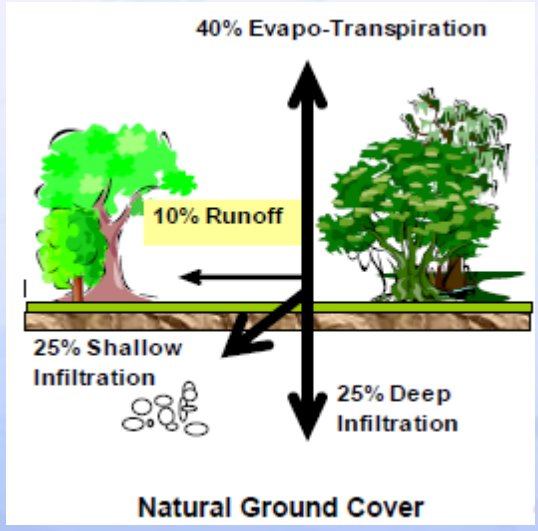
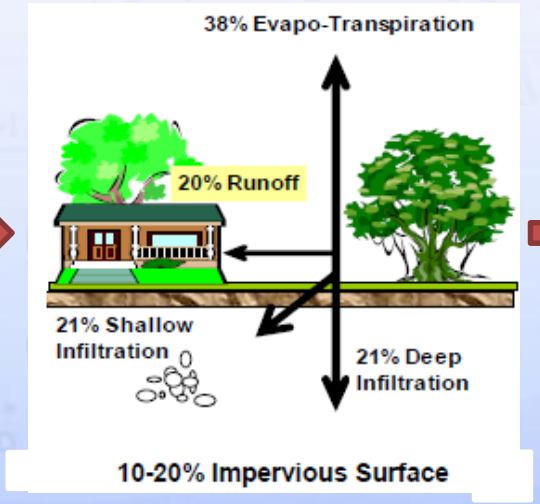
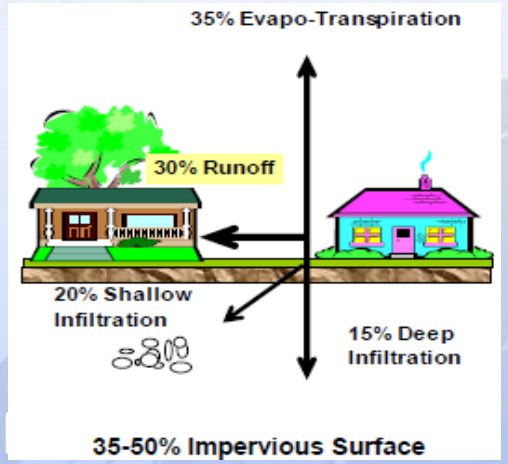
Kent Ridge Experimental Catchment

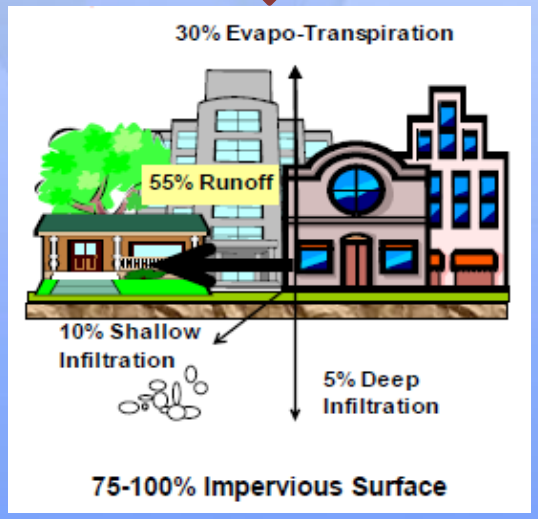
Basic Information

Urbanization and Hydrological Processes

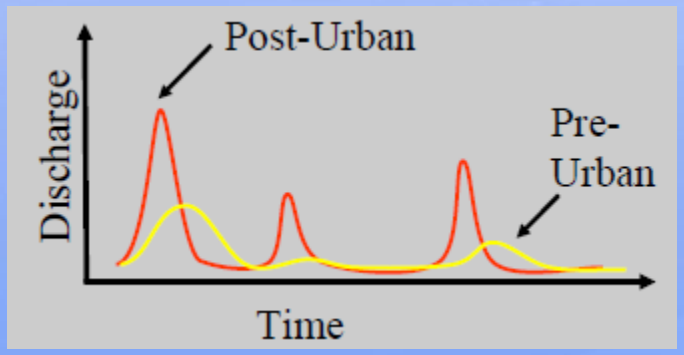








One of Consequences



http://www.coastal.ca.gov/nps/watercyclefacts.pdf

Kent ridge catchment (8.5 ha)

Main land cover:

16% Roofs (R) (1.4 ha)

