



BOROUGH OF TARENTUM

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MEMORANDUM

TO: Borough Council, Mayor, Acting Water Plant Manager

FROM: Dwight Boddorf, Borough Manager

DATE: January 21, 2026

RE: Spray Park Operating Hours – Water System Capacity, Operational Impacts, and Recommendations

This memo provides a consolidated explanation of the water system constraints identified by the Water Treatment Plant, clarifies what plant “capacity” means under current operations, evaluates potential spray park operating-hour adjustments, and recommends a balanced, temporary approach that supports both system stability and community access while longer-term infrastructure improvements are underway.

Background

The Water Treatment Plant has documented (see attachment) that spray park operations contribute to peak-period water demand during the summer months. In 2025, total spray park usage was approximately 996,000 gallons, equivalent to nearly one full day of typical plant production.

During peak summer conditions, operators report difficulty fully recovering tank levels by the end of the operating day. On the highest-demand days, tank levels can end the night approximately **90,000 gallons short of the “full” threshold**, reducing operational margin and straining the system.

As an interim measure, the plant has recommended reducing the spray park's operating hours until additional storage capacity becomes available.

Planned Infrastructure Improvement

The Borough is already taking steps to address this issue structurally.

A **new 1-million-gallon water storage tank** is currently in planning and early development and is expected to be installed **within the next two years or less**. Once operational, this tank will significantly improve:

- Overall system storage
- Nightly recovery capability
- Operational flexibility during peak demand
- Resiliency during high-use summer periods

The spray park hour adjustment discussed in this memo is therefore intended to be **temporary**, bridging the gap until this additional storage is online.

Understanding Plant Capacity

The Water Treatment Plant is **rated for up to 2.0 million gallons per day (MGD)**. This rating represents a **theoretical maximum**, assuming the plant operates continuously for 24 hours a day under ideal conditions.

That is not how Tarentum operates.

Current Operating Model

- Two shifts per day
- Operating hours: **6:00 AM – 10:00 PM**
- **16 hours of active production**
- The Borough is **not returning to a three-shift, 24-hour operation**

Absolute Ceiling Under Two-Shift Operations

- $2,000,000 \text{ gallons} \div 24 \text{ hours} \approx \mathbf{83,000 \text{ gallons per hour}}$
- $83,000 \text{ gallons/hour} \times 16 \text{ hours} \approx \mathbf{1.33 \text{ million gallons per day}}$

1.33 MGD is the absolute theoretical ceiling under a two-shift model, assuming uninterrupted, perfect operation.

Why the Plant Intentionally Operates Below the Theoretical Maximum

In practice, the plant typically produces **~950,000–1,000,000 gallons per day**. This is intentional and appropriate to maintain system stability and account for:

- Filter backwashing cycles
- Routine maintenance and equipment protection
- Operator workload and safety
- Process control and water quality requirements
- Allowing tanks to recover rather than constantly chasing demand

Operating continuously at or near the absolute ceiling would reduce reliability, increase wear on equipment, and leave little margin for unexpected demand spikes or system issues.

The plant is not underperforming; it is being operated responsibly.

The Real Operational Challenge

Under the current operating model, the plant is:

- Compressing production into a 16-hour window
- Fighting peak daytime demand
- Trying to recover tank levels before shutdown
- Avoiding running the plant at its edge every day

In this context, when water is used, total daily volume matters less than **when** water is used.

Spray Park Usage Context

- Current spray park hours: 10:00 AM – 8:00 PM (10 hours/day)
- Peak-month usage (August): ~11,740 gallons/day
- Approximate hourly draw during operation: ~1,174 gallons/hour (~20 gpm)

While modest relative to total system volume, this demand occurs **during the most constrained operating window**.

Operating Hour Options and Impacts

The following options reduce spray park hours, thereby reducing peak-period demand. Gallon savings shown reflect peak August conditions.

Option A – 12:00 PM to 6:00 PM

- Hours reduced: 4
- Water saved: ~4,696 gallons/day

Operational impact:

Provides the greatest peak-demand relief and additional recovery time for operators.

Community impact:

Eliminates late-morning access used by younger children and daycare groups and concentrates use during hotter afternoon hours, making this option more difficult to defend publicly.

Option B – 11:00 AM to 7:00 PM

- Hours reduced: 2
- Water saved: ~2,348 gallons/day

Operational impact:

Provides modest relief but the smallest reduction in peak demand.

Community impact:

Maintains more afternoon access but still limits late-morning use and extends into higher evening demand.

Option C – 11:00 AM to 6:00 PM (Recommended)

- Hours reduced: 3
- Water saved: ~3,522 gallons/day

Operational impact:

Meaningfully reduces peak-day demand, improves stability during the most constrained hours, and provides operators with additional margin without pushing the plant toward its operational limits.

Community impact:

Preserves late-morning access for younger children and daycare groups while still reducing system strain. This option balances operational necessity with equitable community access.

What This Change Does, and Does Not, Do

Removing 3,000–4,700 gallons per day during peak hours:

- **Does not “solve capacity”**
- **Does not guarantee tanks reach full every night**

However, it **does**:

- Reduce stress at the exact time operators are most constrained
- Improve tank recovery potential later in the day
- Lower the likelihood of multiple stressors stacking (heat, industrial demand, routine use)
- Serve as a **temporary risk-reduction and stabilization measure** until additional storage is installed

Recommendation

Option C (11:00 AM – 6:00 PM) is recommended.

It:

- Provides meaningful operational relief
- Supports plant operators during peak demand
- Preserves access for younger children and families
- Is more defensible publicly than a noon opening
- Clearly aligns with the Borough's planned 1-million-gallon storage tank, which is expected to resolve many of these constraints once completed

Spray park hours should be reevaluated once the new tank is operational.

Next Steps

If Council concurs, staff recommends adopting Option C for the upcoming season and communicating the change as a **temporary, data-driven adjustment** tied directly to system reliability and upcoming infrastructure improvements.

Thank you,

Dwight Boddorf,
Borough Manager