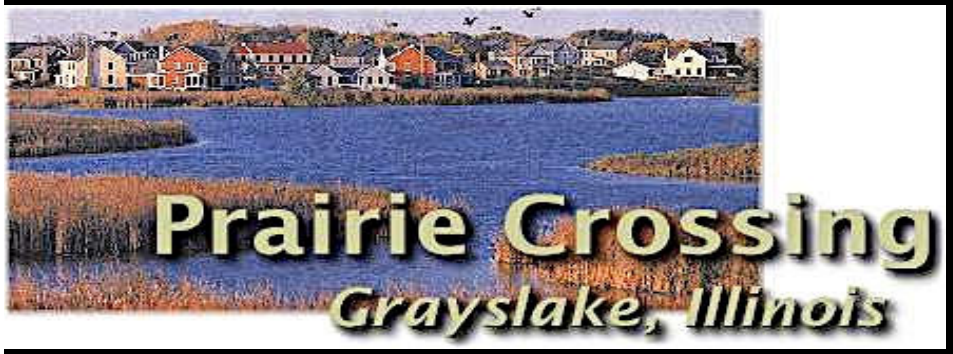
The city as living system

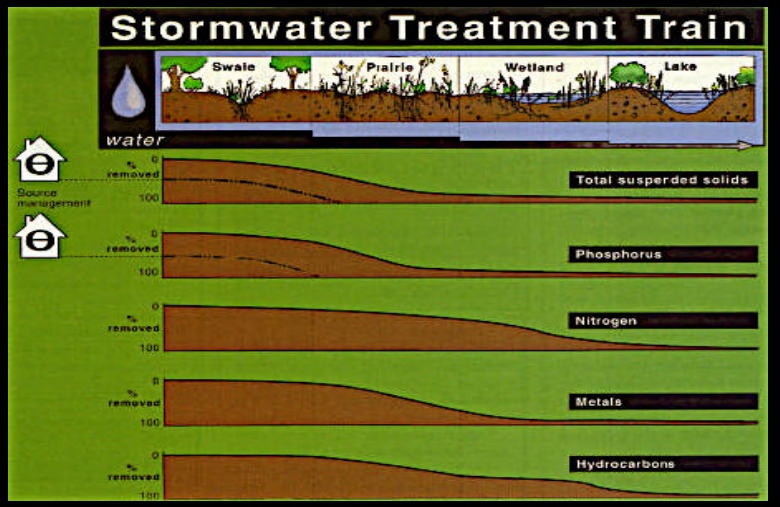
Landscapes and cities are living systems. What would the city look like if its form were also manifestation of such processes?

Hydrologic city.

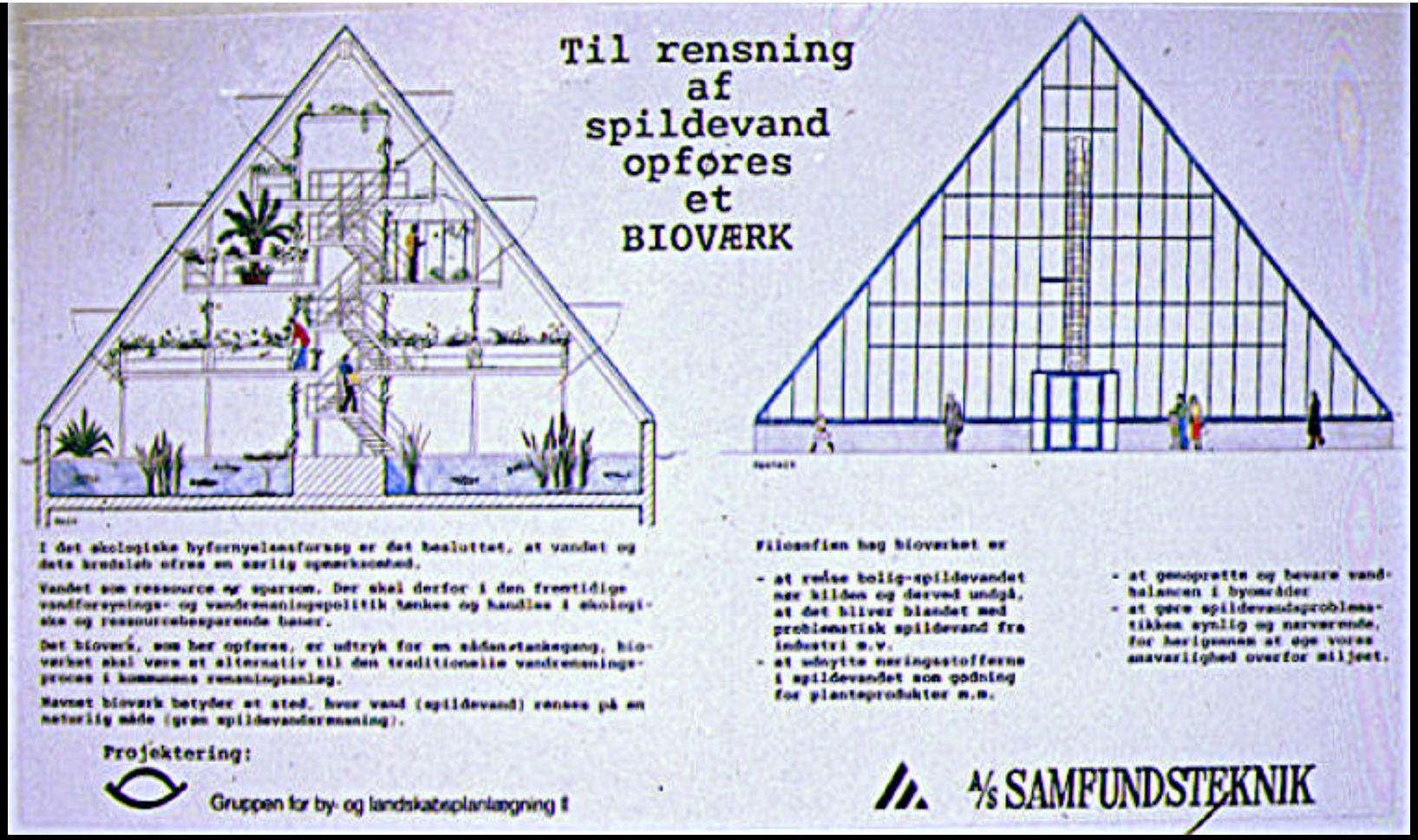
The usual underground network carries up to 90% of urban rainfall. A naturalized hydrologic system would be cheaper and more aesthetically pleasant.



