

Goal: Looking for backup biosolids dewatering solution at WRF #2. Unit shall be placed on second floor of Dewatering Building and be used only when centrifuge is down for repairs.

Rotary Fan Press

Lower capital cost - **Correct**

Fewer moving wear parts so less maintenance costs

- ***This depends on which screw press you are comparing the fan press against. Some screw press brands have multiple moving parts while others (FKC) do not have any wear items.***

Smaller footprint - **Correct**

Lower throughput volume – **See below**

Newer technology - **Correct**

10-15 m³/hr = \$ 30,000 to \$ 100,000 equipment only. \$ 150-400K full installation.

- ***Price and expected throughput will depend on the make/model selected which is dependent on the available footprint and allowable weight of the second floor of the dewatering building. Once this information is provided, we can help coordinate with vendors to specify the best unit and confirm pricing and expected throughput.***

Screw Press

Higher energy use – **Dependent on selected make/model**

Higher capital cost – **Correct**

Screw and screens can wear

- ***This varies by unit. Some screw press brands have multiple moving parts while others (FKC) do not have any wear items.***

Larger footprint - **Correct**

Higher throughput volume – **See below**

Established technology - **Correct**

10-15 m³/hr = \$ 50,000 to \$ 150,000 equipment only. \$ 500,000 + full installation

- ***Price and expected throughput will depend on the make/model selected which is dependent on the available footprint and allowable weight of the second floor of the dewatering building. Once this information is provided, we can help coordinate with vendors to specify the best unit and confirm pricing and expected throughput.***

Similarities

- Similar energy costs but with rotary fan using slightly less energy
- Similar solids capture rates
- Both use polymer
- Both are quiet

Due to lower initial capital cost and smaller footprint, the Rotary Fan Press is the preferred option. This will not be the primary dewatering option.

- ***The rotary fan press and screw press both are low energy dewatering technologies with similar cake dewatering performance. The screw press is an established dewatering technology with a higher capital cost and larger footprint. Operation of the screw press is simple, and maintenance requirements vary between different manufacturers.***
- ***The rotary fan press is a newer technology with a lower capital cost and smaller footprint. We recommend requesting a list of current installations from the rotary fan press manufacturer of choice. It would benefit the City to discuss the performance and required maintenance of the rotary fan press with operators actively utilizing the technology since it is a more recent dewatering technology.***
- ***The selected backup dewatering technology at WRF 2 must be located on the second story of the dewatering building and not exceed the weight limitations of the structure.***
- ***The rotary fan press is an appropriate alternative to the screw press and, due to its compact footprint, is a good option for the City.***

Comparison table between Screw Press and Rotary Fan Press:

Feature	Screw Press	Rotary Fan Press
Energy Consumption	Low (but slightly higher than rotary fan)	Extremely low
Solids Capture Rate	High (>95%)	High (>95%)
Footprint	Compact	Very compact
Noise Level	Low	Very low
Throughput Capacity	Moderate to high (better for larger plants)	Low to moderate (best for small/medium plants)
Polymer Requirement	Yes	Yes
Maintenance	Moderate (screw and screens wear)	Low (fewer moving parts)
Sludge Type Tolerance	Handles oily/greasy sludge well	Best for standard sludge; less tolerant of oily/fibrous sludge
Market Adoption	Well-established, widely supported	Newer technology, fewer installations
Capital Cost	Higher initial cost	Moderate