# Town of Avon

# <https://en.wikipedia.org/wiki/Avon,_Connecticut>

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# Tick check <https://www.tickcheck.com/stats/county/connecticut/hartford-county/lyme>

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Deer population <https://docs.google.com/a/deerfriendly.com/viewer?a=v&pid=sites&srcid=ZGVlcmZyaWVuZGx5LmNvbXxob21lfGd4OjdkZGU3MzY4MWJiZGYyMjA>

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# Approach 1- Minimize number of cases after treatment

**Objective function:** Minimize number of cases after treatments

**Decision variable**: Purchase cost

**Constrains**

* *No more than 3 chemicals*:
* Vaccination less then town population:
* Deer control should be limited to 10% of deer population:
* Spending deviation within 5% of the budget:
* Area covered within 95% of the town area:
* Minimal area to cover 7 acres
* None-negativity:



**Results**

# Approach 2- Multi-goal

**Decision Variables:**

**Objective function:**

Subject to:

Case reduction goal (priority #1): -undesirable overachieve

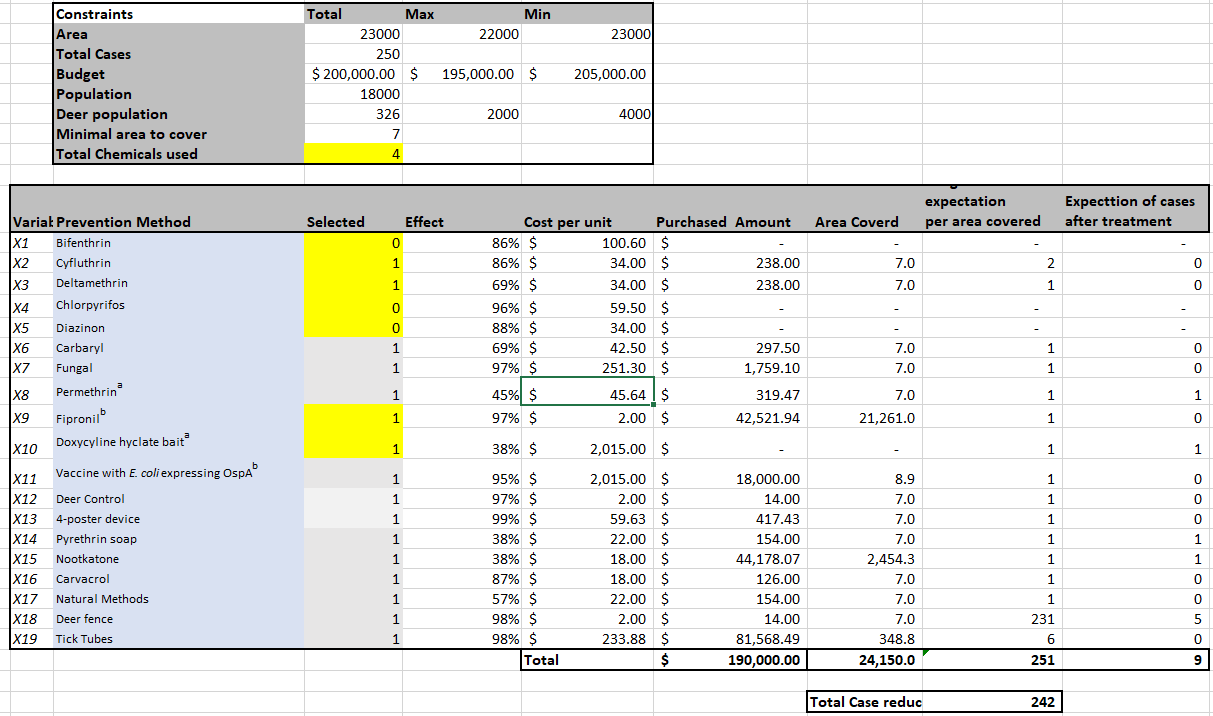
Environment impact goal (priority #2): - undesirable underachieve

Area covered goal (priority #3): - undesirable underachieve, overachieve

Budget Utilization goal (priority #4): – undesirable underachieve, overachieve

None-negativity:





# Approach 3 - Stochastics