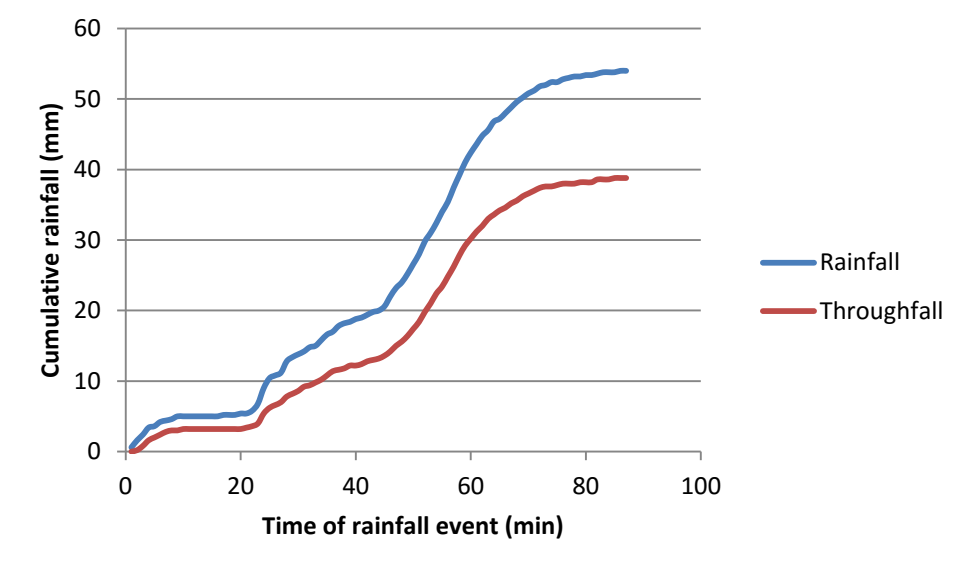
9% Parking and roads (P) (0.8 ha)

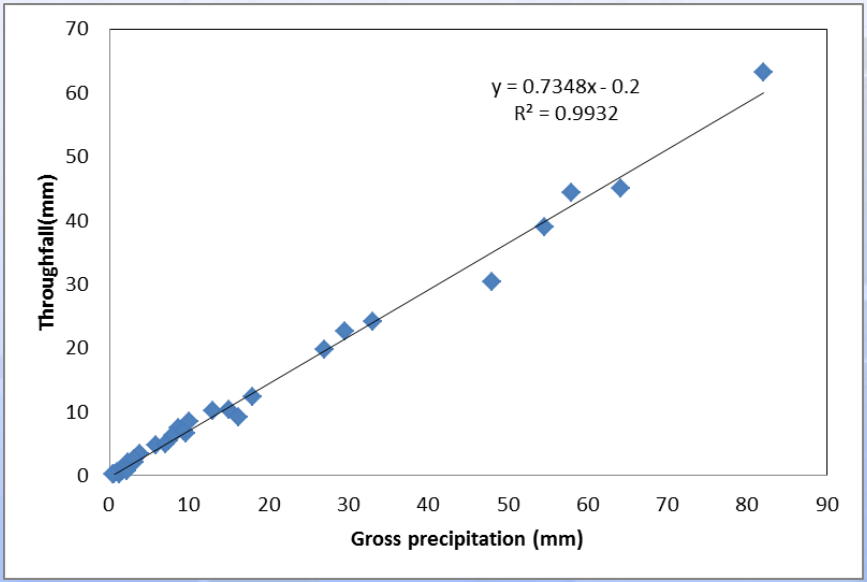
75% Steep unpaved areas (U) (6.3 ha)

Monitoring network:

- ❑ 5 rainfall stations
- ❑ 14 water level stations (3 include flow velocity)
- ❑ Infiltration measurements
- ❑ Groundwater measurements
- ❑ Canopy storage