Environmentally sensitive stormwater management in Prairie Crossing, a 667-acre residential development in Grayslake, Illinois. A restored landscape is integrated into the development as a stormwater management system.



It can be expected to reduce surface runoff volumes by 65% and reduce solids, nutrients and heavy metals loads by 85% to 100%.



The Pyramid is situated in the Hollændervej/Fredensgade block in Kolding. All sewage in the block is collected, pre-treated in a small underground mechanical-biological sewage treatment plant, sterilised in an uv-ozone filter, pumped to the Pyramid, where the sewage are further cleaned by algae and plants. The total surface of the tanks is 840 m2 and the total tank volume is 460 m3. From the Pyramid, the sewage is 'polished' in a reed-bed and infiltrated in the ground. In principle, no wastewater leaves the block. The Pyramid was operational in 1994

Productive city

In China 50% of vegetable consumed in cities are locally grown

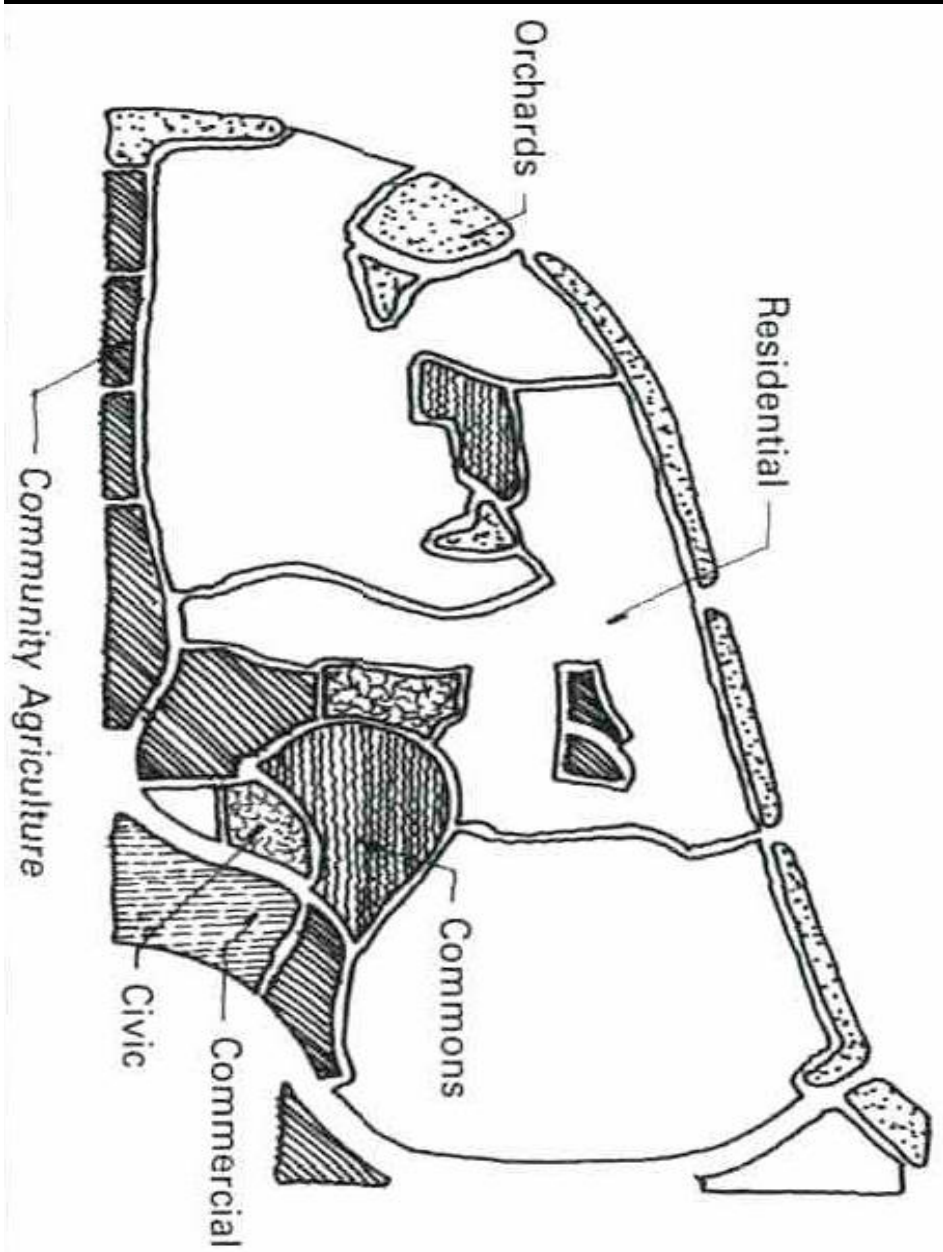
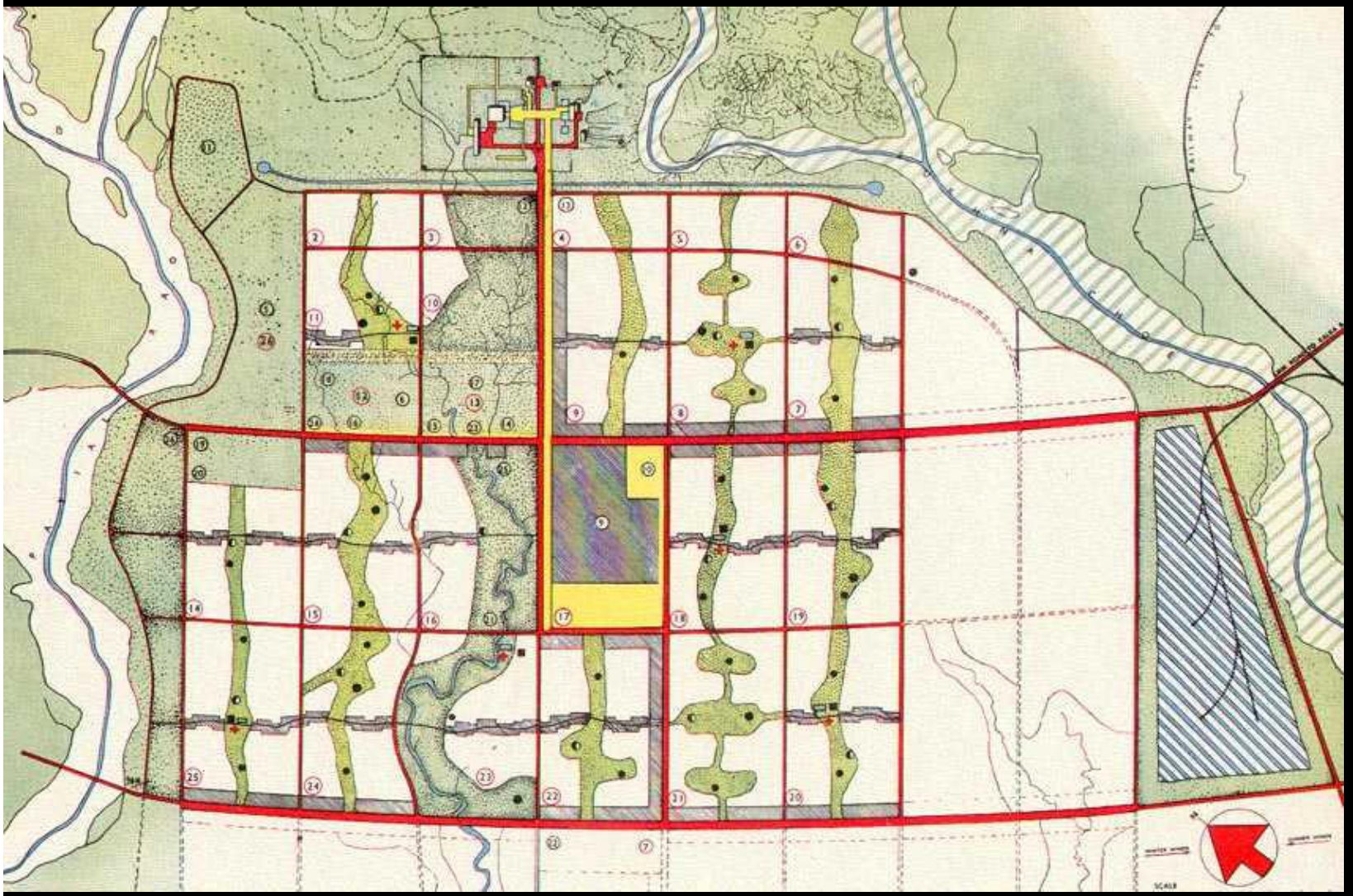
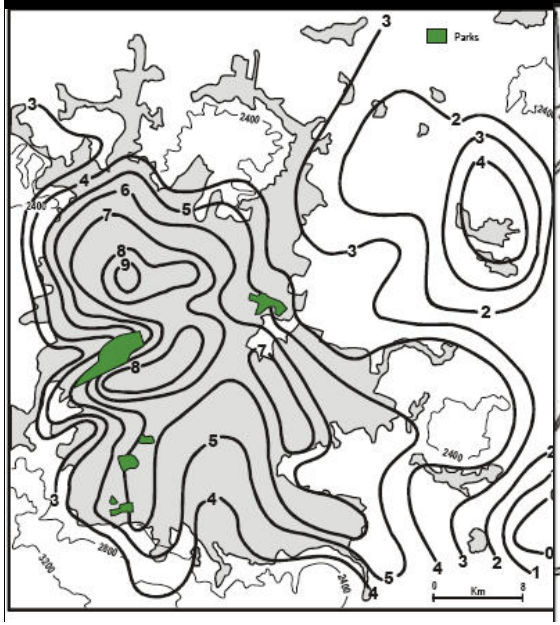


