

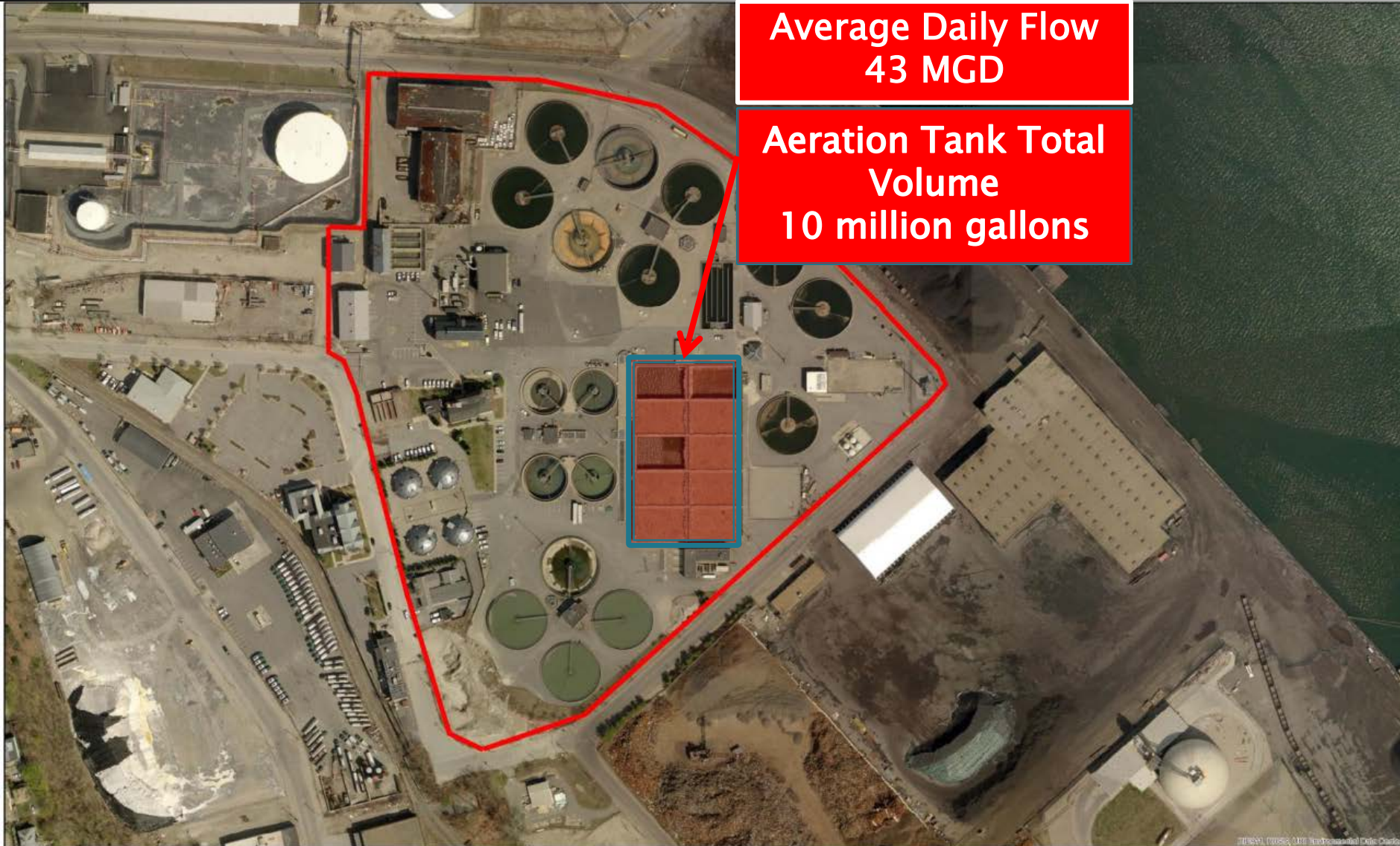


BNR Construction Update

FIELD'S POINT WWTF

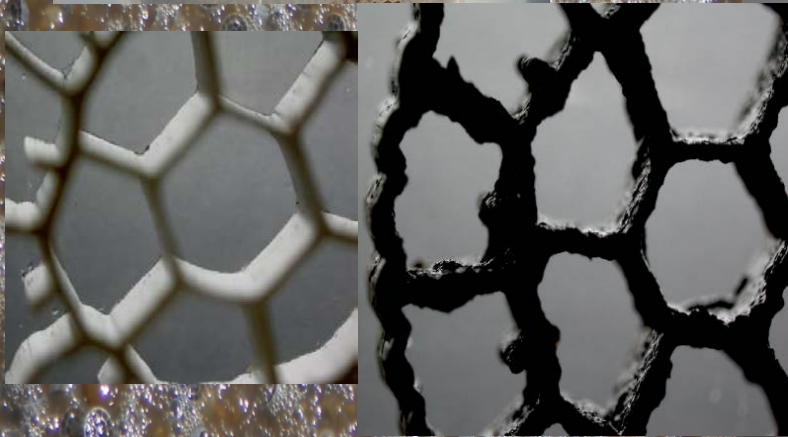
Average Daily Flow
