

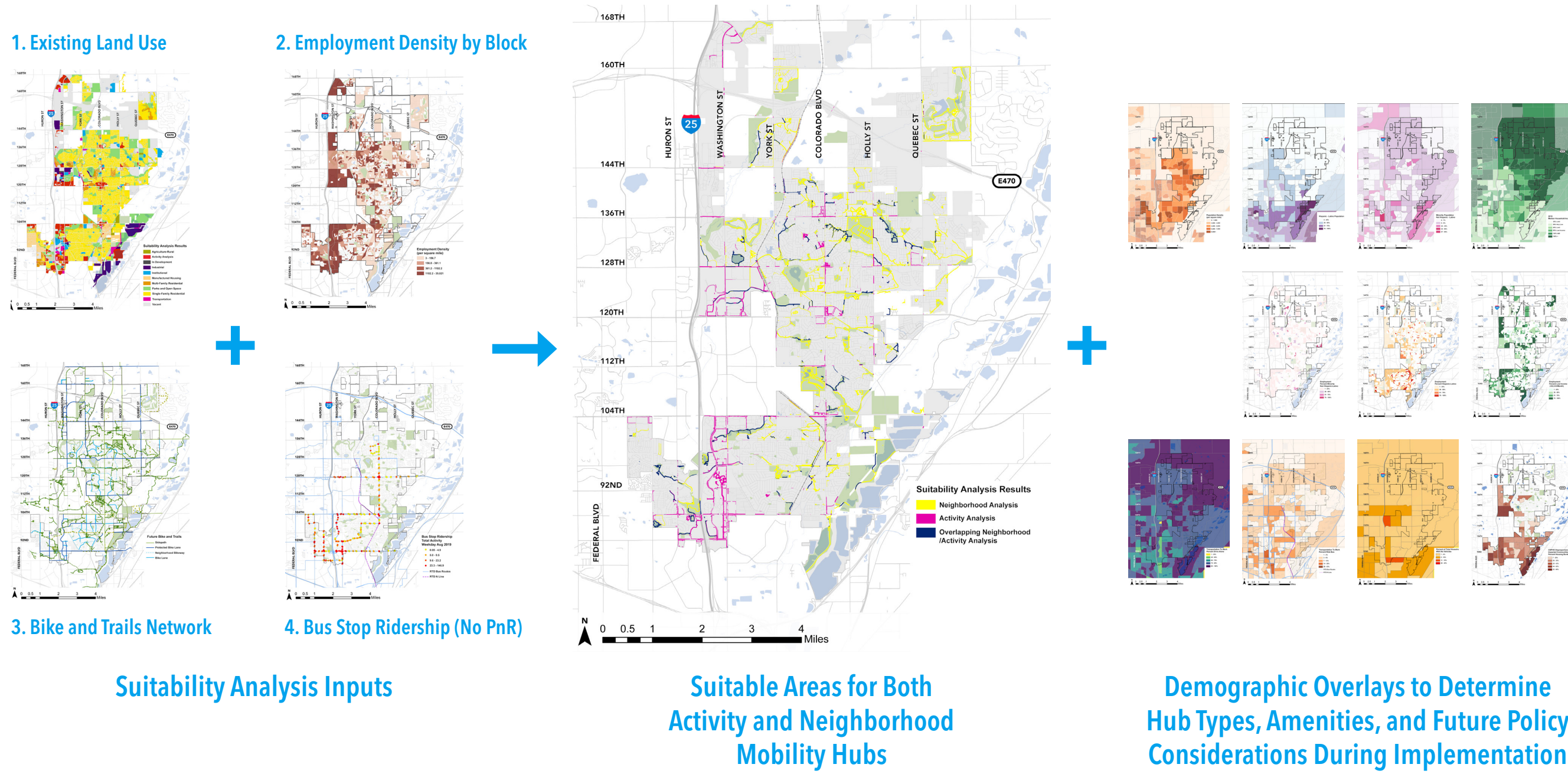
# Future Mobility Solutions in Thornton, Colorado

