

Threat:

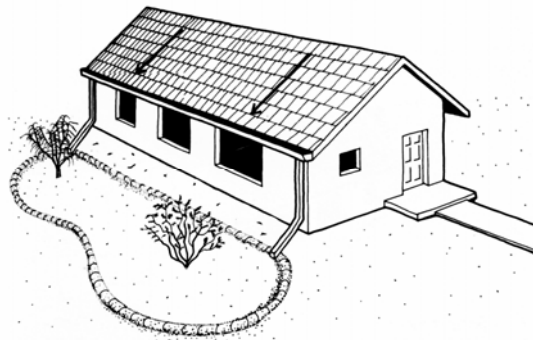
Storm Water Runoff

- **Storm Water Runoff** causes stream erosion and channel down-cutting
- 1 inch of rainfall on 1,000 square feet can generate over 600 gallons of Storm Water Runoff

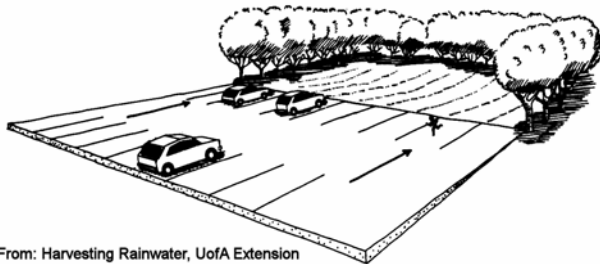


Solution: Land Contouring

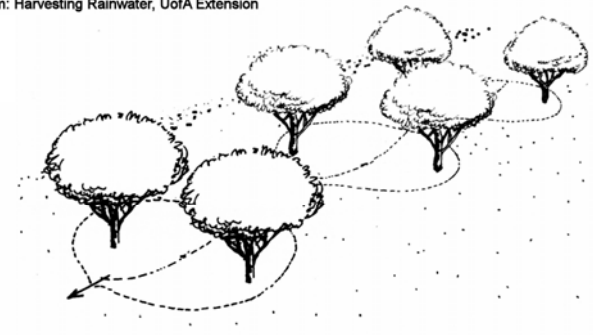
- Slow the rain water down and allow to sink into the soil.
- Concave design of landscaping.
- Buffer landscaped land, parking lots and other impermeable surfaces.



From: Harvesting Rainwater, UofA Extension



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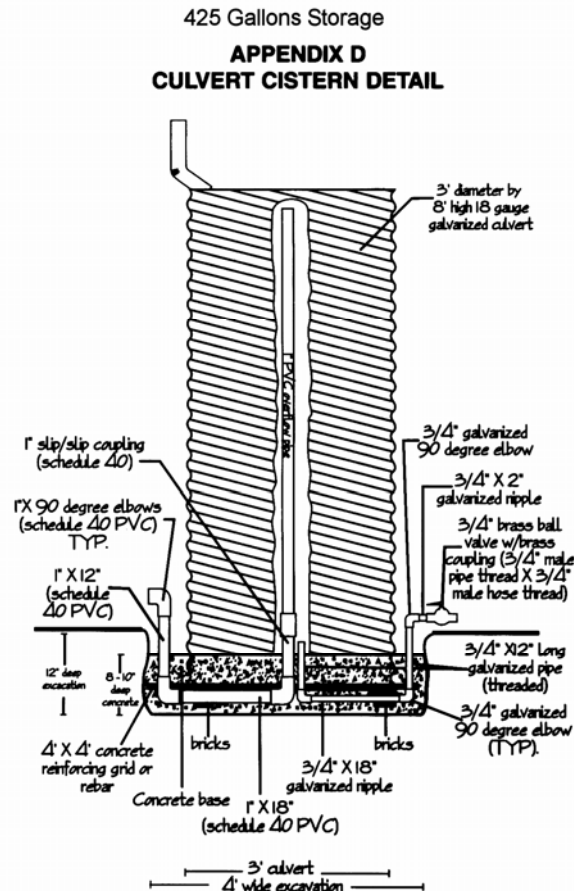


Series of planted water harvesting basins on a slope.

