

Add a Watershed Solution

Rain garden

Rain barrel/cistern/
tank

Turf/concrete
reduction

Indicate the catchment area:
Adjust the dotted polygon on the map to outline the catchment area (usually the roof) that drains into your watershed solution

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Indicate the approximate location of the turf/ concrete reduction area on map.

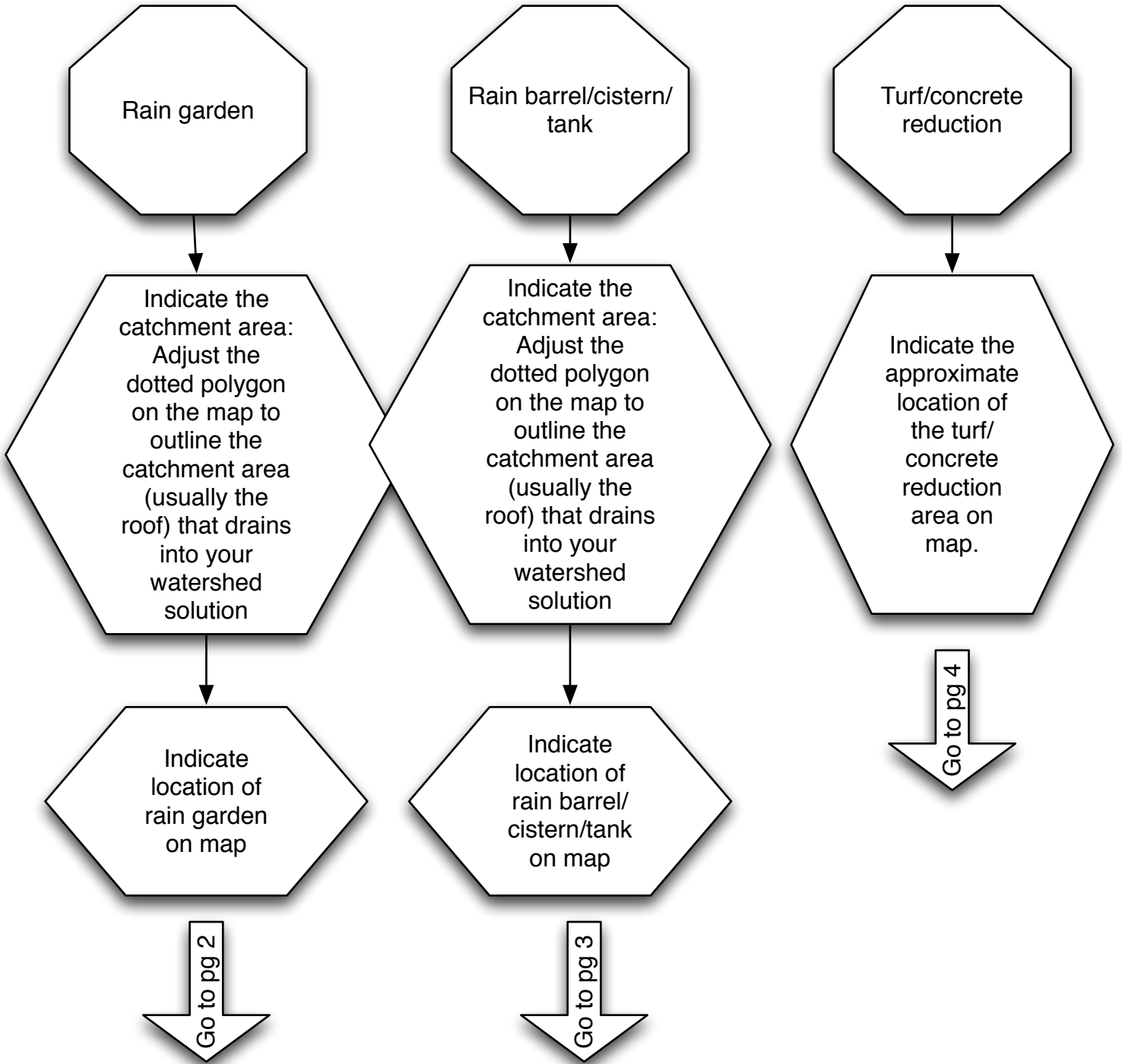
Indicate location of rain garden on map

Indicate location of rain barrel/ cistern/tank on map

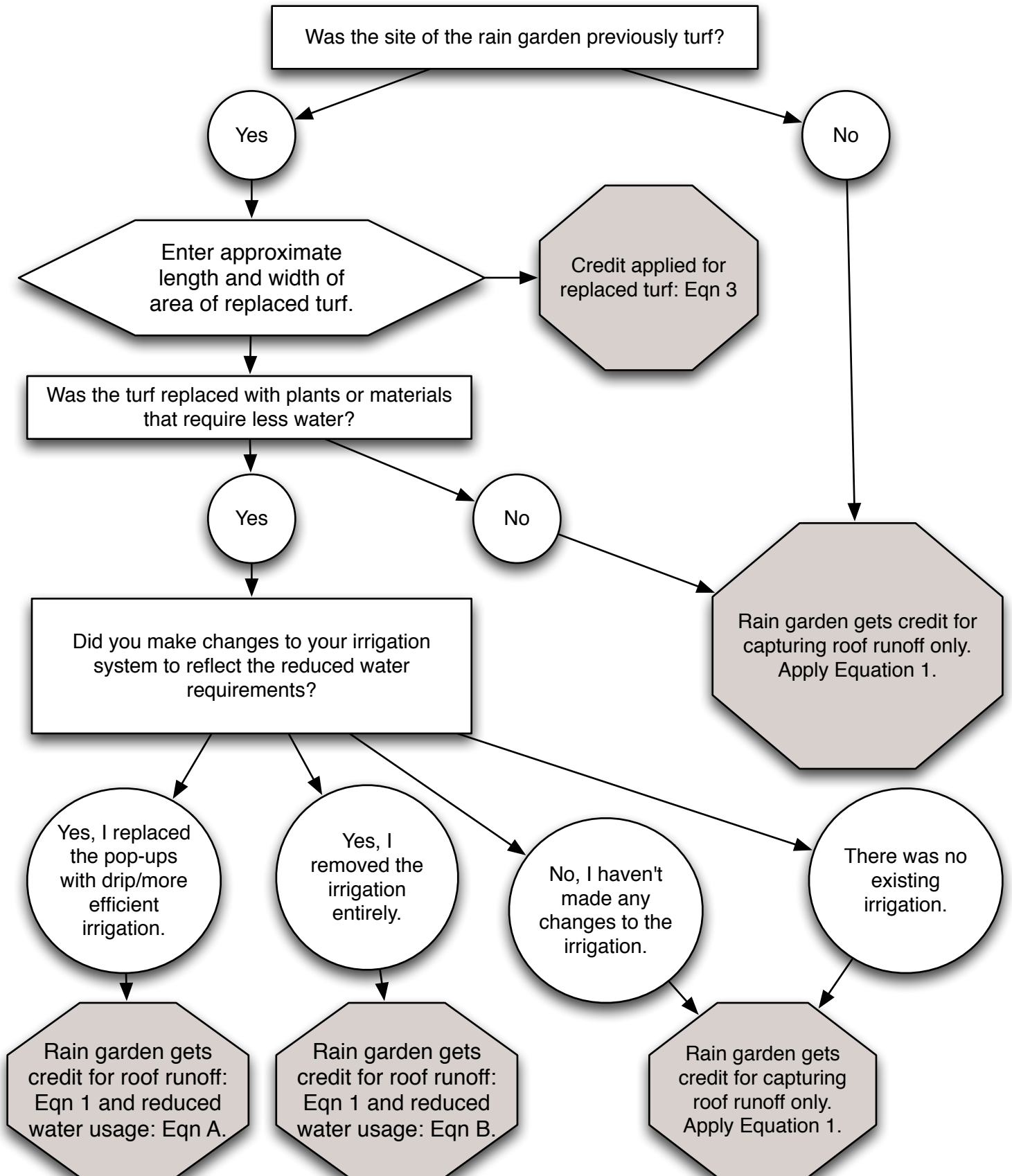
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Go to pg 2