## Identifying Locations for Neighborhood Micromobility Hubs

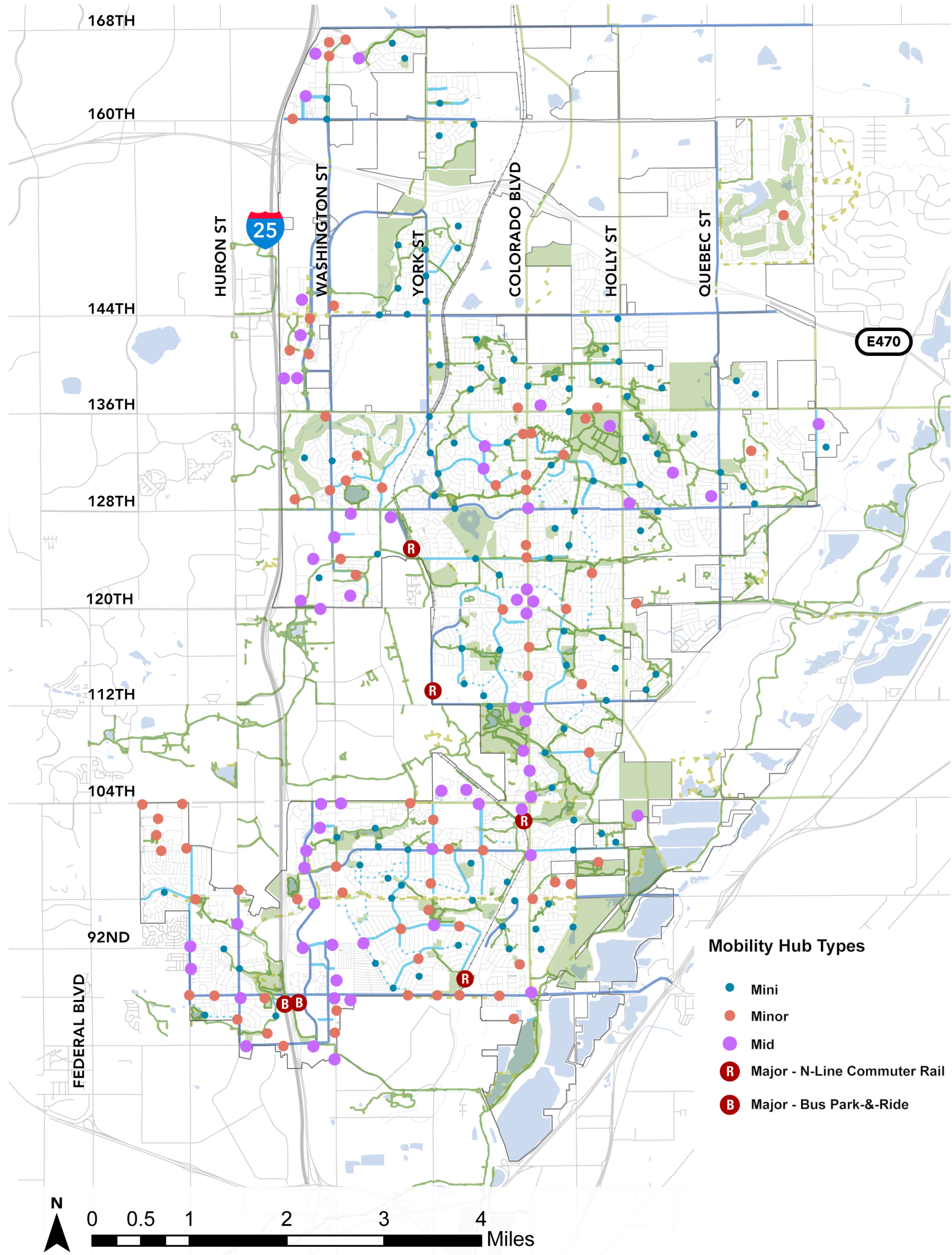
**Issue:** Due to development patterns and priority of car-oriented development in the last 80 years, the City of Thornton, a northern post-war suburb of Denver has 80% of residents 16 and older driving to work alone. In 2019, 50%, (14,747) of people employed in Thornton lived less than 10 miles from work while 33% (9,566) lived 10 to 24 miles away. In that same year, of the residents that both worked in and outside of Thornton, 44% (30,493) worked less than 10 miles from home, while 46% (31,569) worked 10-24 miles from home. As new modes of active and shared devices and services become more popular, trips under 10 miles can easily be made by non-car modes. The main questions answered by this capstone for future mobility planning in Thornton are:

1. Where can neighborhood mobility hubs providing access to shared micromobility and car share be located to begin changing behavior away from single occupancy vehicle trips for work and non-work trips?
2. What are the hub typologies and amenities, and how do they differ depending on location?

**Analysis and Result:** A combined suitability analysis and qualitative analysis identified 252 mobility hubs throughout the City of Thornton. These hubs vary in size and types of amenities depending on the surrounding characteristics ranging from denser employment/activity areas, to quieter neighborhoods and parks. Hubs range in size from Mini, embedded in residential neighborhoods with the basic amenities, to Minor, Mid, and Major which progressively have more devices and parking in conjunction with higher activity land use.



252 Mobility Hubs Located Throughout City of Thornton



### Hub Typology Examples

(Not All Configurations Are Shown)

#### Amenities

##### Shared Micromobility

- (A) E-Bike Share
- (B) E-Cargobike Share
- (C) E-Scooter Share

##### Personal Micromobility

- (D) Secure Personal E-Scooter Racks
- (E) Secure Personal E-Bike Racks

##### Car Share

- (F) Car Share Parking/Charging

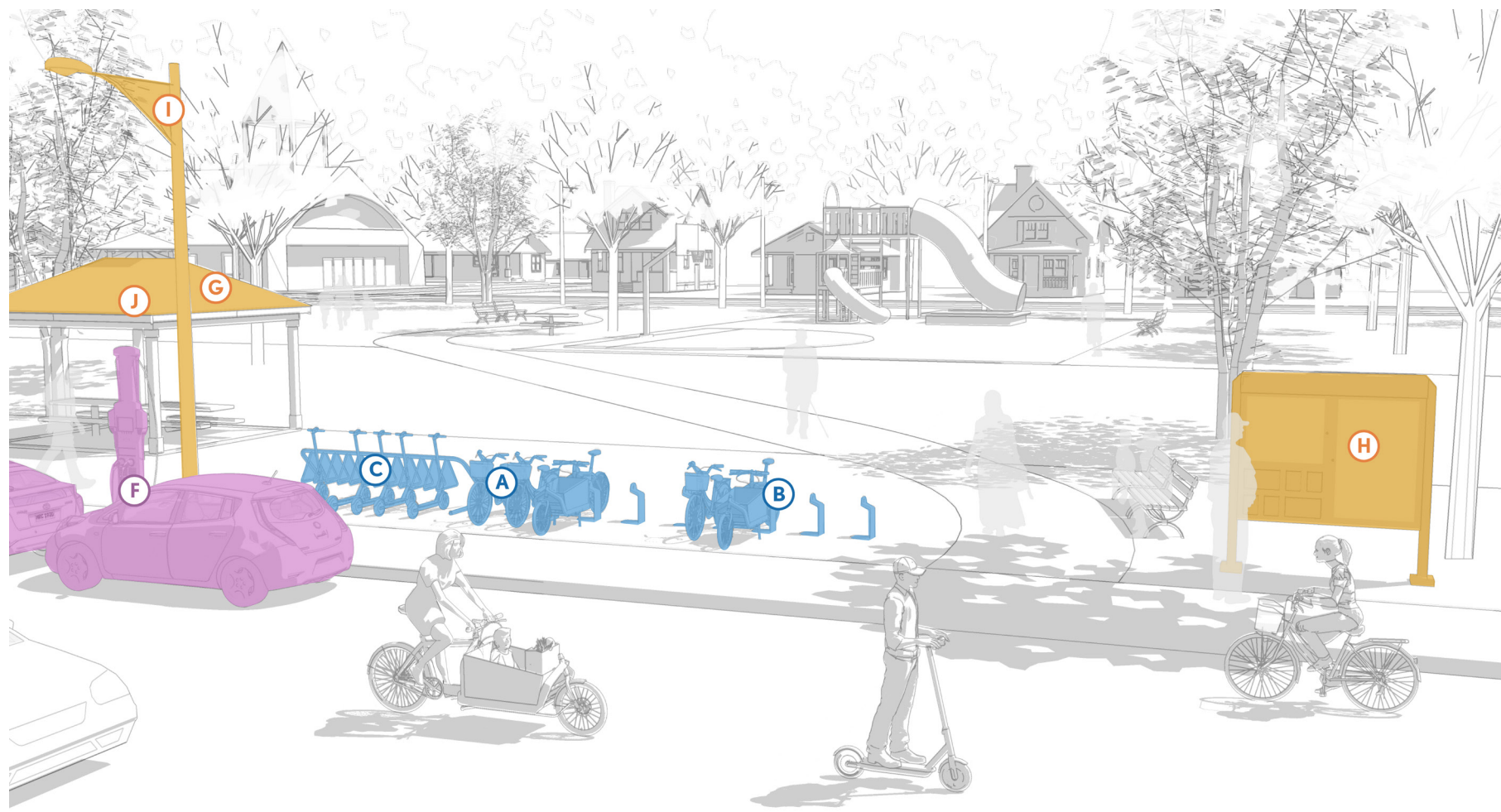
##### Placemaking Amenities

- (G) Solar Charging
- (H) Payment Kiosks/Wayfinding
- (I) Lighting
- (J) Shelter From Elements/Seating

