

Summary

Arlington's **Water Pollution Control Plant (WPCP)** serves the County's 203,000 residents (279,000 daytime population). The plant's overall mission is to **protect and preserve the environment** -- especially the **Chesapeake Bay** -- while processing the County's wastewater.

Originally built in the 1930's and opened in 1937, the plant is inadequate for Arlington's growing needs. The County's **\$568 million upgrade** will address **aging infrastructure** and a number of critical issues, including capacity, environmental protection, regulatory requirements, and **odor**. The expansion will increase capacity from 30 million gallons/day to 40 million.

Reducing construction noise

- The **pile driving noise** is a challenge we began to address during the design phase before construction began. Results from soil studies and tests determined that approximately **2,800 piles are required** to construct the buildings and facility structures. Approximately 2,300 of those piles need to be large "friction H" piles and must be driven to a depth of approximately 100 feet, due to the underlying soil structure.
- The County has budgeted \$700,000 to lessen the noise. Steps already taken include:
 - Hired a qualified **acoustical engineering consultant** to develop noise mitigating solutions.
 - Installed **sound absorbing blankets** along the south wall of the excavation, to reduce the amount of noise reflected back into the neighborhood. **Decibel readings have decreased** by approximately 5–8 decibels.
 - **Restricted work time**; pile driving is allowed from 7:00 a.m. to 7:00 p.m., Monday-Friday (County holidays excluded).
 - **Installed monitors** -- six noise monitors and five vibration monitors continuously record noise and seismic levels. Results indicate that decibel readings exceed **County noise ordinance limits** about **0.2 percent of the time** during construction hours. Interestingly, at night and on weekends, when there is no pile driving, decibel readings are above the maximum limit approximately 0.1 percent of the time (helicopters, motorcycles, lawnmowers, leaf blowers, etc.).
 - **Installed a noise-reducing pad** on top of the pile – using stacked plywood, which is successfully used when installing reinforced concrete piles. Unfortunately, the greater force required to drive the H-piles destroyed the pads and this initial attempt failed. An improved device is now being fabricated (see below).
- Additional solutions we are working on:
 - Working with the manufacturer of the pile driving hammers to help analyze several proposed **noise reduction strategies**.
 - Installing **more noise absorption blankets** along the large concrete wall on the east end of the excavation; scheduled for delivery approximately June 22. We also are evaluating where else blankets might help reduce noise levels.
 - Installing **noise blankets on two sides** of the pile driver leads.
 - Installing a **"hairpin" device** that fits on top of the pile to disperse the impact across a larger surface and allow for another **impact noise pad** to be tested. The hairpin is scheduled for delivery mid-July. The challenge is to find a material that reduces the impact noise without significantly reducing the energy of the hammer.

Arlington's \$568 million plant upgrade will increase capacity, improve odor and protect the Chesapeake Bay.

- Testing **dampening devices** (tires) along the sides of piles to **reduce the ringing noise** that accompanies the noise from impact. In the first tests, the tires fell off. We are making a new suspension system to resume the tests.
- Continuing to address the challenge of designing a **noise shroud around the pile driving hammer** while addressing related safety and operational challenges.
- Determining the technical feasibility and availability of a **large hydraulic impact hammer**.

Addressing odor problems

- Odors at the plant were very bad the end of May and beginning of June. The plant held solids in its **biological treatment process** longer than normal in order to **prevent a violation of its nitrogen discharge limit** for the month of May. The increased inventory of “old” sludge created a septic scum blanket on secondary clarifiers, which produced very bad odors.
- The plant began **cleaning the solids out of the biological process** on June 1. Within a few days, the odors were gone. This was the worst odor incident the plant has experienced in the past few years.
- **Improved nitrogen removal** will be achieved when construction is complete and will help prevent a recurrence. However, due to the construction, the plant faces additional challenges and may experience similar situations until it is completed.

Timetables

- The construction is scheduled to be completed before **January 1, 2012**.
- The **pile driving** schedule will continue through January, 2008. Pile driving is scheduled to resume in 2009 during February–March, August–September, and October–November.

Learn more

- Please join us for a **Citizens Liaison Meeting**, scheduled at the plant on **Saturday, June 23 at 1:00 pm**. We will provide updates on pile driving noise, odors, traffic, and other issues relating to the construction. Residents in Aurora Highlands and Arlington Ridge civic associations were invited via the 4D-A listserv and invitations were mailed to all residences south of Fort Scott Drive.
- For **updated information** on the project, visit the special WPCP construction website (<http://projects.jmt.com/arlington/>) on the County’s website, www.arlingtonva.us/des.
- You can also sign up on the County website to receive **regular email updates** about the project. Go to www.arlingtonva.us; see “email subscriptions” on the left navigation bar (or click on this link <http://www.arlingtonva.us/subscriptions/subscribe.htm?lnsLinkID=1230>).
- Arlington County’s **project contact** is Phil Loar, 703-599-1549, ploar@arlingtonva.us.