



GALLATIN COUNTY

MEMO

To: Amsterdam/Churchill Residents
From: Warren Vaughan, Planning Department
Date: October 29, 2007
Re: Community Meeting Regarding Sewer and Water Issues

Attached are the meeting notes from the October 25 Amsterdam/Churchill Neighborhood Planning meeting regarding sewer and water issues. Hank Dyksterhouse discussed sewer issues and Jim Potts discussed water issues. In addition, I toured the lagoons on Friday morning with Hank and have included notes and photos from that as well.

All of the notes from the four education forums we have held (roads/transportation, schools, fire/emergency services, and sewer/water) will be compiled into a basic public facilities inventory that will be available at the community planning kickoff on November 15th and which will form the factual basis for the plan. Thanks to everyone who contributed information; it isn't the most complete report, but it does explain many issues and can hopefully provide a solid basis for the rest of the work.

Thanks to everyone who came to the meeting, and thanks to the Fire Department for agreeing to be our hosts. Again, we've got the community planning kickoff meeting from 6:30 to 9:00 PM at the Amsterdam Rural Fire Department on November 15th. Please invite everyone you know. If you have any questions, feel free to contact me at 582-3130 or email at Warren.Vaughan@gallatin.mt.gov.

**Notes from the October 25th Amsterdam/Churchill Neighborhood Planning Meeting
re: Sewer/Water Issues:**

Sewer Issues (Hank Dyksterhouse)

- Original discussions for the sewer system began in 1972. In 1976, members of the community got a grant from FHA (difficult because the community was not incorporated). Finally formed the Sewer District in 1977 and elected a Board.
- The Board has five members, who generally vote on issues such as rates and approval of hookups.
- System was designed to handle 500-550 hookups (though there is some issue re: that at the state Department of Environmental Quality [DEQ]).
- When initially formed, the system had approximately 160 immediate hookups. Currently, there are between 275-300 hookups.
- The system uses 3 lagoons to process waste. The lagoons are located northwest of Danhoff Chevrolet in the lowest point of the area. They also happen to be conveniently located out of the way of development.
- The lagoons process only wastewater. There are no storm drains and water runoff is not treated by the system.
- All structures on the western side of the hill (from the school west) have pipe that uses gravity flow to transport waste to the lagoons. Once the wastewater reaches the vicinity of the lagoons, it flows into a tank (with lift station), which then pumps it up to a second tank, from which it gravity flows into the lagoons.
- All property east of the school uses gravity flow to transport waste to a lift station, which then gets the waste to an elevation where it can gravity flow to the lagoons.
- While not pertinent to the issue of wastewater in Churchill, Hank made it clear that the lagoons support a variety of wildlife. Geese tend to enjoy the first lagoon, ducks the second. The third lagoon, which currently holds only a puddle, tends to support deer. I would like to point out that on the day I toured the lagoons with Hank, ducks were in the first pond and geese the second, which Hank swore was very unusual. Deer were spotted in the third lagoon, confirming Hank's earlier observations.
- The Montana DEQ has stated that at the current level of operation, the lagoons and system are working at an acceptable level. If any significant development hooks up to the system in the future (such as the Churchill Northeast development, which is being discussed), then the lagoons may need to be aerated. Aeration would require an investment in equipment but would serve to increase the efficiency of processing the waste.
- The lagoon system is set up so that if the third lagoon is filled, the wastewater will be disposed of by spray irrigation in an adjacent field. Additionally, if needed, there is room for a fourth lagoon next to the current three. As the third lagoon is rarely more than a puddle, however, spray irrigation is rarely, if ever, used.
- As wastewater moves from lagoon to lagoon, it gets increasingly more treated. The water flows passively from lagoon to lagoon through a pipe that Hank raises and lowers. In general, the flow between lagoons 1 and 2 is fairly slow, though

- every few weeks Hank lowers the pipe completely into the lagoon and raised the flow enough to clean out any algae buildup.
- The first lagoon is lined with plastic lining; the second lagoon is lined with bentonite.

Water Issues (Jim Potts)

- All water in Churchill is provided either by individual wells or by larger subdivision wells. There are no connections between any of the larger subdivision wells.
- Much of the groundwater in the area is recharged by leakage from many of the canals. As an example, Jim stated that Godfrey Creek did not historically run year-round, but groundwater recharge from canals has caused it to flow much more regularly. If the canals were not around or were not providing groundwater recharge, the creek would likely not run year-round.
- There are approximately 62 miles of canals upgradient of Churchill that contribute to groundwater; in recent years, approximately 8 miles of these canals have been lined and/or tubed, meaning that they are not replacing groundwater. This could cause a shift in depth to groundwater and could potentially make a difference in wells in the area. (Jim was clear that these calculations are initial and any quantifications of impact would require much more research).
- Lately, wells have been drilled up to 400 feet, which is significantly deeper than in the past.
- The water table has fluctuated in the past several decades as a result of agricultural practices: in the late 1960's, many irrigators changed from flood irrigation to spray irrigation; in the 1970's, there was a subsequent drop in the water table.
- Jim stated that the Water Quality District and the Bureau of Mines have data showing that the groundwater level is dropping approximately one foot every 5 years.
- The Amsterdam Village Project has proposed drilling into the Madison Aquifer, which would require drilling 1,400 feet deep, which is significantly deeper than any wells in the area. If they don't go this deep, it is possible, they could affect water levels for current well users. Any drilling, however, will be evaluated by the Department of Natural Resource Conservation (DNRC), which will take public comment and require an evaluation of impact on existing wells as part of the application process.
- With the passage of HB 810, permitting large wells in closed basins (such as the upper Missouri, which we are in) will require significantly more work to prove that there is no adverse impact to existing users. There is currently something of a stalemate with development right now: the County encourages central wells, but the change in state law has made permitting these central wells something of an unknown process.

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