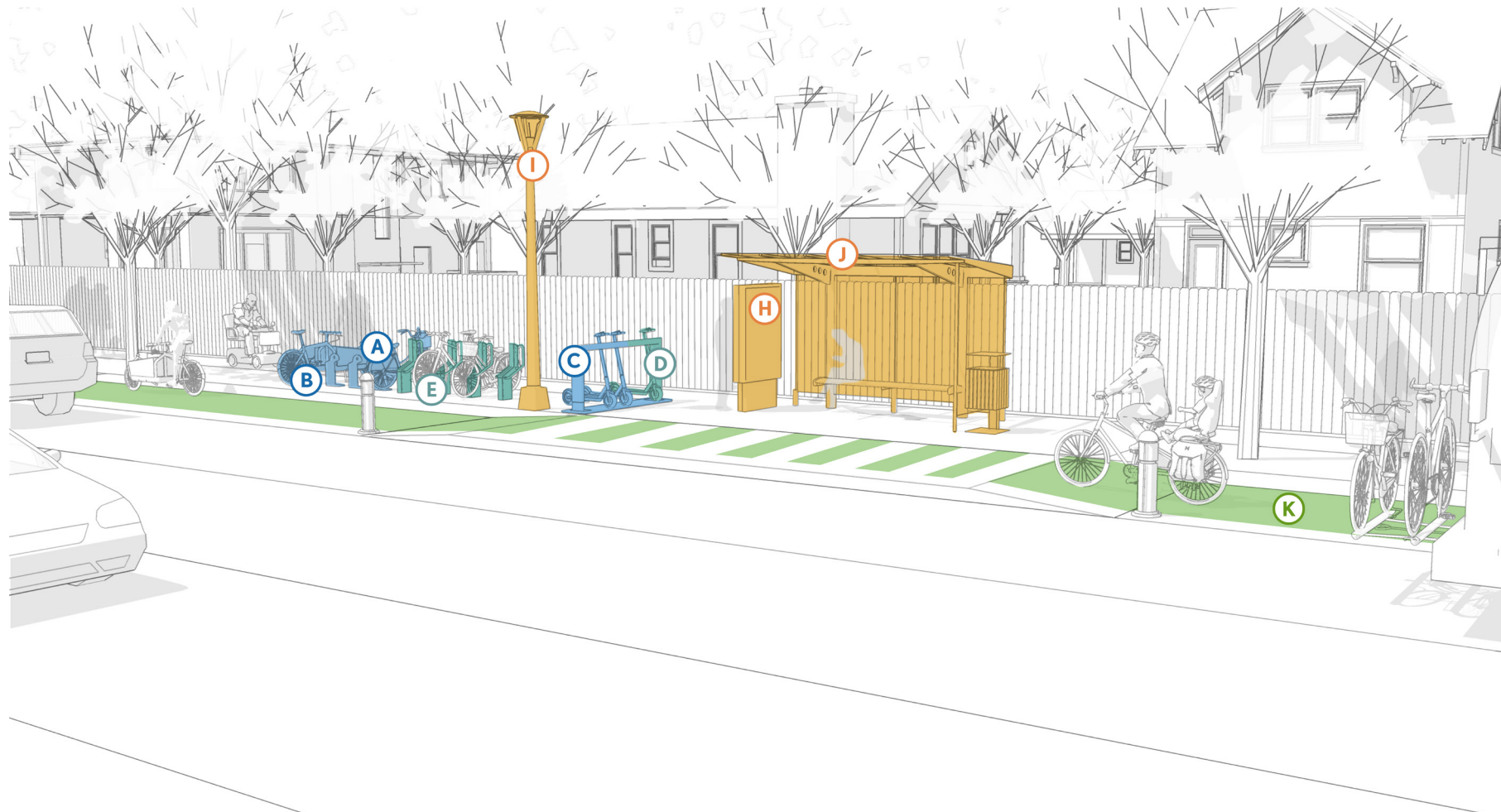
##### Low Stress Mobility Network

- (K) Protected Lanes

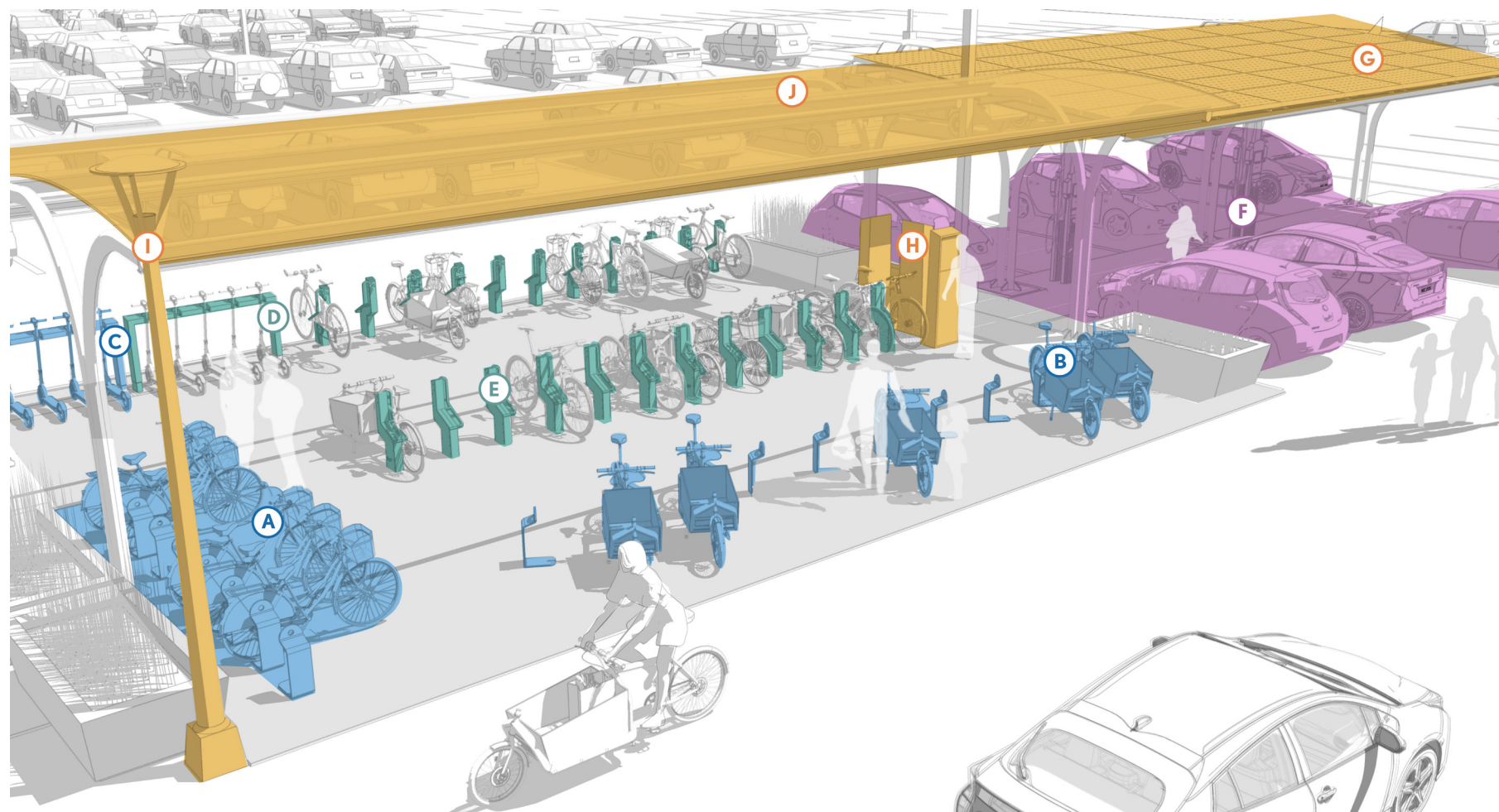
#### • Mini- Neighborhood Park



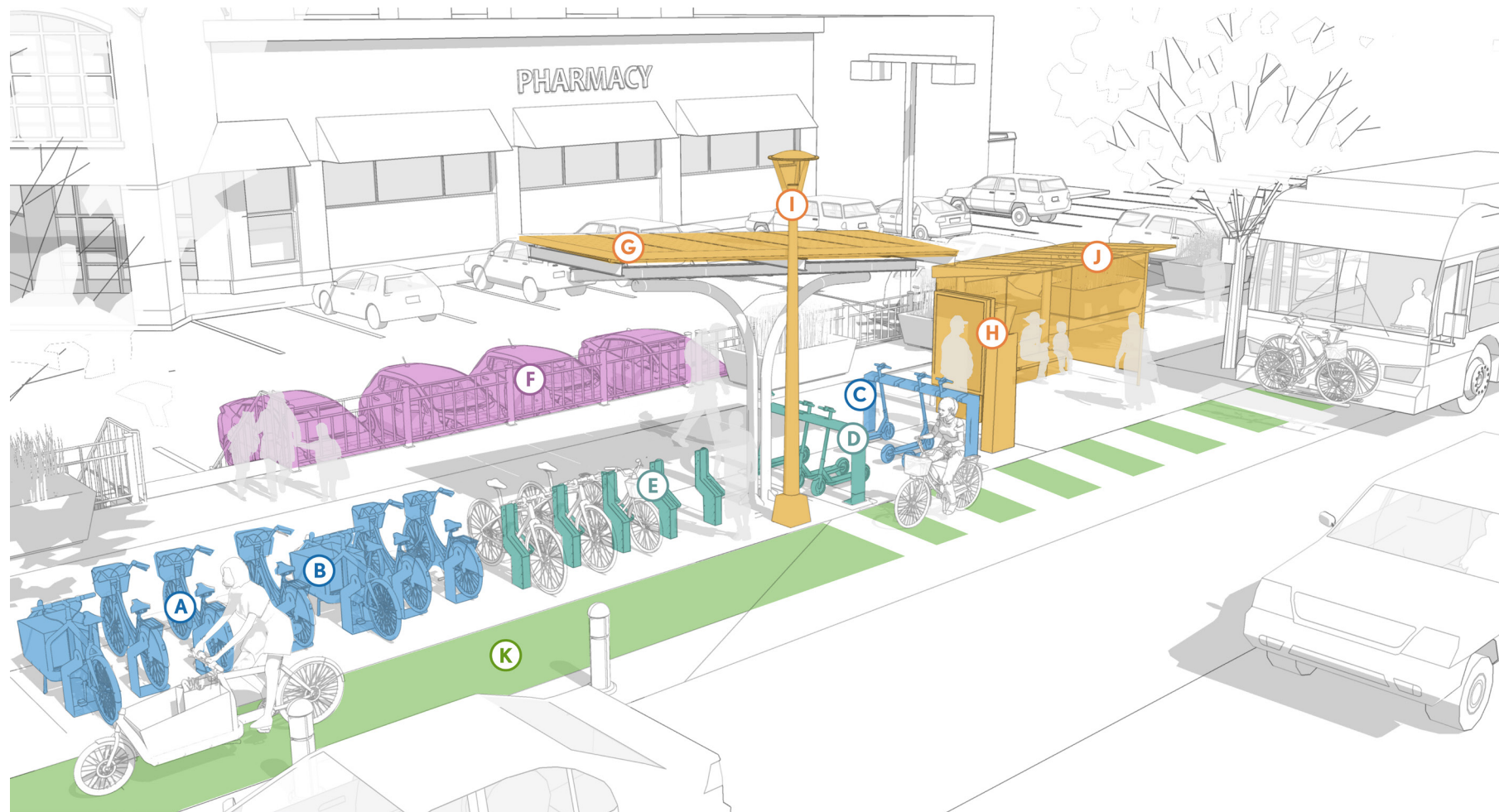
#### • Minor- Bus Stop



#### • Mid-Shopping Plaza



#### • Mid-Bus Stop



### Hub Typology Definitions

Amenities	Mini Neighborhood Hub Near/at low-ridership bus stops, residential with no/low employment.	