

The first Lit Review I discovered was *Baseline assessment of groundwater quality in Wayne County, Pennsylvania, 2014* from U.S. Geological Survey Scientific Investigations Report. This study was done in Wayne County, PA which has a similar geography as Floyd County. They examined groundwater from 89 wells, all which were considered “shallow” wells and reported hundreds of chemicals and contaminants in each. The median well depth was around 291 ft deep. They concluded that while most wells had water that was up to standard drinking quality, some had one or more constituents or properties. “Water with pH values **greater than 8, low oxygen concentrations**, and the **highest arsenic, sodium, lithium, bromide concentrations** most frequently was present in **stream valleys, especially at relatively lower elevations**”. “The baseline assessment of groundwater quality in Wayne County prior to gas-well development **shows that shallow (less than about 1,000 ft deep) groundwater is generally of good quality**”, which is helpful because all of the wells in Floyd County are less than 1,000 ft. But “**methane and some constituents (sodium, lithium, bromide, boron, and others)** that are present in high concentrations in brines and potentially associated with shale-gas development also are present at **low to moderate concentrations**”. It seemed that methane and chloride/bromide mixtures were the most common contaminants found in the groundwater. Because Wayne County has a similar geology as Floyd, this study will give insight on what kinds of contaminants we would find in Floyd.

This second lit review is from *Technical Guide to Managing GroundWater Resources* from the US Department of Agriculture. This article explains how to manage groundwater ecosystems and the different types of contaminants and where we would normally find them. It also speaks on the different activities that affect groundwater that we could use to see what is contaminating the wells in Floyd. I felt like this article was the most useful and informative to how they could manage their groundwater in various ways and overall information on groundwater dependent ecosystems and communities.

This last article is *New River Valley Comprehensive Economic Development Plan* from 2019 by New River Valley Regional Commission. Although this article includes plans for other counties near Floyd, it may actually be useful to see how all of these counties can interact and how they plan to go forward. First, this article had some demographics on Floyd County that may be useful in general to know and then has target industries like advanced manufacturing, food and beverage processing, etc. and small business development and entrepreneurship. There are sections on this region's strengths, weaknesses and potential opportunities and threats in order to examine what the region can sustain for the future. They want to expand transportation systems to connect with employment centers and develop career paths in regional colleges and universities to ensure students are prepared to work in local communities. This article is very insightful on what this area could sustain in businesses and what they want to achieve. I like that this lists some threats and weaknesses also of this area to know what they cannot handle as a community.

Water Quality Report 2020- this was a report done in 2020 in Floyd that examined the groundwater and what kinds of contaminants they found. I think this is a good source because

its recent data and has a list of the contaminants found and a little map of the 3 water systems in Floyd.

Census of Agriculture- this is from 2017 which is somewhat recent and has lots of information on the farms in Floyd and its different crops and livestock. I feel like this will be good to see how much water the farmers are needing and whether or not they can try to cut down their usage or if we need to expand their usage and cut down somewhere else.

Census Reporter- This is a census report of the demographics of Floyd County from 2019. This will be useful when determining what kinds of jobs they need, what they can afford to do and what types of people we are looking at.

EPA and Clean Water Act- Water Quality Association- these 2 sources are just standards of what drinking water has to follow including the max levels of certain contaminants and bacteria. I feel like this is good to know when we are looking at water quality reports and seeing which wells have worse contaminants and whether that correlates to the depth.

Weather Underground-Floyd Geology and Climate- the first source has information on the monthly averages of rainfall within 2020 and 2019 which is useful to know because the wells depend on surface water and groundwater. The second source is from Dr. Witiak on the geology of Floyd and the climate there. That source was very informative and has lots of graphs and maps of Floyd and its geology. This is how I knew what to search for similar counties to compare their economies and businesses. The second source also has information on rainfall and temperatures.