COSTS AND USES OF COMMUNITY WELLS vs. SINGLE FAMILY WELLS

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WPIC

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TOPICS

- Deciding on the appropriate type of water system for a subdivision
- Where are community wells appropriate?
- Connecting to an existing public supply
- Comparison of costs: Community vs. single family (i.e. individual) wells
- Resource impacts of high flow wells vs. multiple small flow wells

DEFINITION

- **PUBLIC WATER SYSTEM**
  - **Serves 25 or more people or 15 or more connections for 60 days or more per year.**
  - **Community (e.g. town)**
  - **Non-transient, non-community (e.g. school)**
  - **Transient, non-community (e.g. restaurant)**
- **MULTI-USER WATER SYSTEM**
  - **3 through 14 living units or commercial structures, total population cannot exceed 24**
- **Community = multi-user/public system (for purposes of this discussion)**

WHAT IS THE APPROPRIATE WATER SYSTEM

- **For lots 1 acre and larger:**
  - **Decision is up to the developer**
  - **Must meet DEQ rules and circulars**
  - **DEQ cannot dictate type of water system if rules are met**
- **For lots over 20,000 sq. feet and under 1 acre:**
  - **must have either community water or wastewater**
- **For lots 20,000 sq. feet (approx ½ acre) or less:**
  - **Must have both community water and wastewater**

WHERE ARE COMMUNITY WELLS APPROPRIATE?

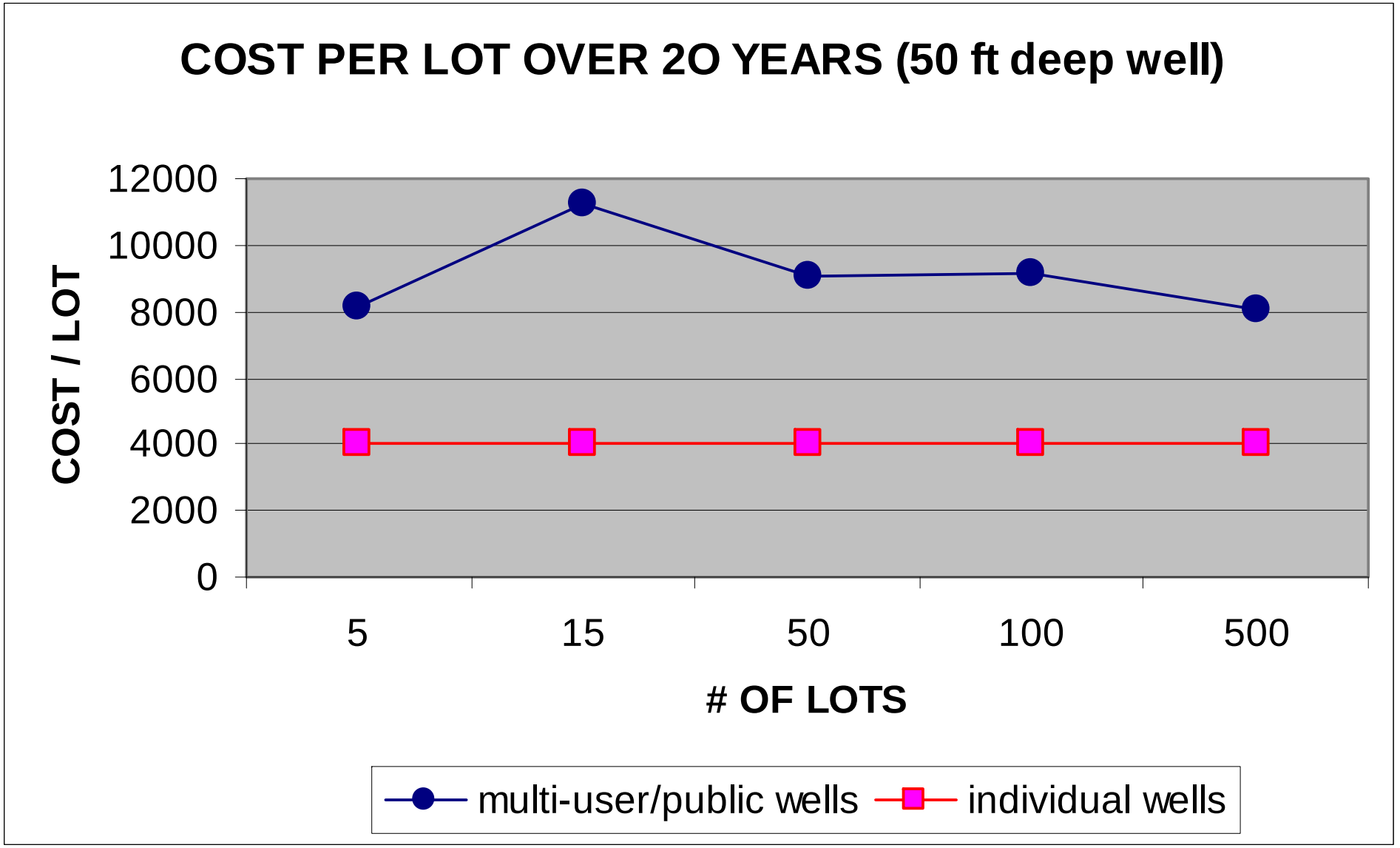
- **Community wells can be used on just about any subdivision, but:**
  - **With larger lots, infrastructure becomes more expensive and complicated**
  - **Aquifer can be limiting factor (low yield wells)**
  - **Slow build-out of subdivision can result in water quality issues due to dead ends and stagnant water**
  - **Can developer afford up-front costs**