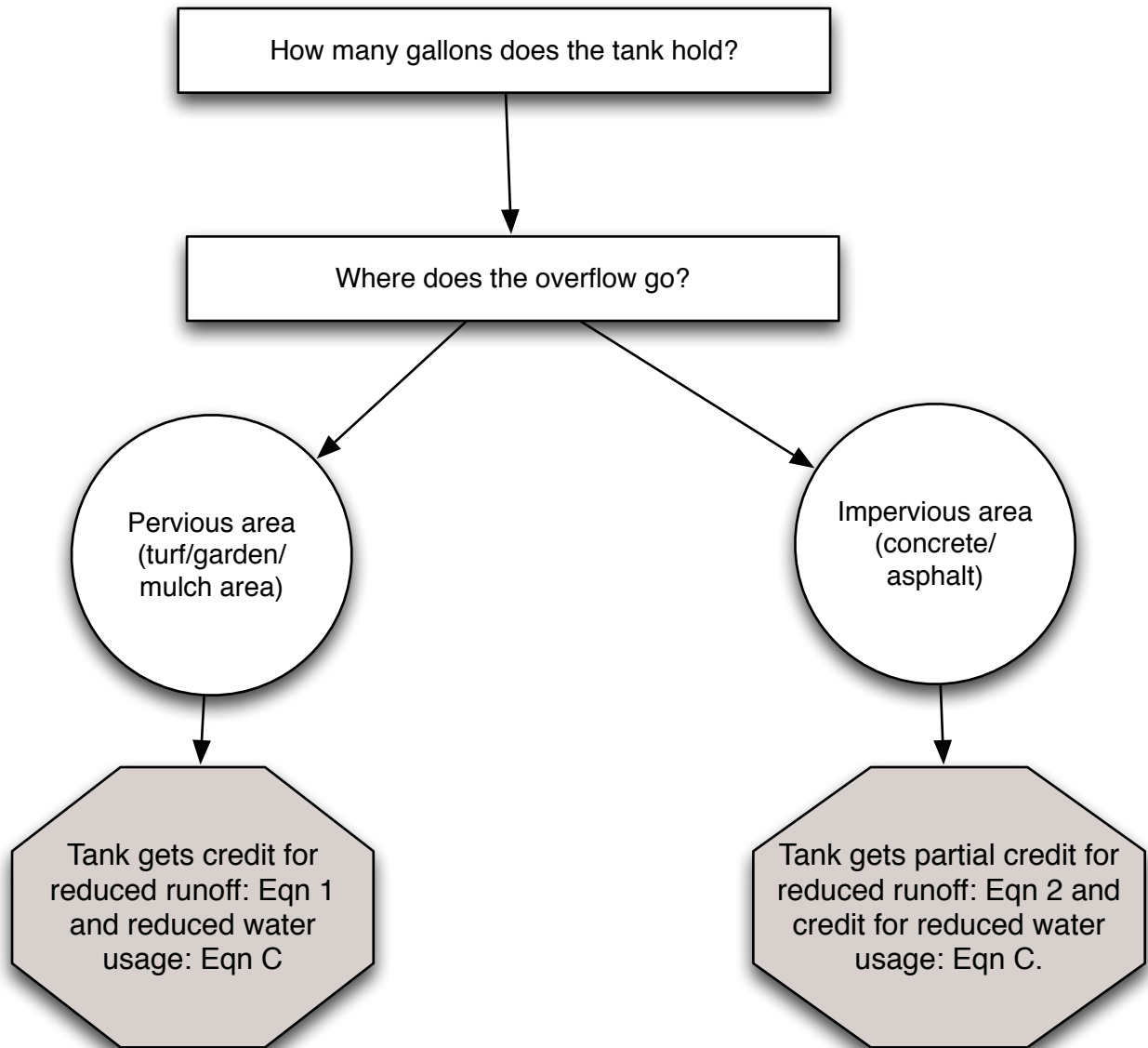
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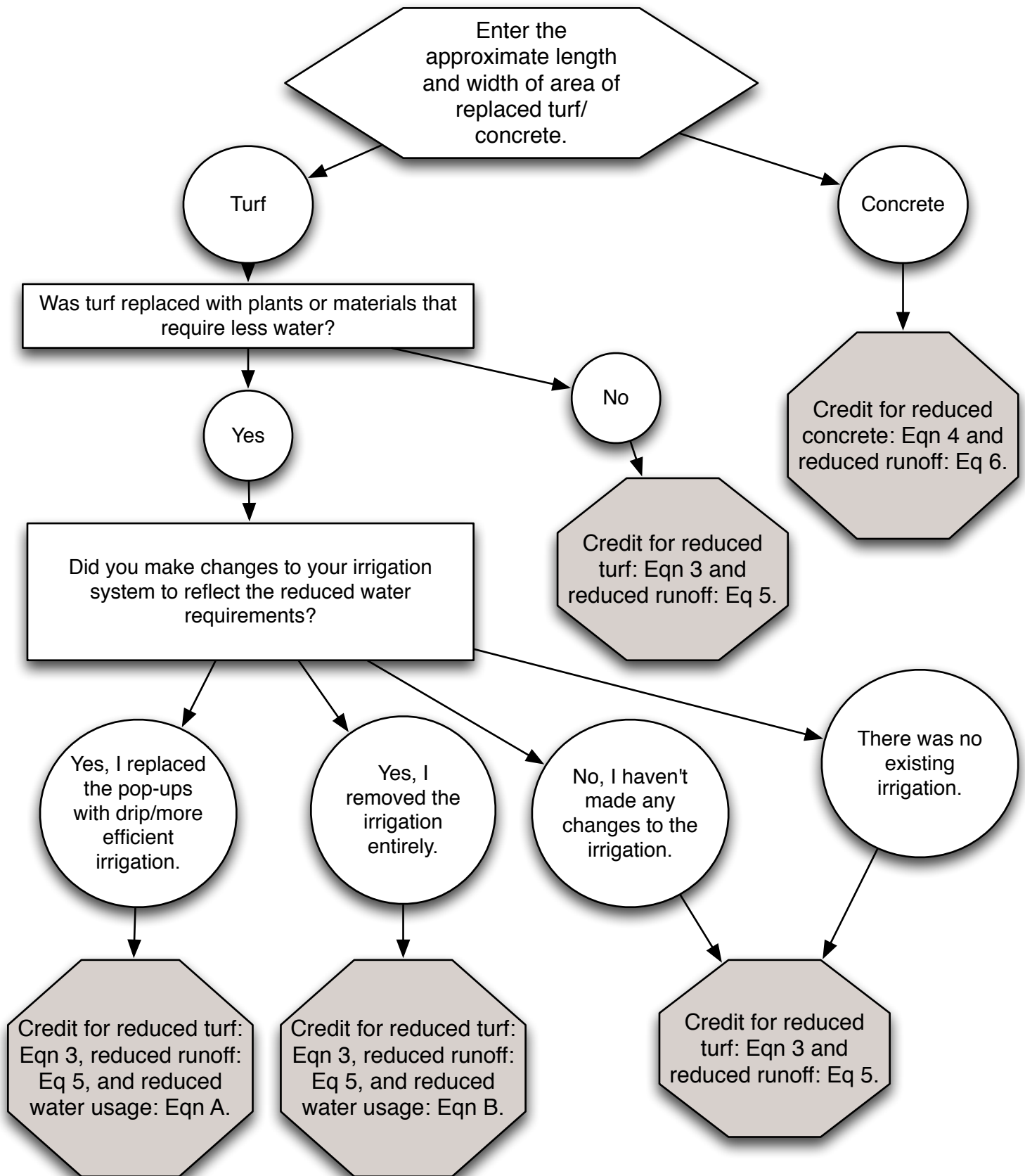
Rain gardens



