
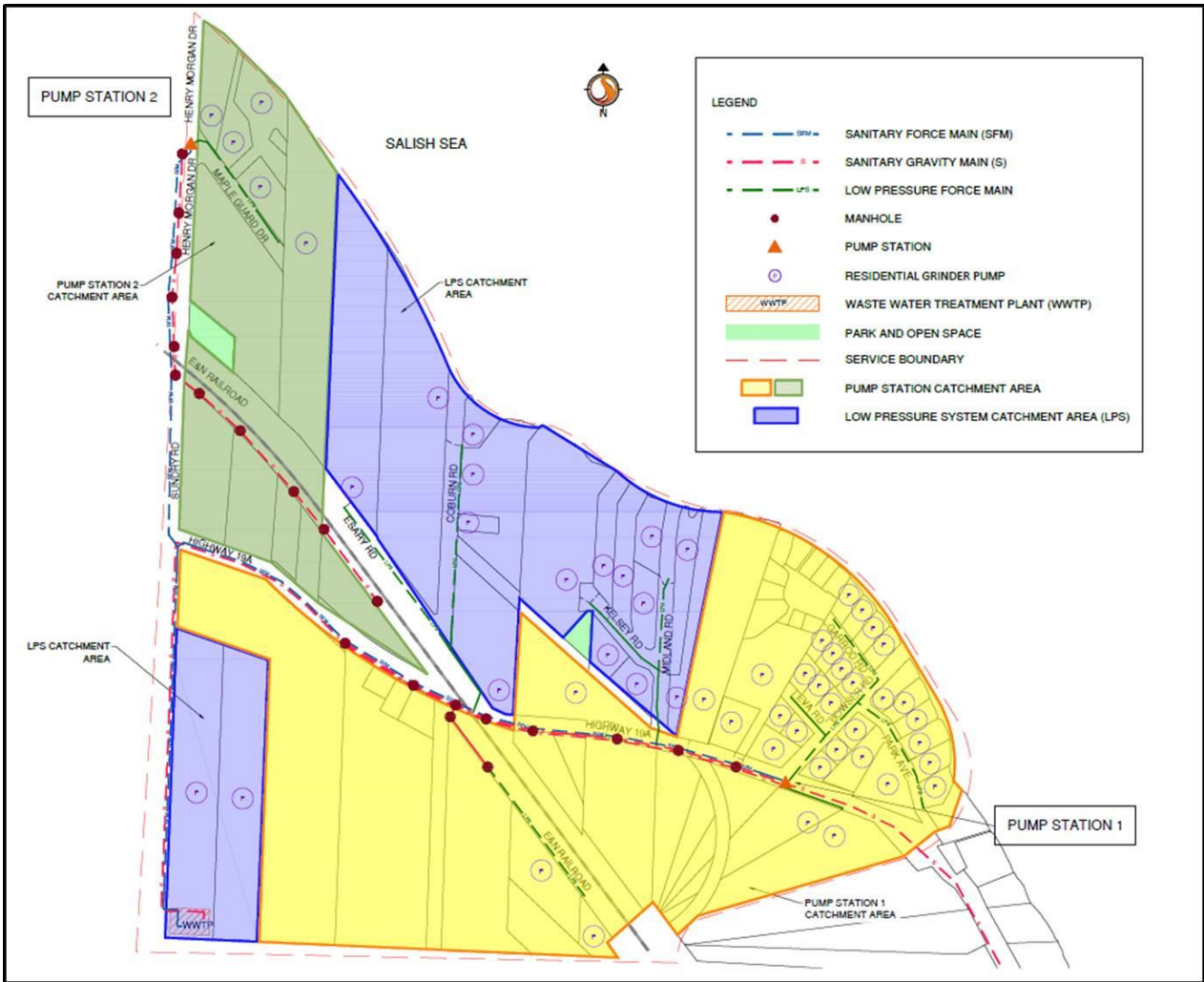


Responses to questions asked by residents about the Bowser wastewater collection system design, including the Low Pressure System and on-site grinder pumps. This information was provided by Stantec Engineers.