From: Harvesting Rainwater, UofA Extension

Solution: Rain Harvesting

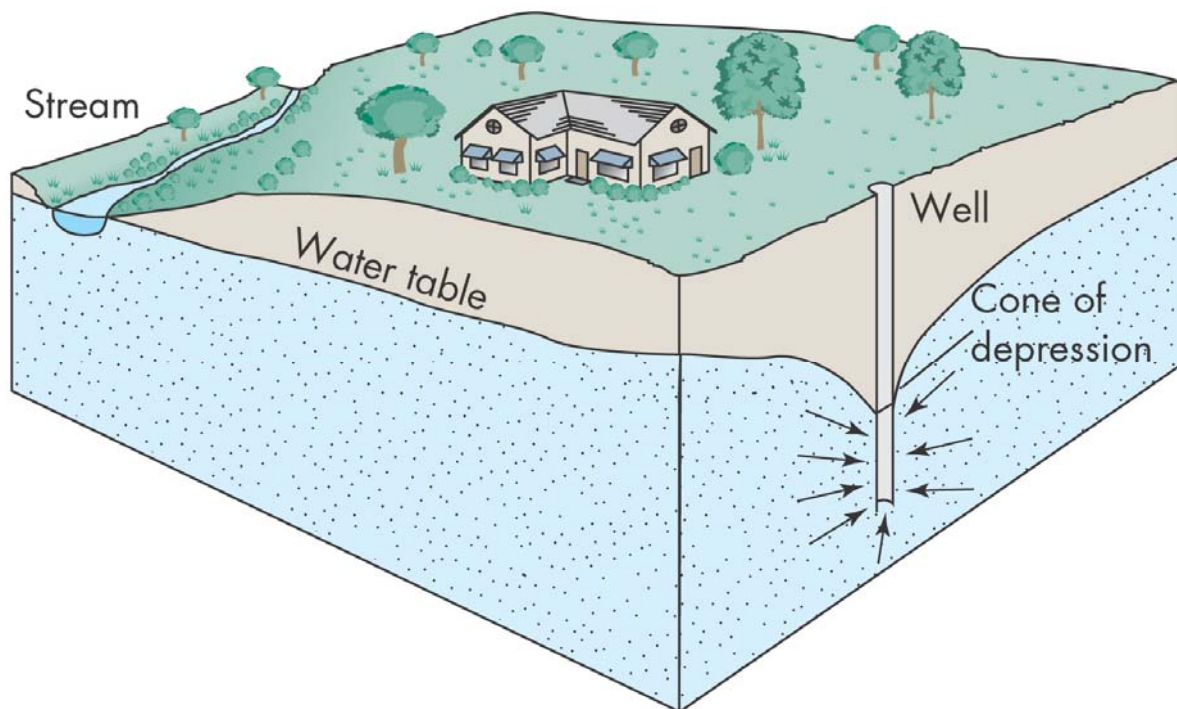
- 600 gallons a month will water 450 SqFt of landscaping
- **\$1,000 Arizona Tax Credit**
- You need to be serious about construction!



Threat:

Ground Water Pumping

- Ground Water Pumping “captures” water that would otherwise enter the river.
- What takes centuries to accumulate can be pumped in decades.
- Small well usage is unknown due to lack of metering.



Threat: Water Diversion

- Surface water diversion reduces river flow amounts
- Lack of management allows for misunderstandings, abuse and excess use.