43 MGD

Aeration Tank Total
Volume
10 million gallons

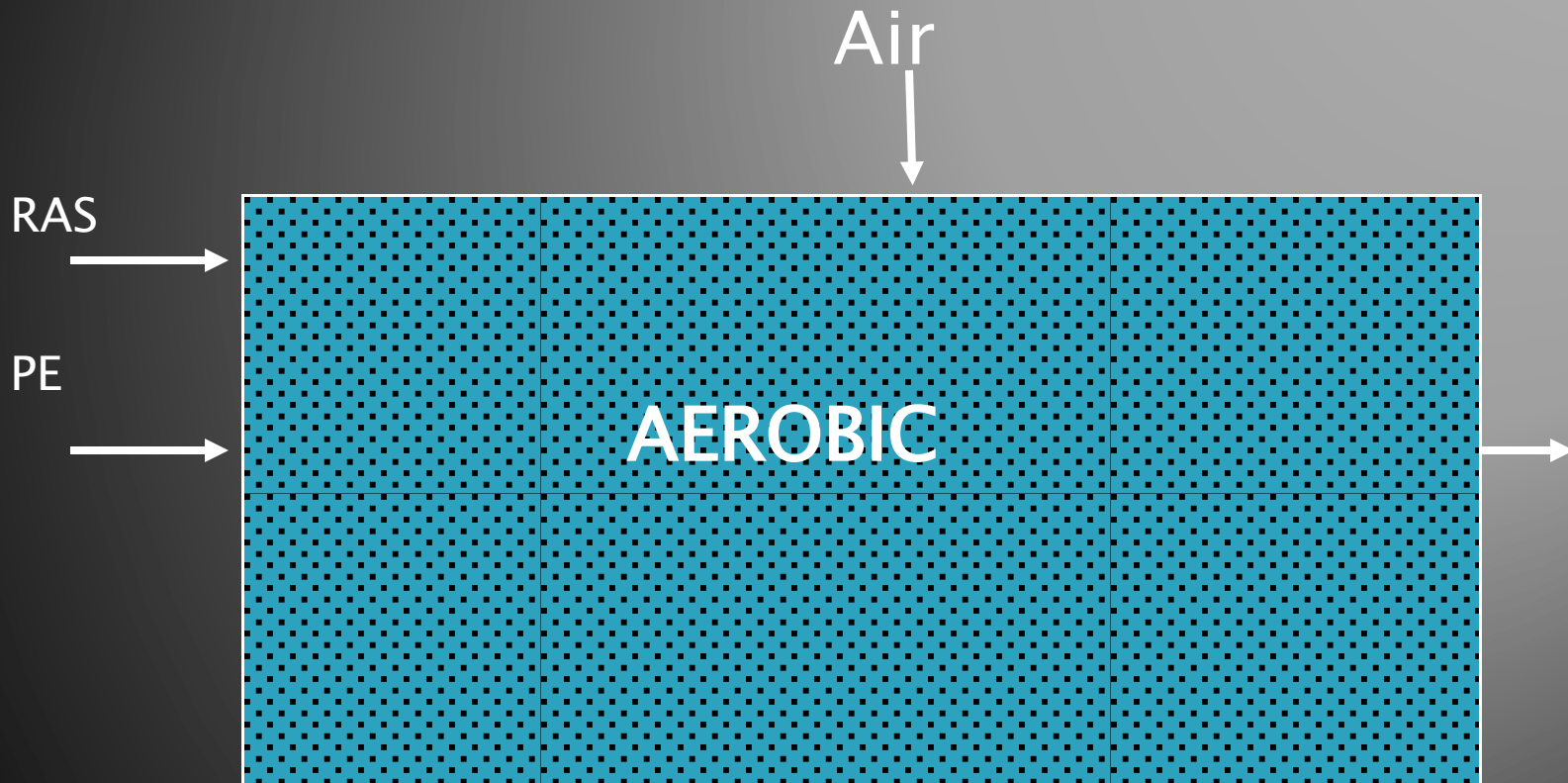


Field's Point POTW– Biological Nutrient Removal Upgrade for Total Nitrogen