<b>Q1</b>	<b>What is a Low Pressure System?</b>
R1	<p>Low Pressure Systems are built in areas that cannot be serviced by traditional gravity sanitary sewer systems and when local factors prevent the building of a community pump station at a reasonable cost. Each property in the Low Pressure System requires an on-site grinder pump package. Wastewater from the home or building enters this unit by gravity flow, and is then pumped to a low pressure sanitary sewer forcemain, typically located in the road right-of-way. This forcemain carries the wastewater under pressure to a gravity sanitary sewer main, where it continues its journey to the treatment plant.</p>
<b>Q2</b>	<b>Why is a Low Pressure System required for parts of the Bowser wastewater collection system?</b>
R2	<p>The topography of the Bowser area means that some areas cannot be serviced by a gravity system alone. In addition to this, proximity to coastal areas, the presence of several archaeological sites along the foreshore, and other factors make the construction of community pump stations challenging and expensive in some parts of the proposed service area. A Low Pressure System offers a more cost-effective wastewater collection solution, given these local challenges.</p>
<b>Q3</b>	<b>What is a grinder pump?</b>
R3	<p>A grinder pump is a self-contained unit which grinds solids in household wastewater and then pumps the wastewater to a community sewer system. Grinder pumps are installed in the yard of your home and are used in areas where gravity collection is not feasible.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin-left: 20px;"> <p><i>Examples of a typical residential on-site grinder pump package</i></p> </div> </div> <p><small>Source: <a href="http://www.eone.com/sewer-systems/regions/us/product-catalog/grinder-pumps/d.html">http://www.eone.com/sewer-systems/regions/us/product-catalog/grinder-pumps/d.html</a></small></p>

Q4	What will it look like in my yard?
R4	<p>The pump package will be buried, with only a small access cover visible at the surface. Access covers are typically made of plastic and designed to blend in with the surrounding landscape.</p> <div> </div> <p><i>Example of a typical grinder pump access cover in yard</i></p> <p><i>Source: <a href="http://www.eone.com/sewer-systems/regions/us/homeowners.html">http://www.eone.com/sewer-systems/regions/us/homeowners.html</a></i></p>
Q5	Can I install the pump within my existing septic tank?
R5	<p>The type of grinder pump package to be supplied is not designed to be installed in an existing septic tank.</p> <p>Installing a grinder pump inside an existing septic tank is possible, but it would be necessary to design and build a small pump station to sit inside the tank for the pump and controls, which would likely be more expensive than the cost to install the supplied pump package.</p>

Q6	How many properties in the proposed service area will require grinder pump packages? How do I know if my property is one of them?
R6	<p>A total of 55 properties will require an on-site grinder pump.</p> <p>The properties indicated with a <b>P</b> on the map below require grinder pumps.</p>



*Proposed Bowser Sewer Service Area: Properties requiring grinder pumps*

Q7	<b>I own a property that will require a grinder pump. What components of the system will the RDN be responsible for? Will I be responsible for any system components?</b>
R7	<p>The initial pumps will be purchased by the RDN. Installation costs, including tie in to the RDN sewer at the property line will be paid for by individual property owners. Property owners will be responsible for arranging for installation. The cost of installation may vary depending upon factors such as depth of sewer service, location of the connection, location and size of the septic tank to be decommissioned, and ground and site conditions (large trees, bedrock, retaining walls, etc.). However, a typical installation can cost between \$1,000 and \$5,000.</p> <p>After installation, property owners will be responsible for operation and maintenance of pumps, pipes, and all related components located on their property.</p> <p>Please refer to the <a href="#">Work on Private Property FAQ</a> for more information.</p>
Q8	<b>What are the power requirements for a grinder pump? How much will the electricity cost me per year?</b>
R8	<p>Typical grinder pump models have power requirements of 240 or 120 volts, and usually require a low starting amperage not exceeding 30 amps.</p> <p>It is anticipated that a household that uses 250 Gallons (950 Litres) of water per day should use less than 12 kilowatt hours per month to run the pump, which translates to an estimated \$13 per year, based on current hydro rates.</p>
Q9	<b>What happens in the event of a power outage? Could a generator be hooked up to the grinder pump during a long outage?</b>
R9	<p>A grinder pump is powered by electricity and will not function during a power outage. The pump chamber will generally have some additional “emergency” capacity, but in order to prevent waste from backing up into the lowest sink, tub, or toilet in your home, it is recommended that you significantly limit the interior use of water until power is restored. This means do not shower or wash dishes or laundry and limit flushing the toilet.</p> <p>Typically, these pumps are equipped with a high level alarm to notify the homeowner, and some units feature a manual power connection to allow connection to a generator in the event of a long term power outage. Grinder pump systems include backflow preventer valves.</p>