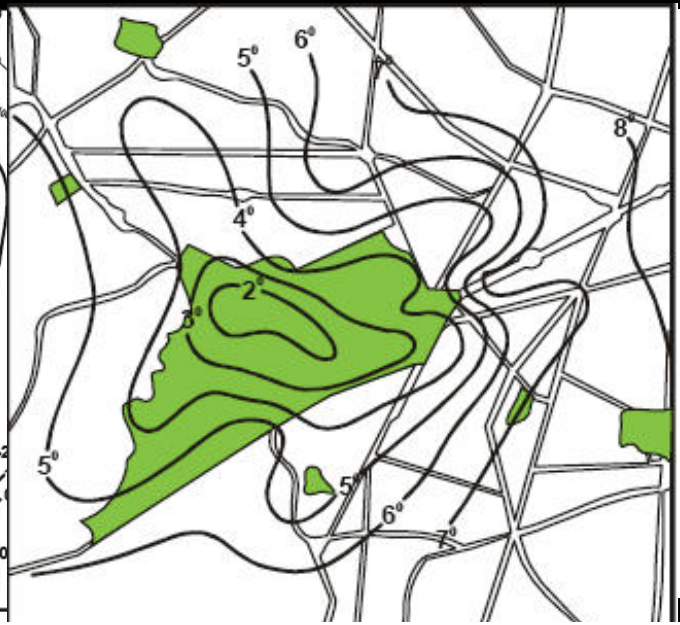
Figure 11.11b In the community of "Village Homes" in Davis, CA, most streets run east-west for winter solar access and summer shading. (From



The urban landscape influences the wind pattern and regional wind speed is usually reduced by the city. Trees and buildings usually reduce the effect of the wind but may also create local areas with higher wind speeds and swirl circulations.

The urban wind pattern also includes weak airflows which are induced by temperature differences in the city. Two examples of this micro-advection are country breeze from rural areas towards the city centre, and park breeze which is an outflow of cool air from parks.