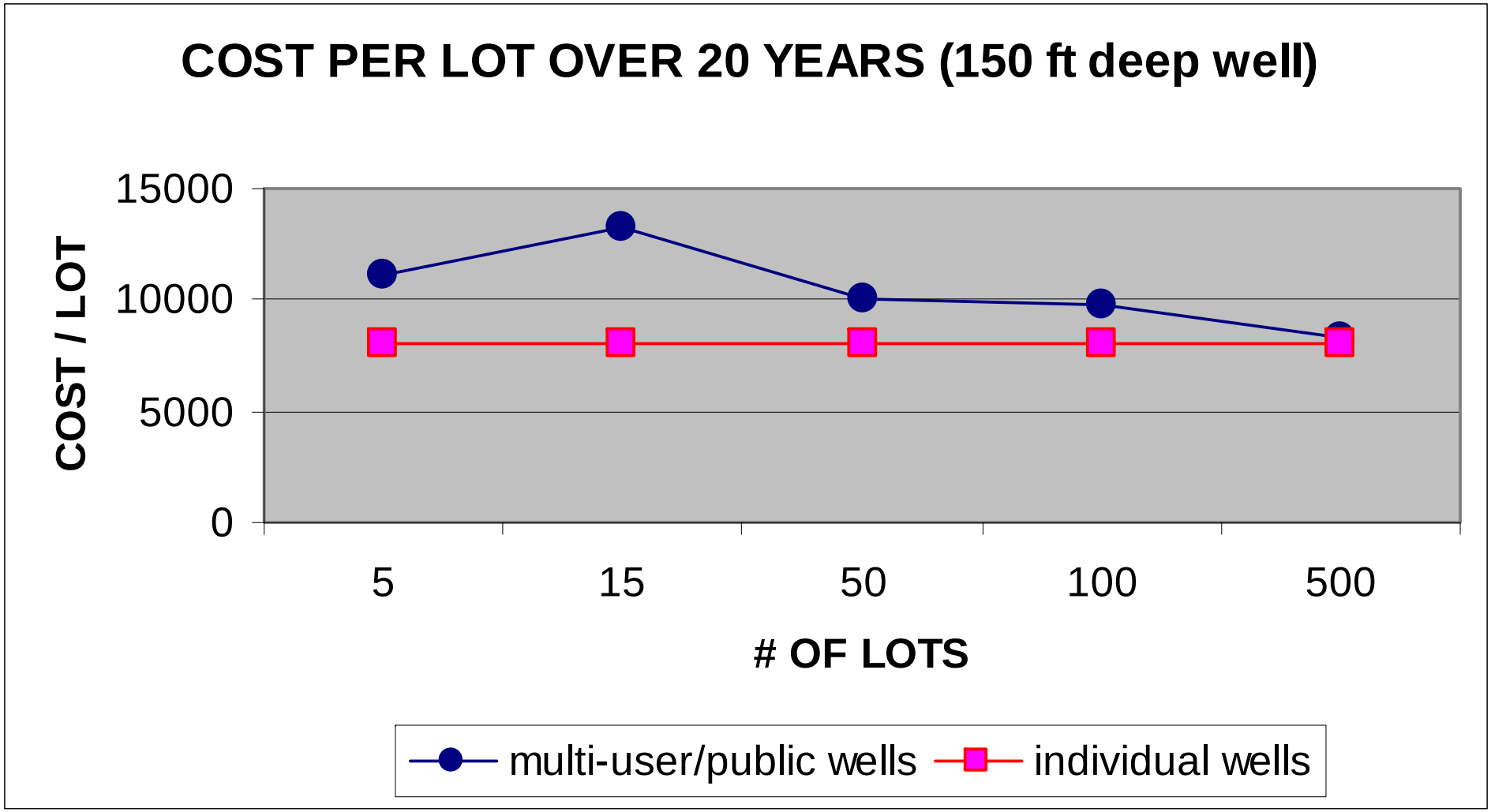
CONNECTION TO AN EXISTING PUBLIC WATER SUPPLY

