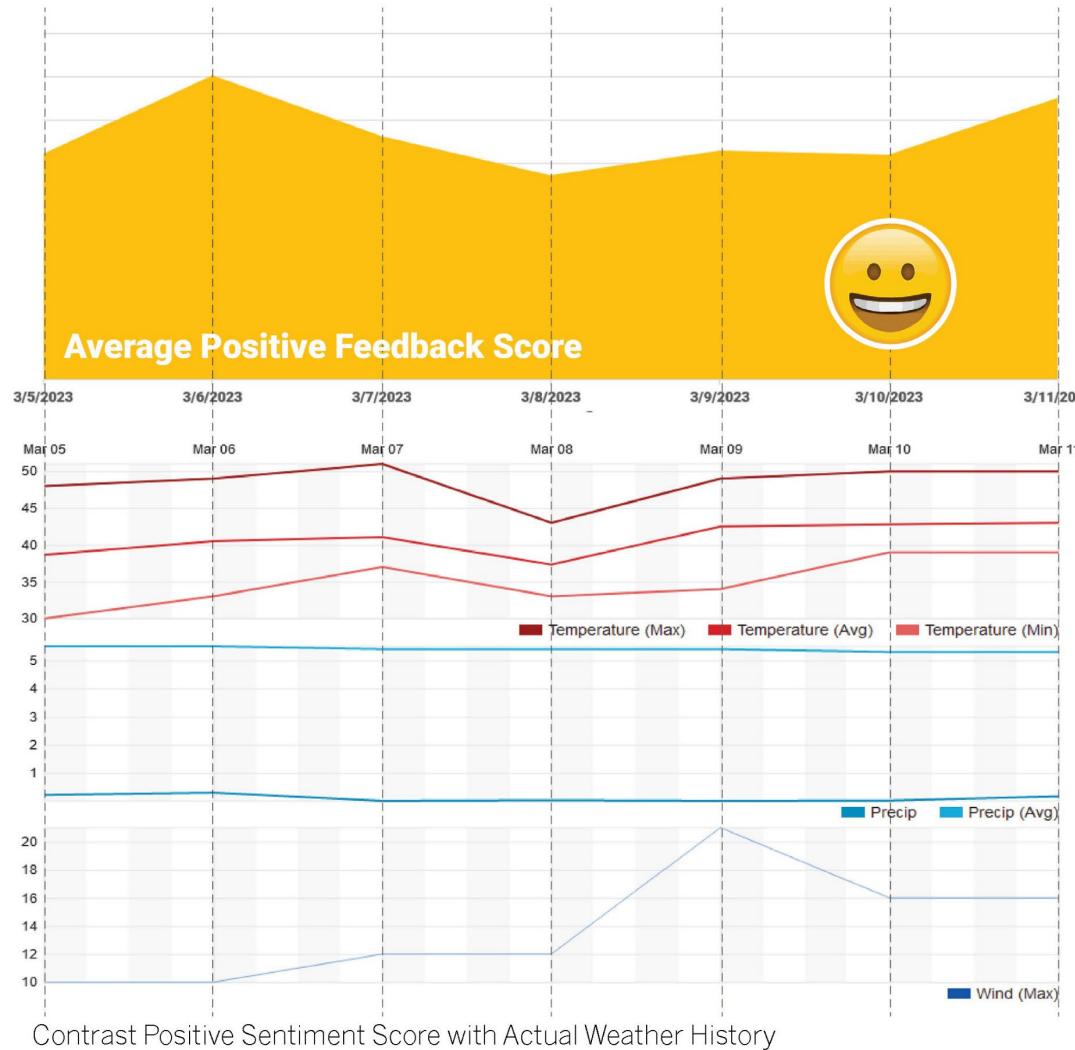
```
cluster_data2 = sea_geo_parcels[['AVAIL_FAR', 'LAND_USE_C', 'RES_FAR', 'COMM_FAR', 'LAND_SQFT']]  
cluster_data2.head()
```

	AVAIL_FAR	LAND_USE_C	RES_FAR	COMM_FAR	LAND_SQFT
0	14.0	309	14.00	7.0	6330
1	1.4	157	4.50	3.5	137081
2	7.7	106	14.00	7.0	6351
3	14.0	106	14.00	7.0	14707
4	4.2	16	4.25	2.5	6960