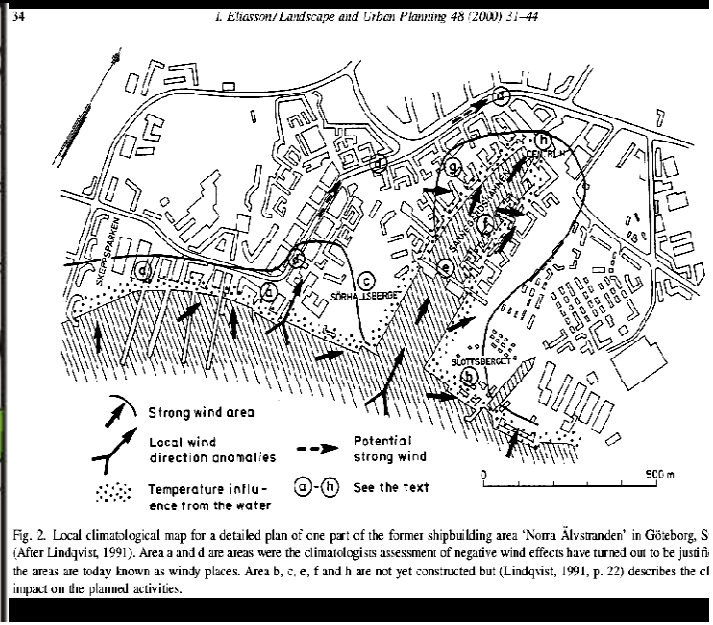
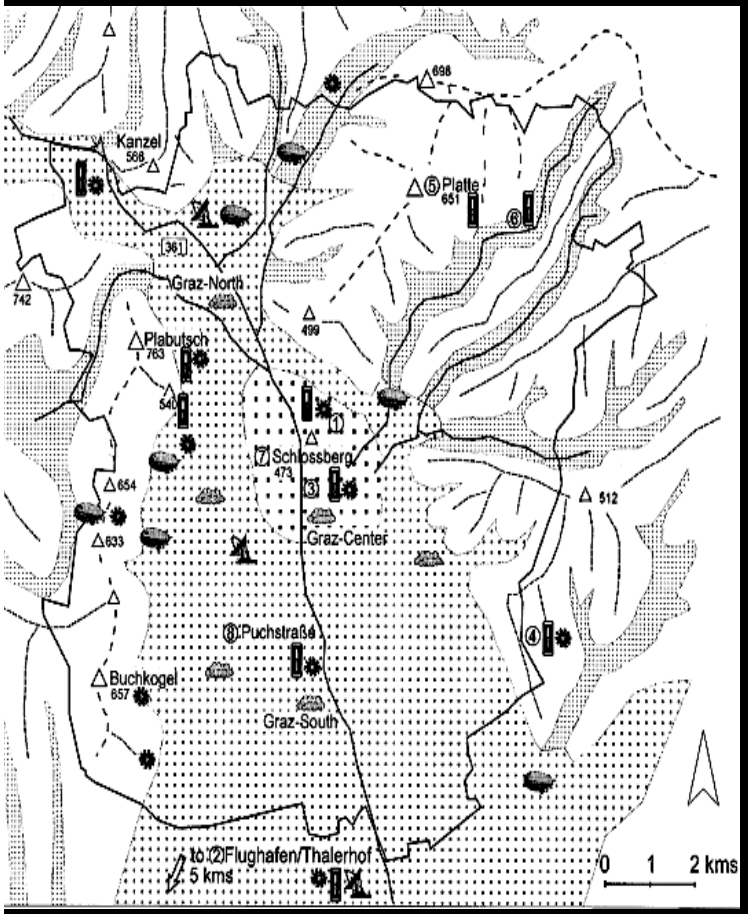
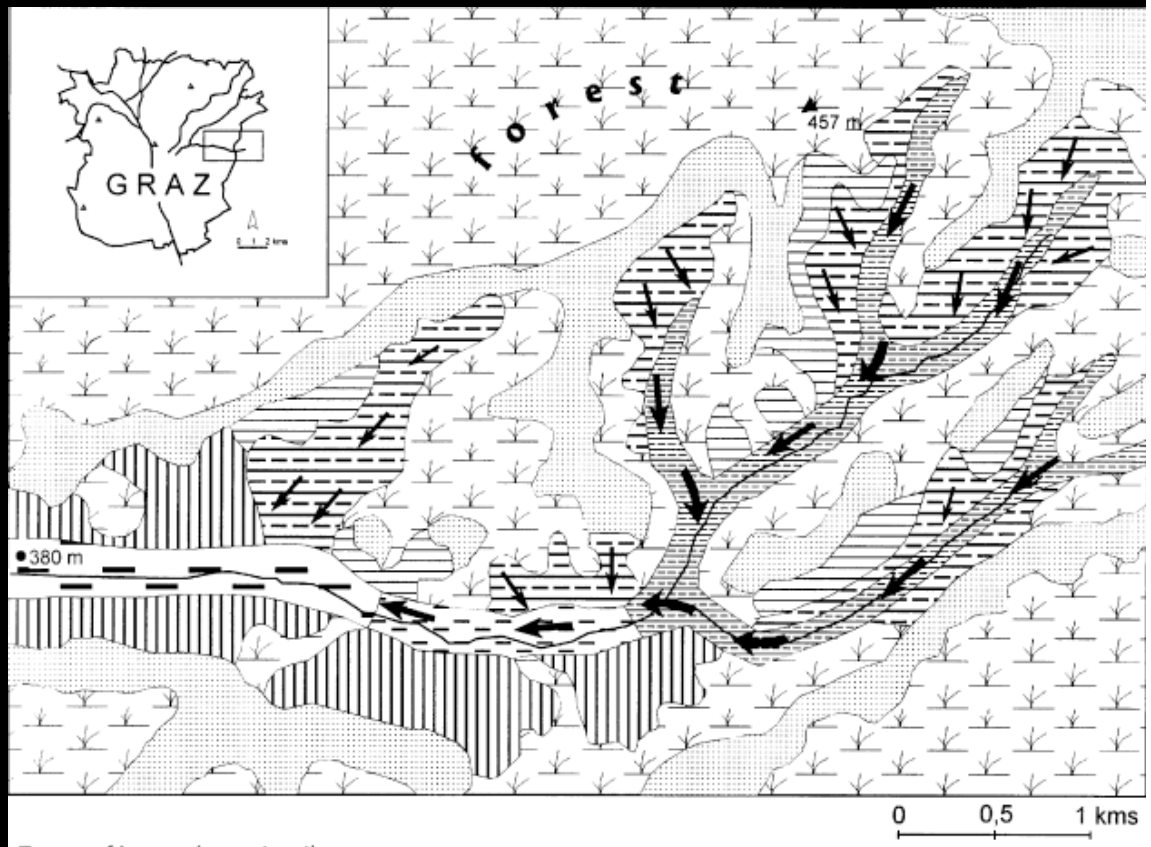


Fig. 2. Local climatological map for a detailed plan of one part of the former shipbuilding area 'Norra Älvstranden' in Göteborg, S (After Lindqvist, 1991). Area a and d are areas were the climatologists assessment of negative wind effects have turned out to be justifi the areas are today known as windy places. Area b, c, e, f and h are not yet constructed but (Lindqvist, 1991, p. 22) describes the cl impact on the planned activities.