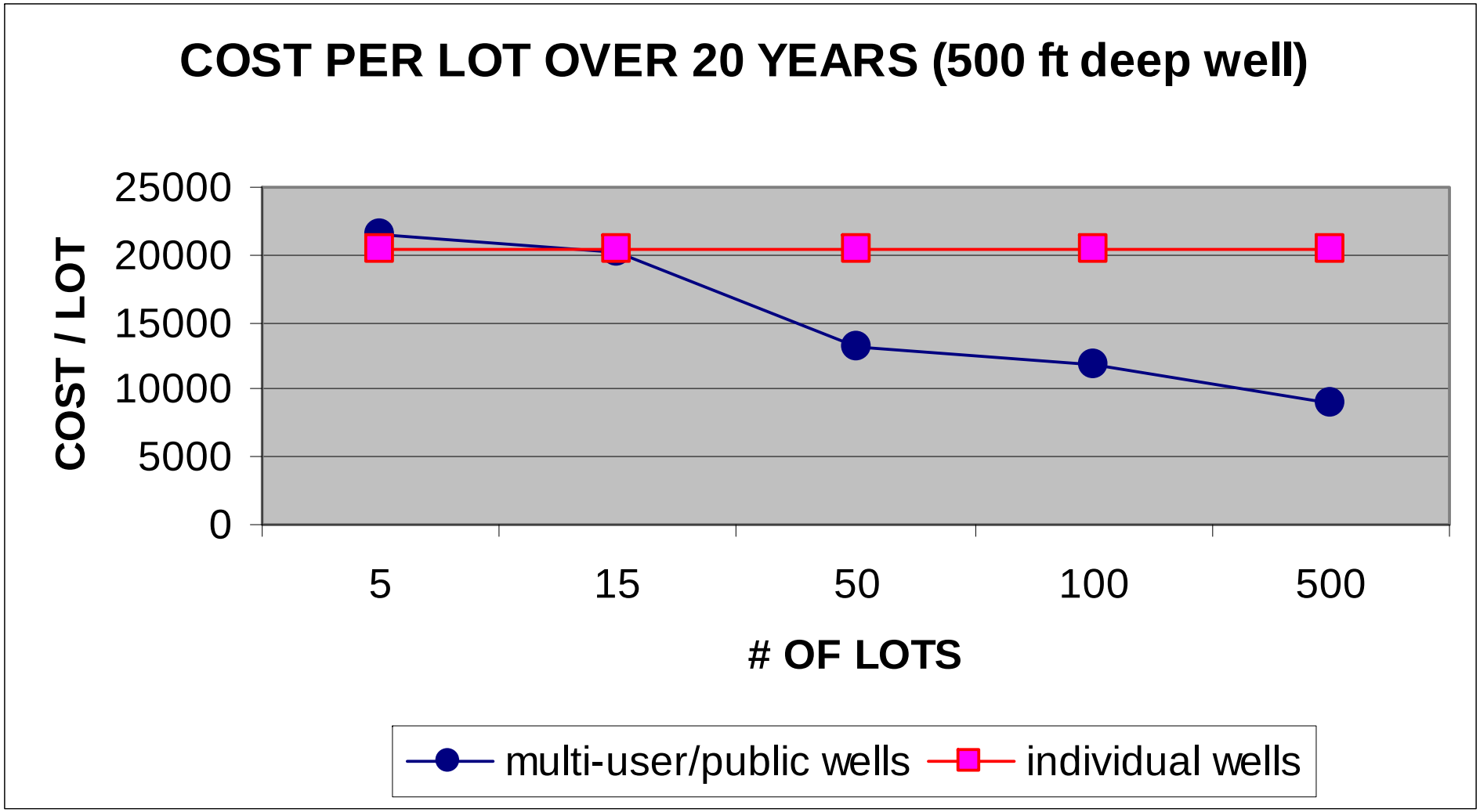
- **Rules require connection to existing public system within 500 feet of a proposed subdivision, unless:**
  - **The cost to connect is >3x the cost as compared to an approvable on-site system;**
  - **Connection is limited by a physical obstruction;**
  - **Connection is limited by unobtainable easement; or**
  - **Public system wont allow connection**
  - **Doesn’t apply to existing multi-user system**
- **Cost to design and build water connection is initially borne by developer**
  - **Up-front costs incorporated into lot prices**