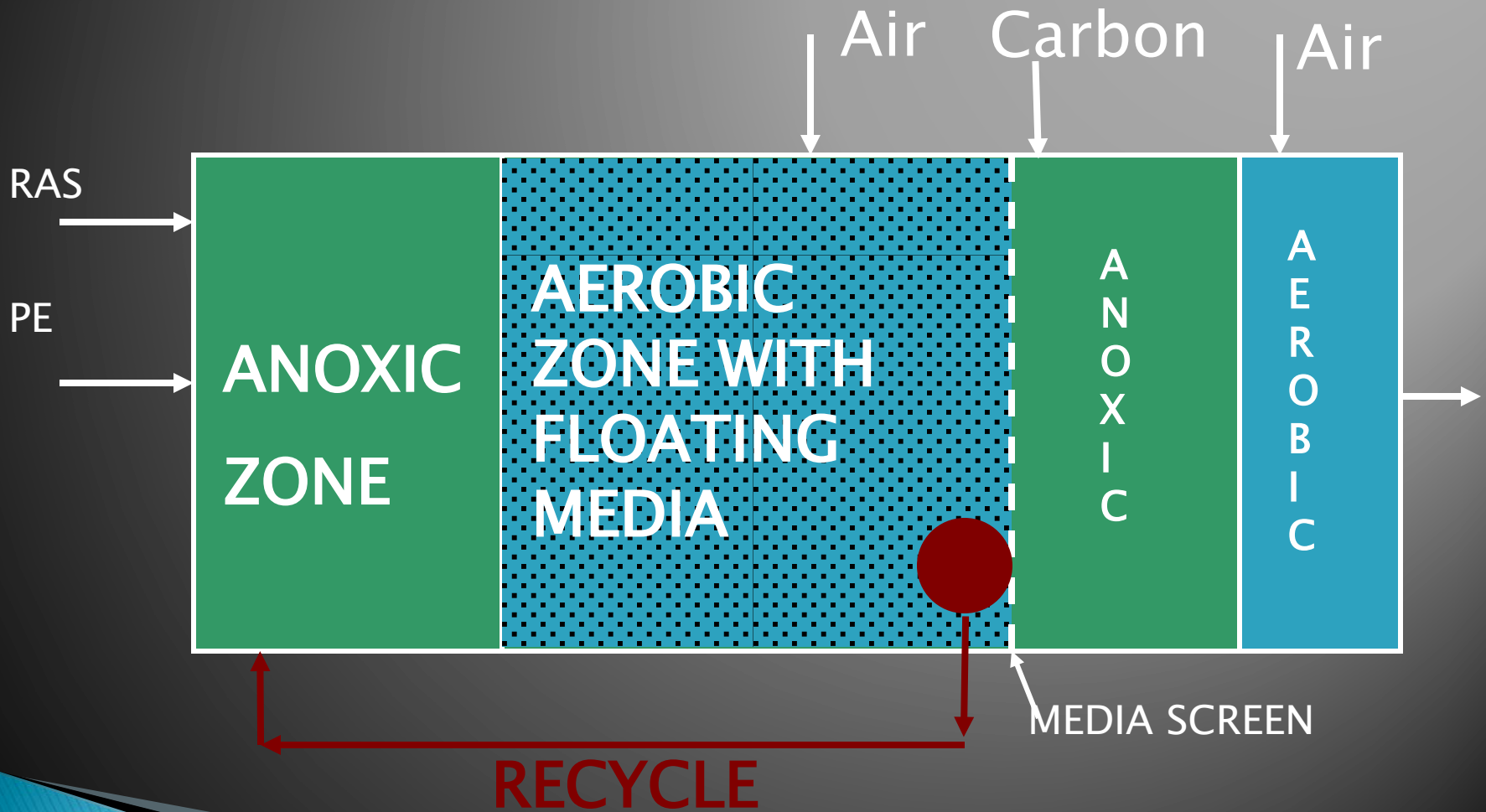
- Will use IFAS system to meet 5 ppm TN – Largest IFAS Plant in World!
- Cost – ~\$31 million