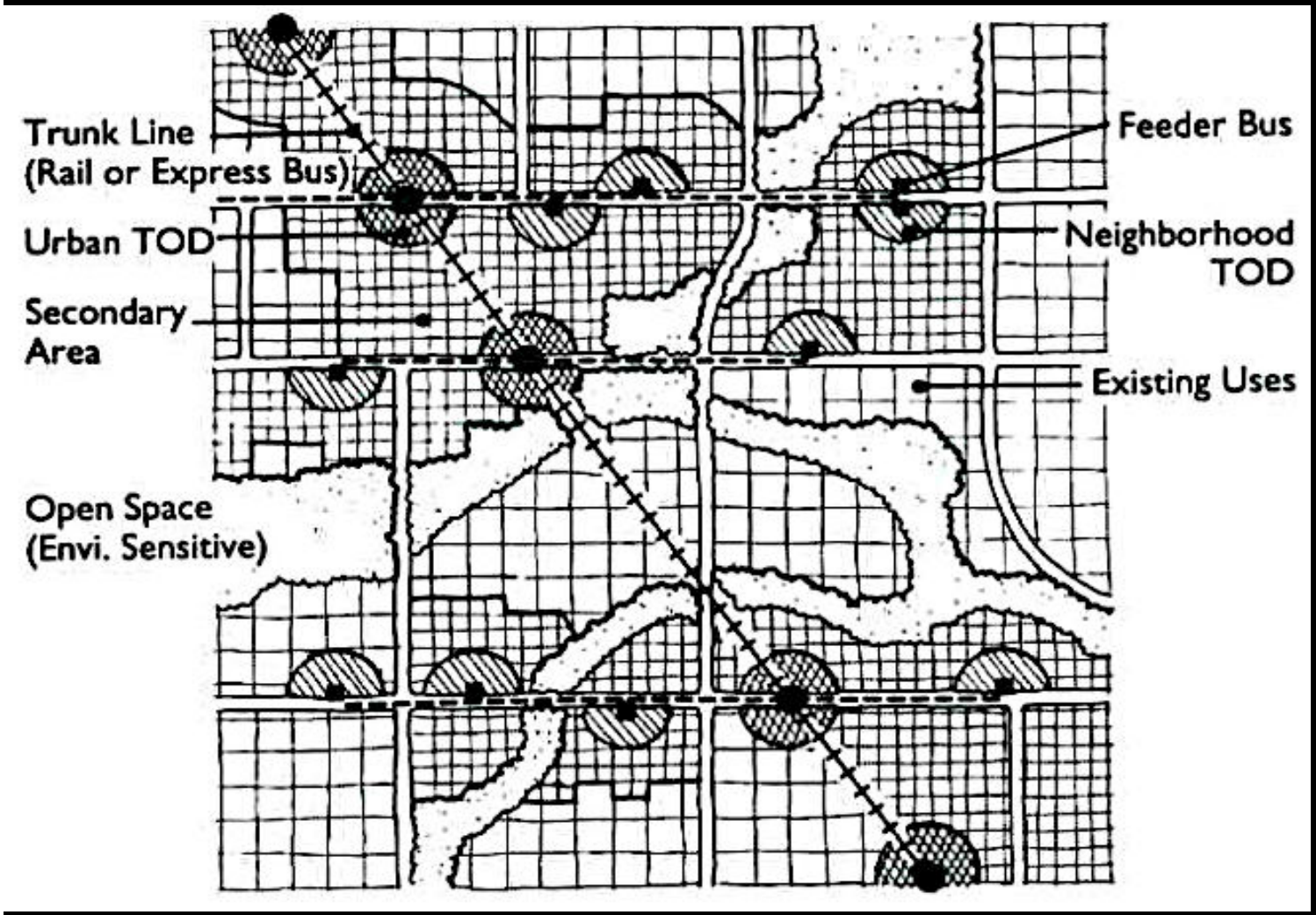




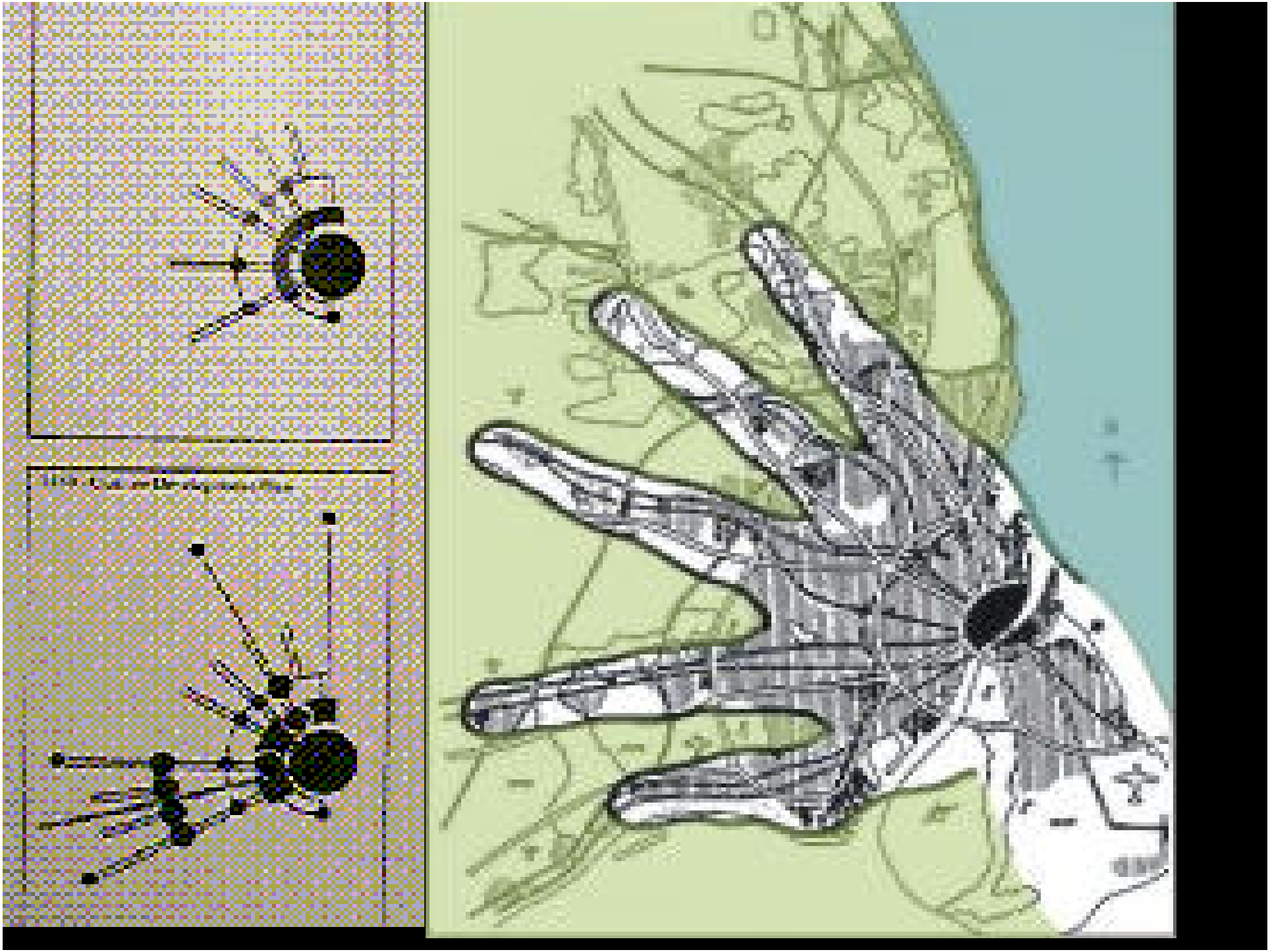
Zones of banned construction

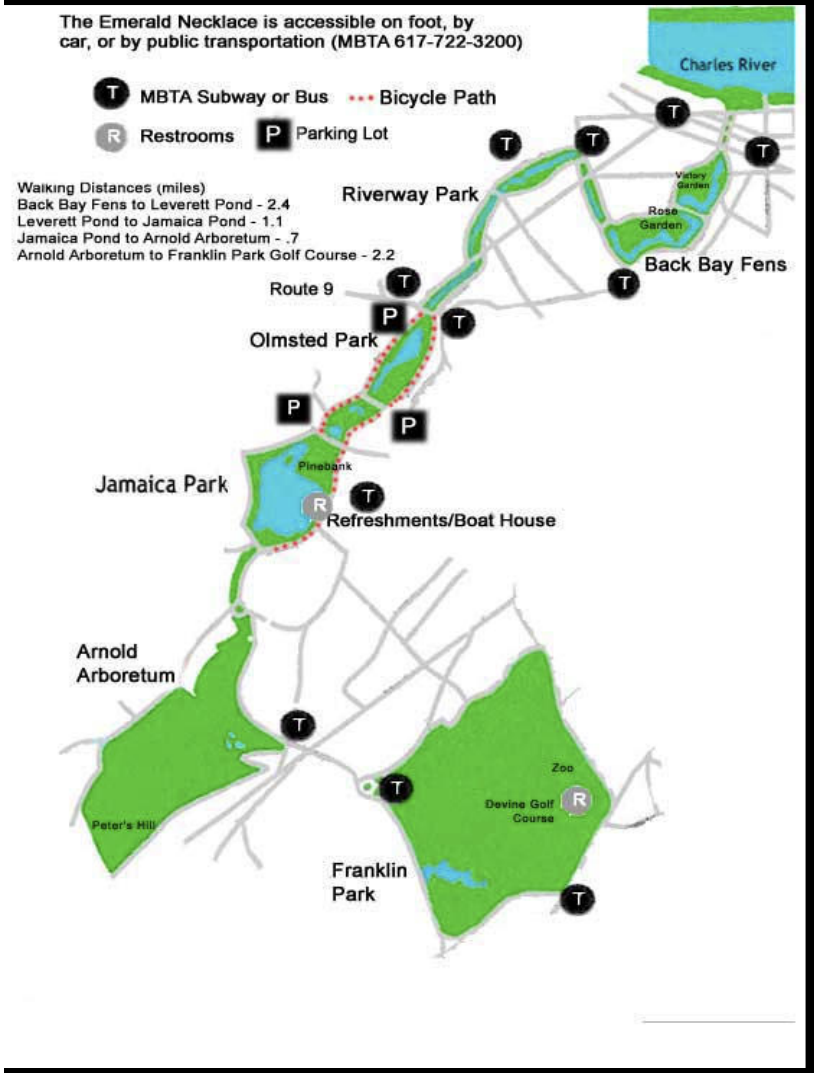
areas of cold air production with down-valley winds; sections of local climate where there is a discharge of the cold air production in the neighbouring area; a hindering of the discharge of the cold air would considerably disturb the system or even bring it to a standstill in this section

areas of cold air production with down-slope winds; all in all large connecting areas of open space (e.g. mostly damp meadows) which have an important function in maintaining the valley wind stream