COSTS OF COMMUNITY vs INDIVIDUAL WELLS

			MUTLI_FAMILY / PUBLIC WATER SYSTEM										
Well Depth (feet)	# LOTS	# Wells	Drill + Pump ($150/ft)[1]	Infrastructure[2]	Monitoring + Operator (year)[3]	Total	Total (20 years)	Cost / Lot (20 Years)	# Wells	Drill + Pump ($30/ft)[4]	Monitoring + Operator	Total	Cost / Lot (20 years)
50	5	1	$7,500	$33,000	$0	$40,500	$40,500	**$8,100**	5	$20,000	$0	$20,000	**$4,000**
50	15	2	$15,000	$84,000	$3,500	$102,500	$169,000	**$11,267**	15	$60,000	$0	$60,000	**$4,000**
50	50	3	$22,500	$362,500	$3,500	$388,500	$455,000	**$9,100**	50	$200,000	$0	$200,000	**$4,000**
50	100	4	$30,000	$815,000	$3,500	$848,500	$915,000	**$9,150**	100	$400,000	$0	$400,000	**$4,000**
50	500	6	$45,000	$3,925,000	$3,500	$3,973,500	$4,040,000	**$8,080**	500	$2,000,000	$0	$2,000,000	**$4,000**
150	5	1	$22,500	$33,000	$0	$55,500	$55,500	**$11,100**	5	$40,000	$0	$40,000	**$8,000**
150	15	2	$45,000	$84,000	$3,500	$132,500	$199,000	**$13,267**	15	$120,000	$0	$120,000	**$8,000**
150	50	3	$67,500	$362,500	$3,500	$433,500	$500,000	**$10,000**	50	$400,000	$0	$400,000	**$8,000**
150	100	4	$90,000	$815,000	$3,500	$908,500	$975,000	**$9,750**	100	$800,000	$0	$800,000	**$8,000**
150	500	6	$135,000	$3,925,000	$3,500	$4,063,500	$4,130,000	**$8,260**	500	$4,000,000	$0	$4,000,000	**$8,000**
500	5	1	$75,000	$33,000	$0	$108,000	$108,000	**$21,600**	5	$102,500	$0	$102,500	**$20,500**
500	15	2	$150,000	$84,000	$3,500	$237,500	$304,000	**$20,267**	15	$307,500	$0	$307,500	**$20,500**
500	50	3	$225,000	$362,500	$3,500	$591,000	$657,500	**$13,150**	50	$1,025,000	$0	$1,025,000	**$20,500**
500	100	4	$300,000	$815,000	$3,500	$1,118,500	$1,185,000	**$11,850**	100	$2,050,000	$0	$2,050,000	**$20,500**
500	500	6	$450,000	$3,925,000	$3,500	$4,378,500	$4,445,000	**$8,890**	500	$10,250,000	$0	$10,250,000	**$20,500**


COST PER LOT OVER 2O YEARS (50 ft deep well)
COST / LOT
12000
10000
8000
6000
4000
2000
0
5
15
50
100
500
OF LOTS
multi-user/public wells
individual wells


COST PER LOT OVER 20 YEARS (150 ft deep well)
COST / LOT
15000
10000
5000
0
5
15
50
100
500
OF LOTS
multi-user/public wells
individual wells


COST PER LOT OVER 20 YEARS (500 ft deep well)
COST / LOT
25000
20000
15000
10000
5000
0
5
15
50
100
500
OF LOTS
multi-user/public wells
individual wells

IMPACTS OF HIGH FLOW WELLS vs MULTIPLE LOW FLOW WELLS

- Amount of water use per home in community system could be reduced due to per gallon cost of water
- Distribution/location of wells can effect impacts to nearby resources (e.g. surface water)
- Using community wells often means higher density than with individual wells