<b>Q10</b>	<b>What is the emergency capacity of a grinder pump? Is there any way to increase this capacity?</b>
R10	The additional capacity available in the pump chamber will depend on the size of the pump package, and the water usage of the home that it serves. The capacity of the pump chamber can be increased, however bigger units are associated with higher costs and possible odour issues. Depending on pumping cycles, it is possible that the larger tank could be close to full when a power outage occurs, defeating the purpose of the larger tank.
<b>Q11</b>	<b>Will different pumps be required for different properties depending on the property's elevation and distance from the sewer main?</b>
R11	It is not anticipated that different pump models will be required for different properties, as residential grinder pumps are typically capable of handling the varied topography within the proposed sewer service area. Properties generating larger flows (ie. more than 1 residential unit), may require a larger pump chamber or second pump. If there are any properties requiring such arrangements, they will be determined and confirmed during detailed design.
<b>Q12</b>	<b>How long do grinder pumps last? How much will it cost me to replace the pump when it reaches the end of its life?</b>
R12	Grinder pumps typically last around 10 years before requiring significant repairs or replacement. The cost to replace will depend on the model chosen, but currently ranges between \$2,500 to \$3,000 dollars for a complete replacement. Replacement of grinder pumps will be the responsibility of the property owner.
<b>Q13</b>	<b>How much annual maintenance do the pumps need and how much will it cost me?</b>
R13	Annual maintenance needs will depend on the pump model chosen. Annual maintenance for residential grinder pumps typically involves inspection of the pump and sharpening of the grinder blades.
<b>Q14</b>	<b>Are grinder pumps noisy?</b>
R14	Grinder pumps come in an enclosed unit that is buried in the yard. As such, at a distance, you should not hear the pump at all. If you are standing directly above the tank's access hatch, it may sound like the muffled hum of a dishwasher.
<b>Q15</b>	<b>Will I be able to smell my grinder pump?</b>
R15	Potential for odours is minimized by the short wastewater retention time typical of most grinder pump models.



<b>Q16</b>	<b>What kinds of safety features are there to keep sewage from backing up into my home?</b>
R16	<p>Pump packages will have check valves installed within the chamber so that sewage cannot work its way back into the pump chamber once pumped out. In addition, a second check valve will be installed by the RDN to prevent community sewage from backing up into your property.</p> <p>A high level alarm within the chamber tank will notify the homeowner that the pump chamber is full in the event of a malfunction. The alarm may be visual, audible, or both depending on the pump model chosen.</p>
<b>Q17</b>	<b>Why isn't annual maintenance of on-site grinder pumps covered by the annual operation and maintenance fees charged to run the system?</b>
Q18	<p>The RDN does not install or maintain works on private property. Installation, maintenance and replacement of grinder pump units will be the responsibility of the property owner.</p> <p>Please refer to the <a href="#">Work on Private Property FAQ</a> for more information.</p>
<b>Q19</b>	<b>What if there is a technical problem with the grinder pump unit provided by the RDN? Will there be a warranty on the pumps?</b>
Q19	The grinder pump units will come with a manufacturer's warranty. The specifics and duration of the warranty package will depend on the pump unit selected.

**For project information, contact:**

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