Minor Activity Hub Near/at low-ridership bus stops, Comm/Institutional with low employment density, Larger Park Complexes.	Mid-Size Activity Hub High ridership bus stops, Comm/Inst with higher employment density.	Major Activity Hub Park-&-Ride Bus/Commuter Rail Stations.
Hybrid Dock-Electric Bike Share	Trailheads/parks with few amenities	Yes, balanced with Kiosk dock within 0.5 miles	Yes, balanced with Kiosk dock within 0.5 miles	No
Geofenced Painted Parking With Lock-to Rack	Parks with more amenities, Multi-family, Institutional	Primarily in areas with lower income, evenly distributed throughout city, and at most schools.	Not at all, depends on proximity to other mids	Yes
Lock-to Rack with Kiosk Accommodates both floating and docking devices (ex. BIKETOWN, Portland)	Parks with more amenities, Multi-family, Institutional, places with car share	Yes, Bikeep racks	Yes, Bikeep racks	Yes, large pod/cage
Secure Bike Parking (ex. Bikeep, Oonee)				
Car Share				
Electric Car Share- Round Trip	Could have 1-2 spots	1-4 spots at comm, inst, Multi-family	3-6 spots at comm, inst	5-10 spots
Electric Car Share- One-Way	Could have 1-2 spots	1-4 spots at comm, inst, Multi-family	3-6 spots at comm, inst	5-10 spots

252 Total Hubs

111

75

61

5



Master of Urban and Regional Planning  
COLLEGE OF ARCHITECTURE AND PLANNING  
UNIVERSITY OF COLORADO DENVER

Prepared For  
The City of Thornton, Colorado

By Dan Olken  
Master of Urban and Regional Planning