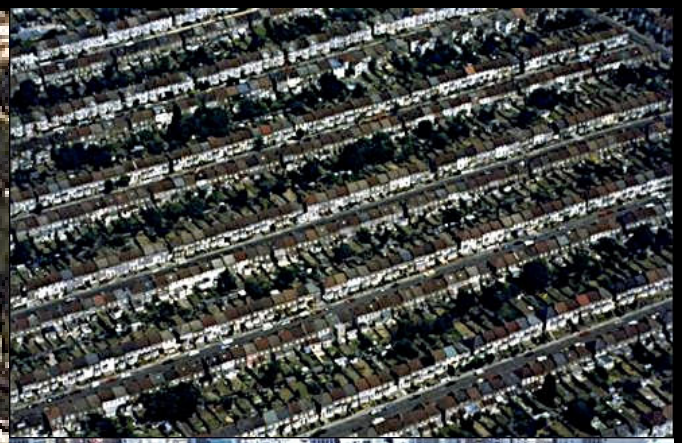


Transit Oriented Development, TOD, advocates pedestrian scale development centered on bus and light rail stops. Urban TODs are located on trunk lines, neighborhood TODs are located on arterial with feeder transit lines 10 min. away





preserved patches of critical areas,
preserved representative patches of all the ecosystems in the context,
a network of greenways



Urban morphology, the built structure and the pattern of development, determines the availability and configuration of growing space.