Canopy storage/interception under bushes

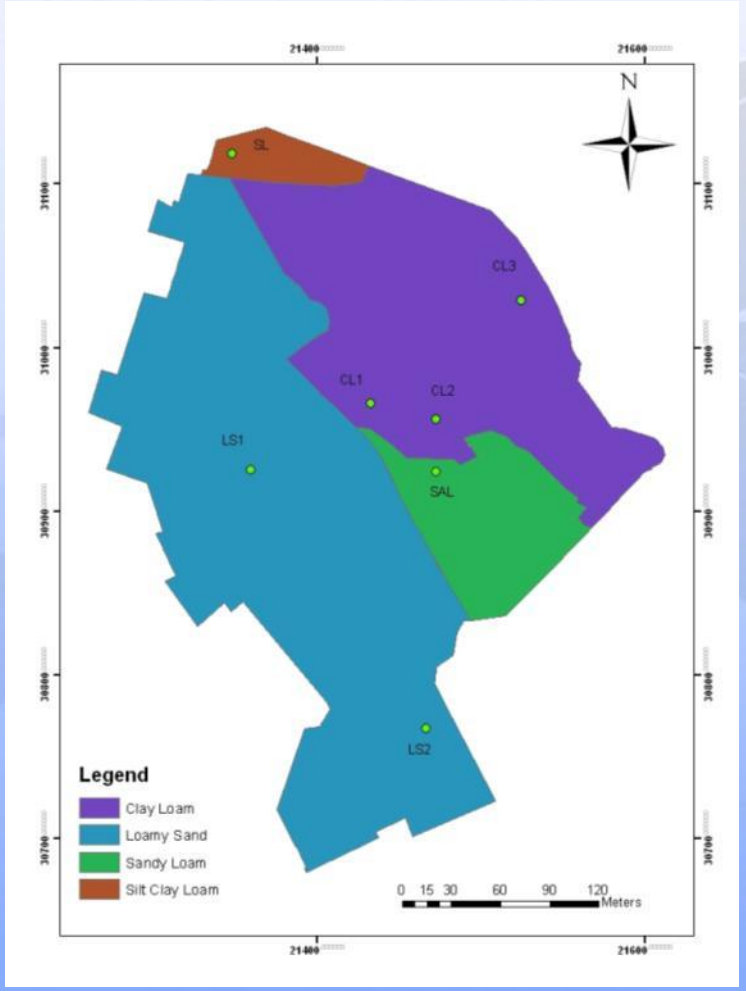




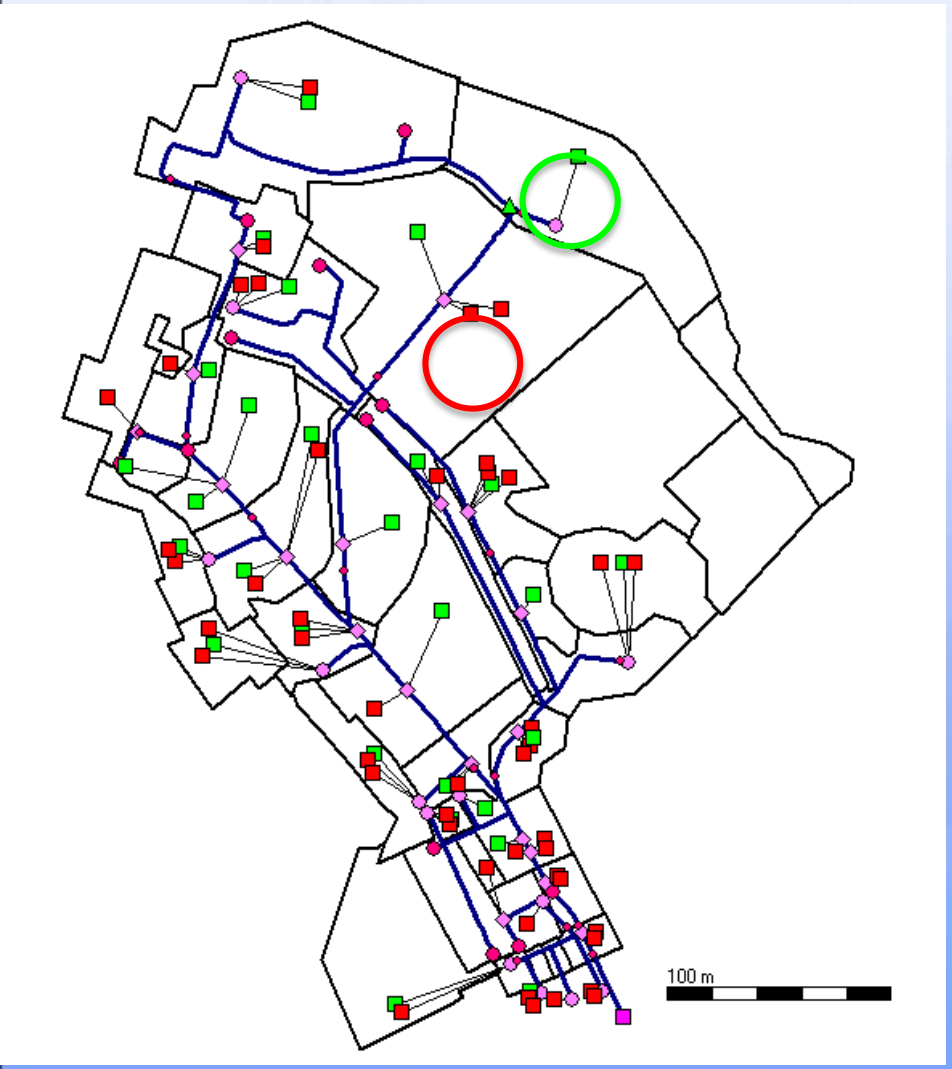
- Event based results shows a rainfall interception between 14-30%
- Linear relationship between rainfall interception and overall measured total rainfall.

Infiltration rates in cities as influenced by greenery

- Variation of soil type and land use
- Using tension disk infiltrometers
- Distrubed soil sampling for water content



Schematization of Sub-catchments



- Paved nodes:
  - Roof/closed and open paved
  - Important for rainfall runoff processes
    - Short delay for surface runoff contribution
- Unpaved nodes:
  - Bushes/grass,...
  - Soil type: loamy sand, clay...
  - Rainfall Runoff Processes
    - surface roughness + sub-surface resistance surface + sub-surface runoff contribution