

**Conference Call Summary of Discussion**  
**STEP SYSTEM OPERATIONAL QUESTIONS**  
**City of Lacey, Washington & Queen Anne's County Officials**  
**2:00 pm January 28, 2015**

City of Lacey Officials:

Peter Brooks, Water Resource Manager  
Terry Cargil, Water/Wastewater Supervisor  
Roger Dickinson, Senior Maintenance Technician

Queen Anne's County Officials:

James J. Moran, President County Commissioners  
Stephen Wilson, District 2  
Robert Charles Buckey, District 3  
Mark A. Anderson, District 4  
Gregg Todd, County Administrator  
Todd R. Mohn, Director Department of Public Works  
Alan Quimby, Chief Sanitary Engineer  
Steve Cohoon, Director Department of Planning and Zoning  
David MacGlashan, Chief Property Manager

**QAC Question 1**

Some of our local residents are still concerned that the STEP system technology is not the best choice for our project on South Kent Island. Our project is a septic tank abatement project which will ultimately connect about 1,500 existing and 560 new homes within nine established communities along a proposed 8-mile force main to our ENR wastewater treatment plant. We are proposing the STEP system technology to serve these properties. We have a responsibility to make sure this is the right choice for our situation and that it will work. We have researched your STEP system experience and experiences in the City of Olympia. Is our project too big for a STEP system ?

**Lacey Response 1**

Lacey has a combination of systems which include gravity sewers with lift stations and STEP systems.

Lacey uses gravity/lift sewers when topographical conditions make gravity sewers feasible to operate. So when feasible, we have found gravity sewers to be the best type and lowest cost collection system to use. We also have low areas around lakes or "bowls" which make gravity impossible to use. So we must use another mechanical system in these areas. STEP is our first option for these applications and we have found STEP to be the most practical when you do not have topo for gravity sewers.

Lacey has over 3,100 STEP system connections that have been put in place over that last 24-years. The longest single pump run is about 4-miles.

### **QAC Question 2**

Can all these STEP pumps (on SKI) pump all the way to our sanitary plant with no lift stations?

### **Lacey Response 2**

Yes

### **QAC Question 3**

Do you have problems with treatment of STEP effluent or odors?

### **Lacey Response 3**

No treatment problems. In our region we have a central water alliance treatment authority known as LOTT. STEP effluent is nitrogen heavy so they add methanol as a food source to balance this out. In Lacey, we discharge/mix STEP effluent into a conventional gravity system, this can create odor problems. In your case, you are pumping all the way to your treatment plant so you will not have this issue to worry about.

Also in your case, your never mixing STEP effluent with gravity so even better as it does not give it a chance for the smell to manifest by effluent being stagnant.

### **QAC Question 4**

Have you had problems with power outages causing sewage backup into houses? Do STEP systems have check valves to prevent backflow? Can sewer backup into a vacant home like when a family is away on vacation?

### **Lacey Response 4**

No we have not major problems with power outages. We had a power outage once that lasted 7-days and we only had 2 service calls

STEP systems do have check valves that prevent backups into both occupied and unoccupied homes. When people are on vacation there will be no water use so a backup would not be possible.

If STEP systems are in an area that use private wells for water, (like SKI) then the homeowner cannot flush/add more water into the tank until the power is restored. This also prevents any potential for backups.

### **QAC Question 5**

Have you had problems with backups in the main line?

### **Lacey Response 5**

Not possible unless a mainline valve is closed but it would trigger all of the individual alarms at the homes as all of the systems would then not be able to pump. If it were to happen it would be obvious and crews would respond to remedy.

Each resident is aware of the situation in the rare event of a major backup. The only thing a citizen would see is backup in their tub and we would be notified and out doing performing service. Routine inspections and maintenance is the key. The system must be designed to handle all of the pumps coming on at same time.

### **QAC Question 6**

What happens if you flush too much household stuff down the toilet? How do you deal with a tank issue? What is your threshold of tolerance?

### **Lacey Response 6**

We use education to make sure our customers know how to use the system. If they are on septic tank systems now it really isn't different at all with a STEP system. We do not charge extra for extra service call out trips. Most users get service every once every 7-years, there are some special cases however that get service every year. Everyone still gets the same yearly charge though.

### **QAC Question 7**

Tell us about the manpower needed to handle and clean the STEP tanks. Is STEP costly to operate?

### **Lacey Response 7**

When we respond we take two trucks (and 2 men) but all of the components can be lifted out by one person. Lacey does all of the work in house and does not contract anything out. We went from a reactive to a proactive maintenance approach to managing STEP systems as opposed to Olympia. We take ownership over our systems. We have over 3,100 tanks with 2 operators that maintain those tanks. These 2 operators could manage up to 6,000 units. Homeowner education and a proactive approach to maintenance saves time and labor costs. We have found STEP operational cost to be competitive with gravity sewer costs.

### **QAC Question 8**

Is there anything that we have described about our SKI STEP project that would make Lacey concerned about our use of the proposed STEP system?

### **Lacey Response 8**

None.

Note: This conference call was advertised on the County Commissioners January 27<sup>th</sup> agenda