Both management decisions and the natural environment affect the establishment, growth, maturity, reproduction of vegetation. This effect occurs across both broad-regional and fine-site scales.

A multi-scale approach

Urban environment need to be assessed for the potential for organism movement and process spread. Landscape context is important, as the maintenance of some resources within the city may depend on what is happening outside the city.

To enhance biodiversity in the city we may want to:

1. Examine the countryside surrounding the city and secure or restore important habitats that may act as a source for the city; establish a greenbelt around the city.

2. Identify and consolidate vegetation corridors linking these areas to the city and link parks whenever possible; make use of natural streams and right of ways.

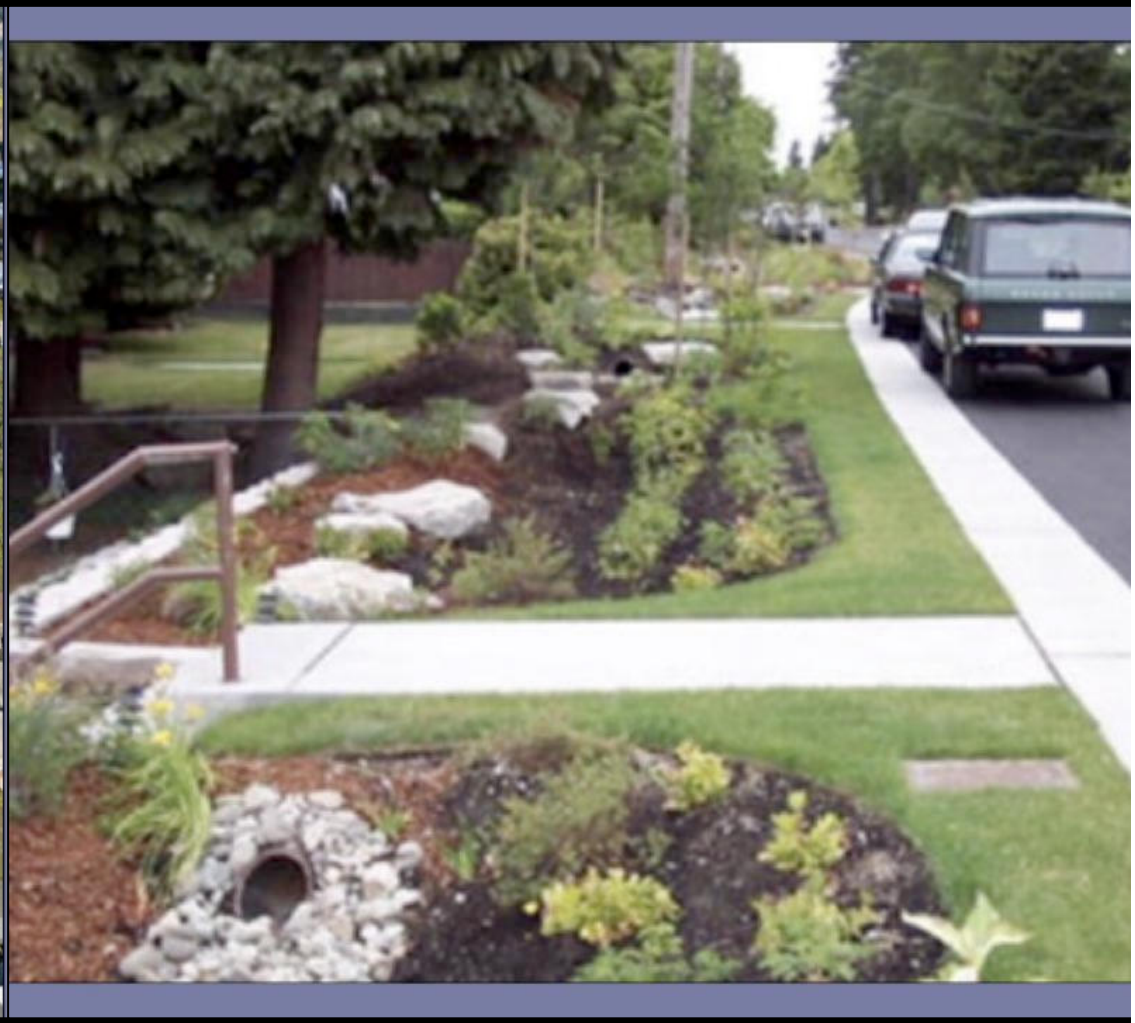
3. Increase the volume and diversity of vegetation in the city (along streets, right of ways, industrial, commercial and residential sectors)