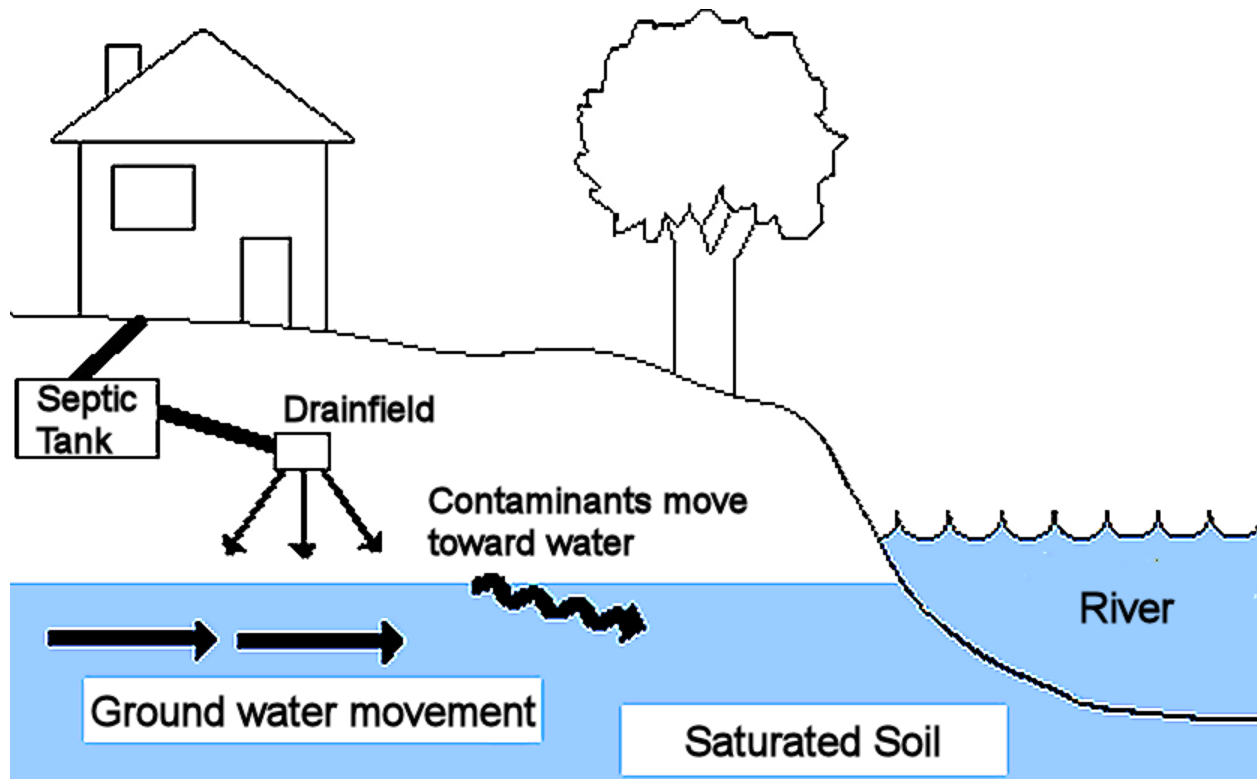
Solutions:

Pumping & Diversion

- Legally connect Surface and Ground water
- Complete Adjudication process to legalize surface / ground rights
- Insure complete funding for ADWR hydrology studies
- Mandate “Water Boss” rules for surface diversions
- Mandate water fee schedules such that **basic usage** is very **low cost** and **high usage** is very **high cost**
- Connect land use planning to water availability

Threat: Septic Tanks

- High density septic tank infrastructure in unincorporated areas.
- Example: >4,000 units in Verde Villages generate ~1,800,000 gallons of wastewater PER DAY



Threat: Low Treatment Levels

Raw Wastewater vs. Septic Tanks

	Raw	S.T.
BOD	150 – 400	150
TSS	150 – 400	75
TN	20 – 60	53
FC	10 ⁸	10 ⁸

Septic Tanks vs. Treatment Plants

	S.T.	T.P.
BOD	150	<10
TSS	75	<10
TN	53	<10
FC	10 ⁸	200

BOD = Amount of Oxygen needed to cleanse

TSS = Junk in the water. Grit and “Organic”

TN = Total Nitrogen. Think plant food.

FC = Fecal Coliform. Think E. Coli.

Concentrations in mg/L except FC. Each mg = .1%.

FC is expressed in col/100ml

Solution:

Discharge Management

- High density wastewater needs zoning requiring Advanced Wastewater Treatments Plants.
 - **Plants sized @ 25,000 GPD can service 100 homes**

Gray Water needs to be removed from the wastewater stream.

Water Reuse for systems greater than 6,000 gallons.

Zero Discharge systems need to be mandated.

Solution:

What can YOU do?

- Become **AWARE** of
 - What the issues are and
 - Who the players are
- Become **EDUCATED** on
 - The science behind it
 - How the processes work
- Become **ENGAGED** with
 - The decision making process
 - An organization that will help you support these solutions with information and education

The VRCA will keep you informed, educated and help you engage in these decisions.

Please Join Today