EAST MONTPELIER PLANNING COMMISSION
VILLAGE WASTEWATER: POTENTIAL OPTIONS FOR THE FUTURE
May 5, 2016

1. What kinds of village wastewater treatment opportunities exist now that were not available when the 2007 and 2008 Forcier & Aldrich wastewater studies were done?

Generally the same opportunities exist, there is just better technology. East Montpelier is still most likely going to need to explore multiple community on-site disposal systems or some other alternative that incorporates soil based remediation.

2. What examples exist of small villages implementing different types of wastewater treatment?
    a. Multiple small shared septic systems
    b. Larger shared septic systems
    c. Sewer system and community treatment unit/package plants
    d. Other

Three communities were discussed. These include Warren, Peacham, and Westford. All three examples were slightly different and ranged in size from 70+ connections (Warren Village) to one connection (Peacham café). In all cases, however, soil based remediation was utilized as the ultimate solution to address wastewater needs.

3. Which approaches seem to work best for villages seeking to grow?
    a. Which approaches seem to work best for keeping user fees manageable for the served properties?
    b. What types of administration and management arrangements have been used?
    c. How were the examples financed?
    d. Have towns (not just the service area) helped pay for the capital improvements for village systems?

The key in this instance is to ensure there is future capacity allocated within the identified solution. Growth may be slow, however expanding a system or getting permits for a new system may be difficult to obtain in the future. Building in capacity at the on-set will allow a community to react quicker when an identified use comes along that needs wastewater service.

4. What are the advantages and disadvantages between decentralized and centralized treatment systems?

None were specifically noted however is was indicated that no one currently works at the state that has gone through the permitting process for a new centralized system as none have been permitted in recent years.

5. What is the general scale (number of units, gallons per day, etc.) that are optimum for decentralized and centralized wastewater systems?

There is no real ideal size for decentralized and no real economies of scale that make it more economical to do a centralized or decentralized system. The primary factor for decentralized is having enough land to develop the system. The primary factor for centralized systems is getting permits for discharge. In either case, the upfront costs may be prohibitive to a community looking to serve a large area.

6. Can soil maps indicating suitability for septic be meaningfully used for planning purposes?
    a. How often are they significantly in error?
    b. What is the cost range of more accurate studies?
    c. Do unsuitable or marginal soils mean that wastewater disposal is impossible or just more expensive?

Soil maps can give you a place to start, but ultimately soil testing is the best way to ensure you have soils that can support the necessary wastewater infrastructure. In general, testing would cost approximately $80-$100 per hour for a backhoe and operator to dig the pits and then approximately $50-$100 per hour to have the testing done.

7. What types of advanced treatment systems have been permitted or can be permitted in Vermont (e.g., membrane bioreactors, sequential batch reactors, etc.)?

Limited direct discharge systems have been established in the past fifteen or so years. Cabot might be the newest system to be permitted. There have been limitations on funding available to design and construct such systems and the phosphorus and nitrogen limits from the Lake Champlain TMDL (Total Maximum Daily Load)

8. Is there a standard cost estimate that could be used for planning purposes to estimate the per foot costs of collection and conveyance infrastructure (including pump stations, manholes, rights-of-way, etc)?
    a. Does the cost differ for decentralized versus centralized systems?
    b. Are there different collection and conveyance infrastructure standards for decentralized versus centralized systems (e.g., pipe sizes, pump capacities, etc.)?

Generally the costs that are outlined in the 2007 and 2008 studies are fairly consistent with today's dollars for the cost of infrastructure. It's important to note that the costs of right-of-way or other land costs are not typically included in these estimates therefore current land values may inflate cost estimates.

9. For planning purposes, how many gallons per day are used to estimate an equivalent housing unit?

The 2007 and 2008 study indicate a need for approximately 31,000 gallons per day to serve the existing village area. The State of Vermont has a manual that is used for wastewater estimates based on specific uses. As an example, a restaurant or café is estimated at 45 gallons per day per seat.