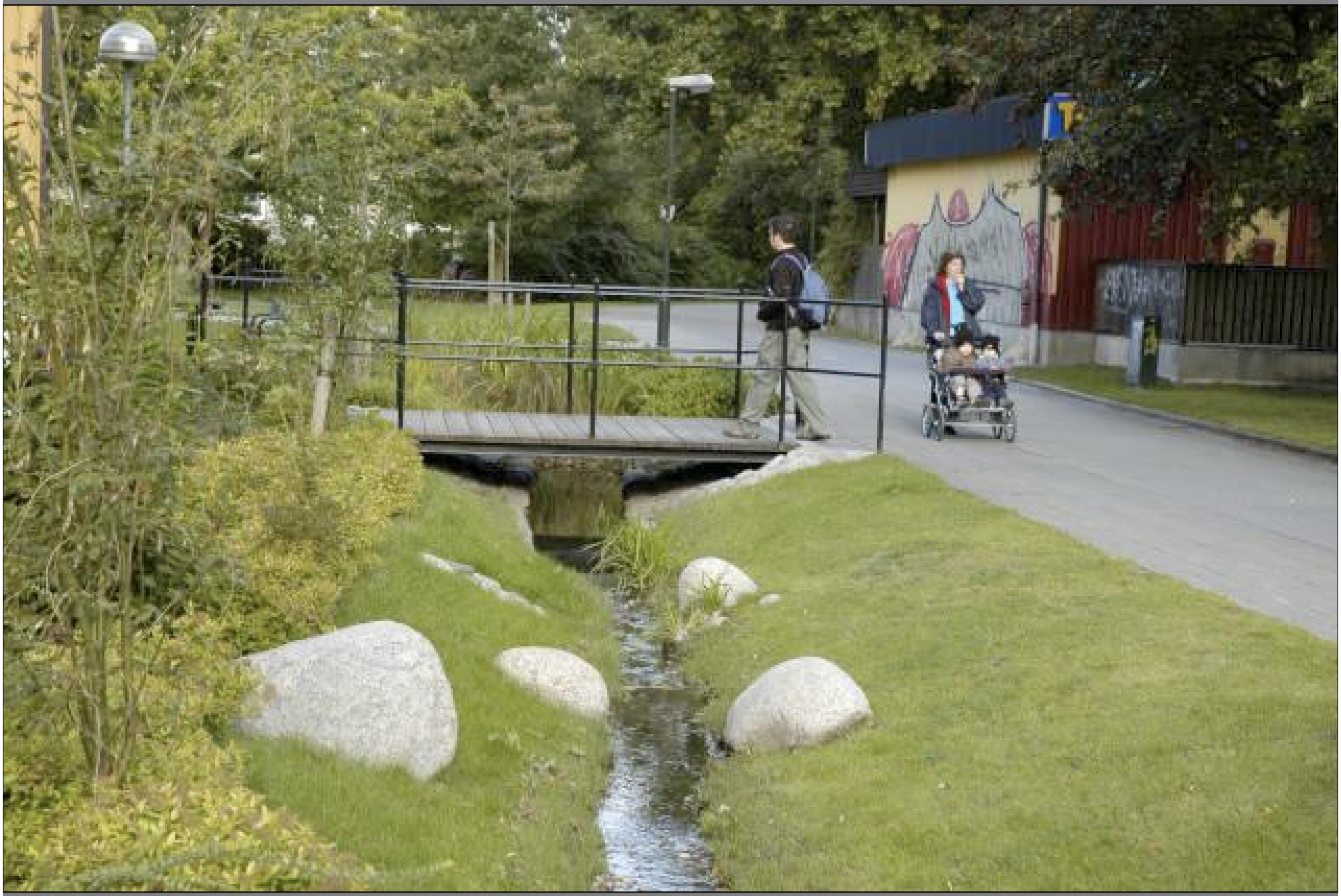
4. Increase the structural diversity of vegetation in natural and recreational parks of the city.

Seattle,
Freeway Park

Seattle, Freeway Park

Seattle, Freeway Park



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Pickering
3.60 km
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©2006 Google™
0'13.52" N 79°10'59.15" W elev 138 m
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1780 m
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Brougham
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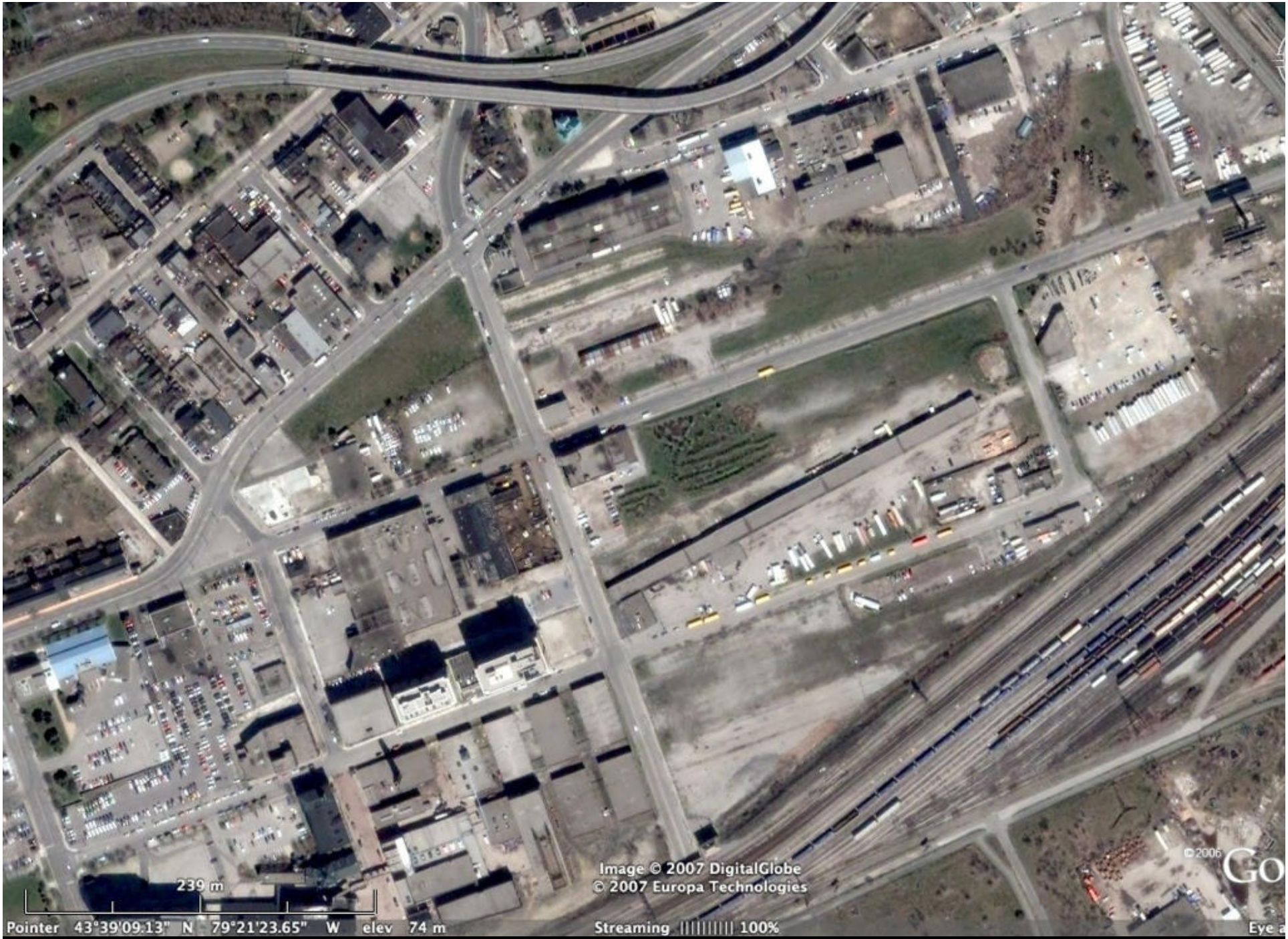
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