Rain barrel/cistern/tank



Turf/concrete reduction



Equations

Reduced runoff equations

Equation 1: Roof runoff (gallons) = $(C) (P/12) (7.48) (0.85)$

Equation 2: Annual tank capacity (gallons) = If $T < 500$, $T * 7$. else $T * 3.5$, but not to exceed roof runoff as calculated in Eq. 1

(In other words, for tanks less than 500 gallons, multiply the tank size times 7; for tanks bigger than 500 gallons, multiply the tank size times 3.5, but the total annual tank capacity can't exceed the amount of runoff from the catchment area.)

Equation 3: Turf removed (sq ft): $TR = L * W$ of turf area

Equation 4: Concrete removed (sq ft): $CR = L * W$ of concrete area

Equation 5: Reduction in runoff after turf removal (gallons) = $(TR) (P/12) (7.48) (0.15)$

Equation 6: Reduction in runoff after concrete removal (gallons) = $(CR) (P/12) (7.48) (0.75)$

Reduced water usage equations

Equation A: Reduced water use due to more efficient irrigation = $0.83 * 17.7 * RG$ (or TR or CR)

Equation B: Reduced water use due to removed irrigation = $1.75 * 17.7 * RG$ (or TR or CR)

Equation C: Reduced water use due to presence of tank = same as Equation 2

Variables

P = annual precipitation (inches)

C = catchment area (roof or turf/concrete replacement area) (sq ft)

T = rain barrel/tank/cistern capacity (gallons)

RG = rain garden area (sq ft)

TR = turf replaced (sq ft)

CR = concrete replaced (sq ft)