City Perspectives: Generating Data: Sentiment Analysis. *What's the mood?*



Tweet Query: '#Seattle' & 'Weather'

User	Tweet	All_Senti
28 SeeSeattleWX	37F in #Seattle w broken clouds &a	0.547
29 SeeSeattleWX	37F in #Seattle w broken clouds &a	0.547
30 SeeSeattleWX	37F in #Seattle w overcast clouds	0.54
31 SeeSeattleWX	37F in #Seattle w light rain & a	0.546
32 SeeSeattleWX	37F in #Seattle w moderate rain &a	0.54
33 SeeSeattleWX	38F in #Seattle w overcast clouds	0.541
34 SeeSeattleWX	38F in #Seattle w overcast clouds	0.54
35 SeeSeattleWX	38F in #Seattle w light rain & a	0.546
	â€œfi, for most and â€œi, for some.	
36 DougIWeatherGuy	#pocatello #idahofalls #boise #Sal	0.572
37 SeeSeattleWX	39F in #Seattle w moderate rain &a	0.539
38 bmpeak	Thanks for the sun today, #Seattle Hereâ€™s a weather pic for you @le	0.988
39 purplepilot2	Partly Cloudy in #Seattle tomorrow	0.61
40 SeeSeattleWX	40F in #Seattle w moderate rain &a	0.545
41 SeeSeattleWX	42F in #Seattle w moderate rain &a	0.538
42 SeeSeattleWX	43F in #Seattle w moderate rain &a	0.538
43 sigmas	Tonight's dramatic #Seattle skies	0.992
44 CoffeeParrot	#Seattle #WestSeattle #PugetSound	0.536
45 SeeSeattleWX	44F in #Seattle w light rain & a	0.544
46 SeeSeattleWX	46F in #Seattle w scattered clouds	0.534
47 SeeSeattleWX	47F in #Seattle w scattered clouds	0.535
48 SeeSeattleWX	47F in #Seattle w broken clouds &a	0.543

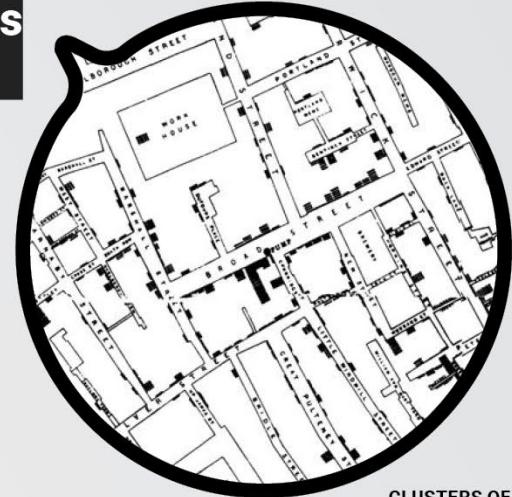
Data Excerpt from Scrapped Tweets on March 6th



x3 takeaways!

x3 Takeaways!

Responsibility: Support Assumptions with Analysis



CLUSTERS OF CHOLERA CASES

JOHN SNOW, 1854

x3 Takeaways!

Associated Responsibility

The Way to Communicate





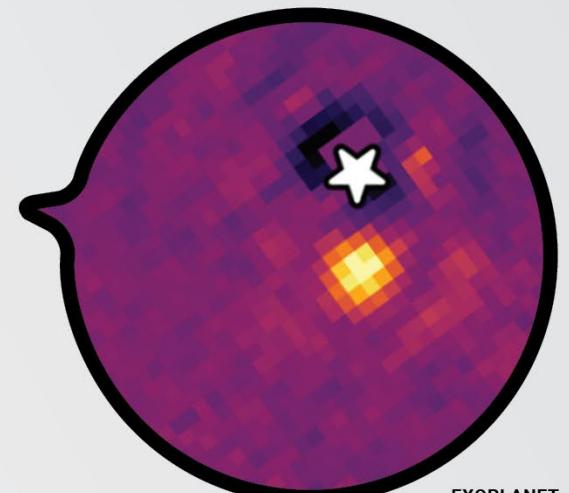
x3 Takeaways!

Associated Responsibility

The Way to Communicate

Treat the World like an Exoplanet

Detach ourselves from prejudgments about the place we search



EXOPLANET
JWST, 2022



x3 Takeaways!

Associated Responsibility

The Way to Communicate

Treat the World like an Exoplanet