COMPLETE MIX AERATION



FOUR STAGE PROCESS WITH FLOATING MEDIA



Re-design of aeration tanks at Field's Point



Aeration tank filled with Biological Nutrient Removal IFAS media

FIELD'S POINT WWTF

- Construction Ongoing
 - Began September 2009
- IFAS Performance Testing Complete
 - April/May 2013
- Initiation of Operation
 - December 2013

FIELD'S POINT WWTF

- Effluent TN
 - Before IFAS System (2004–2011)
 - 13.3 ppm 4559 lbs/day
 - During IFAS Implementation (2012)
 - 7.6 ppm 2627 lbs/day (42% reduction)
 - All IFAS Tanks On-Line (Performance Test Period April/May 2013)
 - 4.0 ppm 1349 lbs/day (70% reduction)

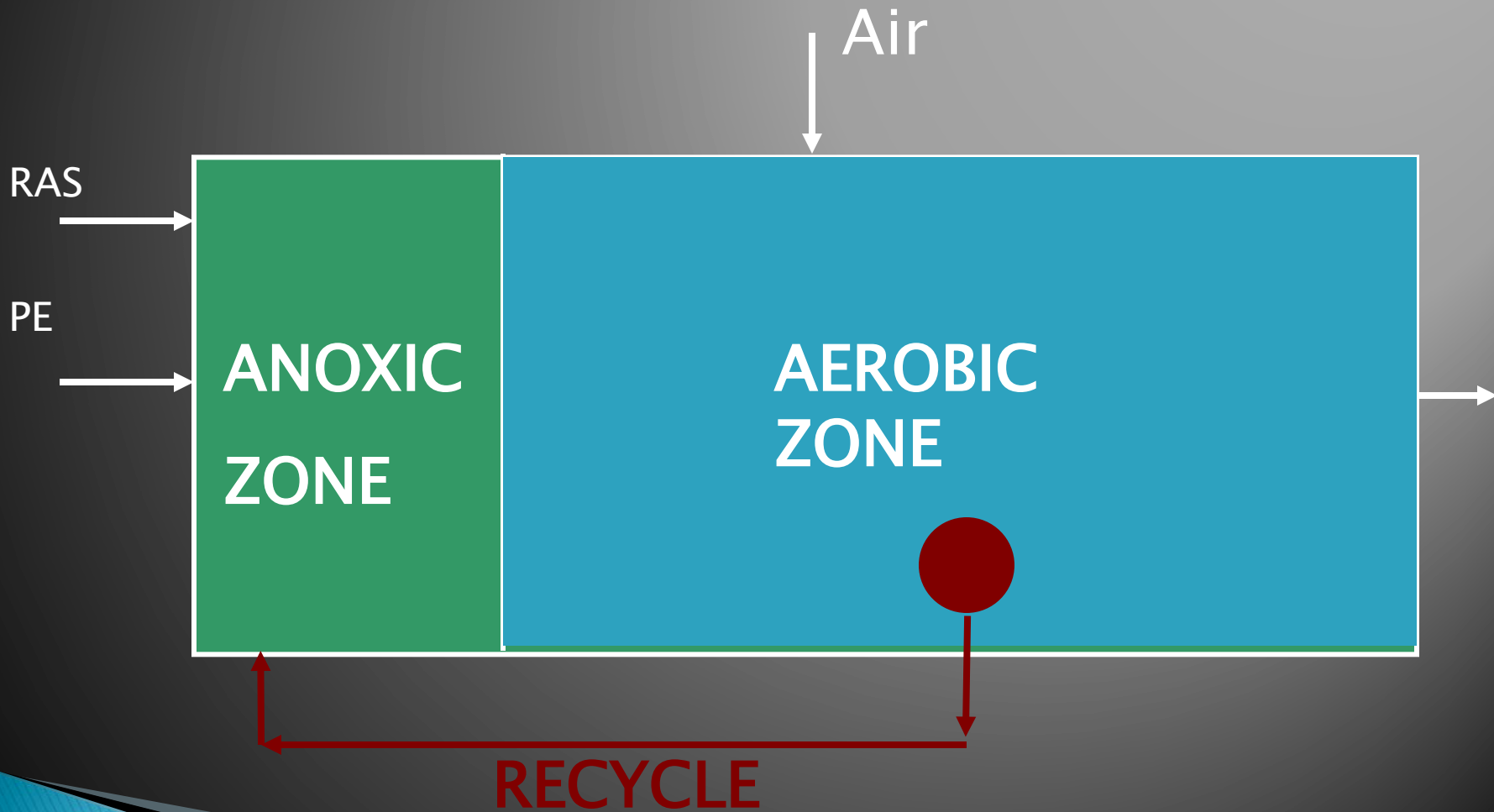
BUCKLIN POINT WWTF



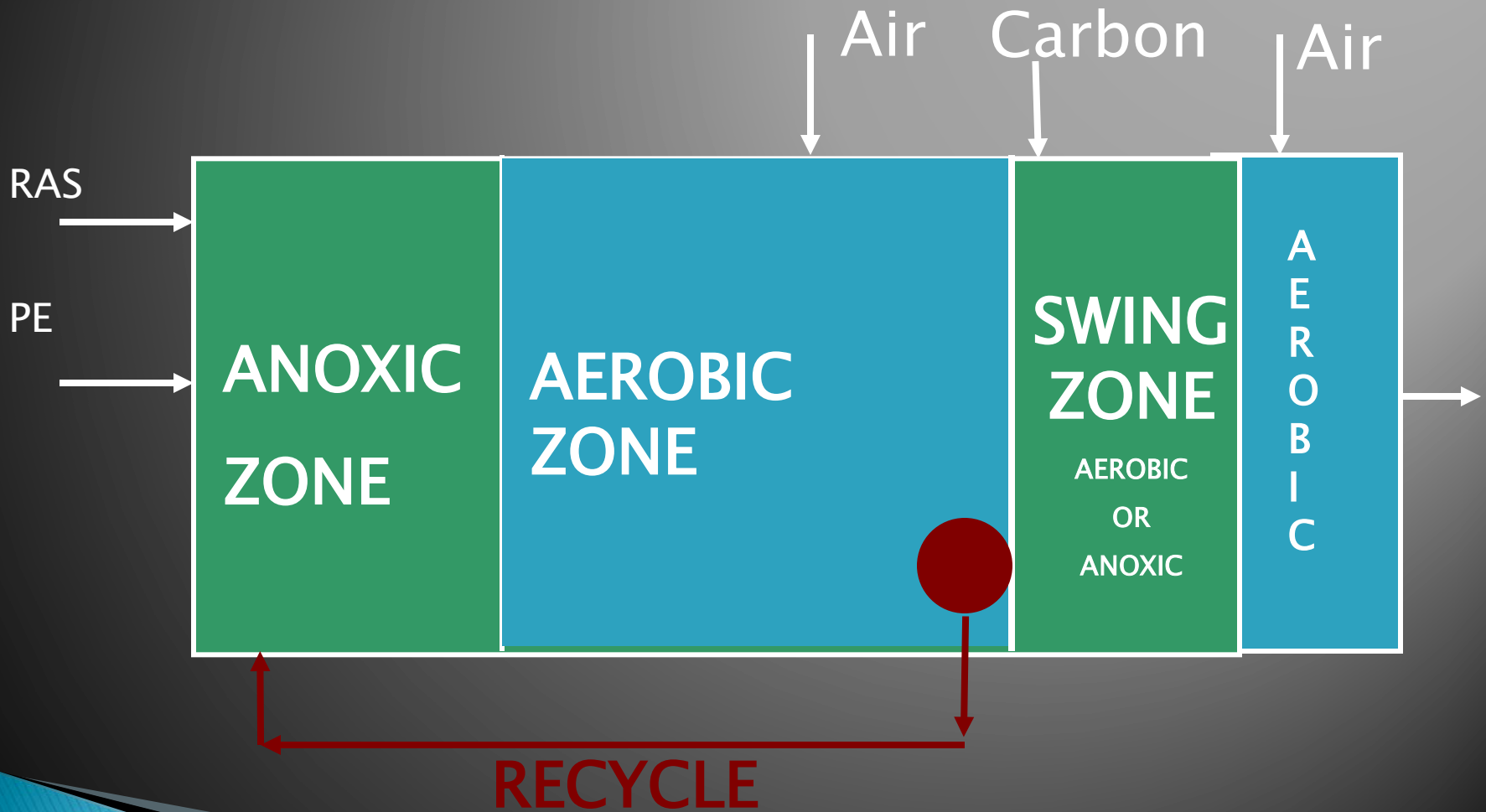
**Average Daily Flow
22 MGD**

**Aeration Tank Total
Volume
11.3 Million Gallons**

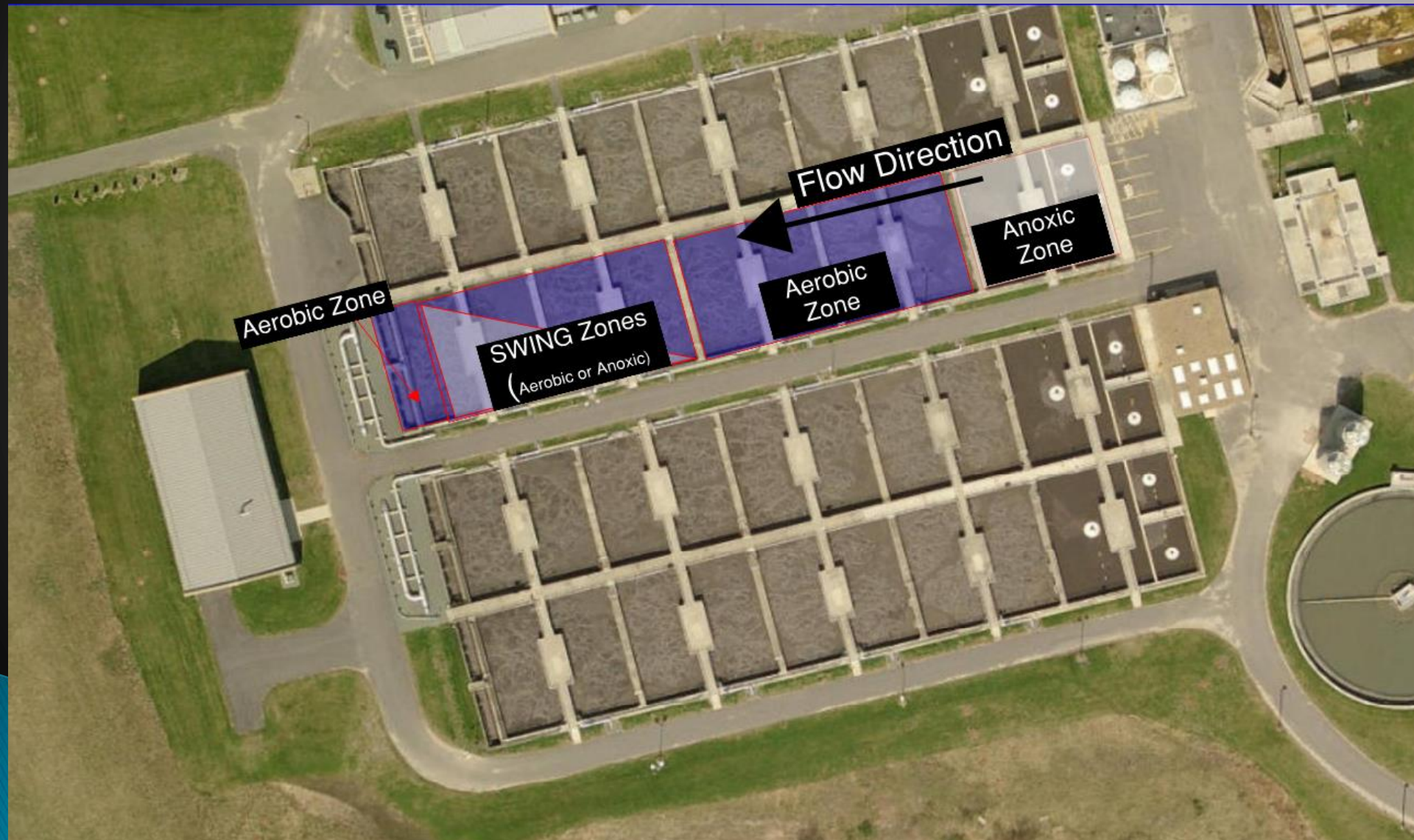
BUCKLIN POINT WWTF TWO STAGE PROCESS (MLE)



BUCKLIN POINT WWTF FOUR STAGE PROCESS



BUCKLIN POINT FOUR STAGE PROCESS



BUCKLIN POINT WWTF

Construction Began January 2012
Scheduled Completion – March 2014

Biological Nutrient Removal Upgrades – Total Nitrogen (TN) – Bucklin Point



➤ Before 2005

- 12.6 ppm 2444 lbs/day

➤ 2005 / 2006

- \$8.3 million upgrade to MLE

➤ 2012

- 6.4 ppm 964 lbs/day (61%)

➤ CURRENT

- \$13 million (estimate)
Upgrade to 5 ppm TN
- (69% estimated)