



Over 50 Years of Public Service  
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# 2011 CEAM AWARDS



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# *Nominations*

## Small County Projects \$500,000 or less

**Pinecliff Park Stream Restoration - Frederick County**

**Pilot Pond Program – Prince George’s County**

**Storm Operations Map – Montgomery County**

**Olympian Park – Baltimore County**



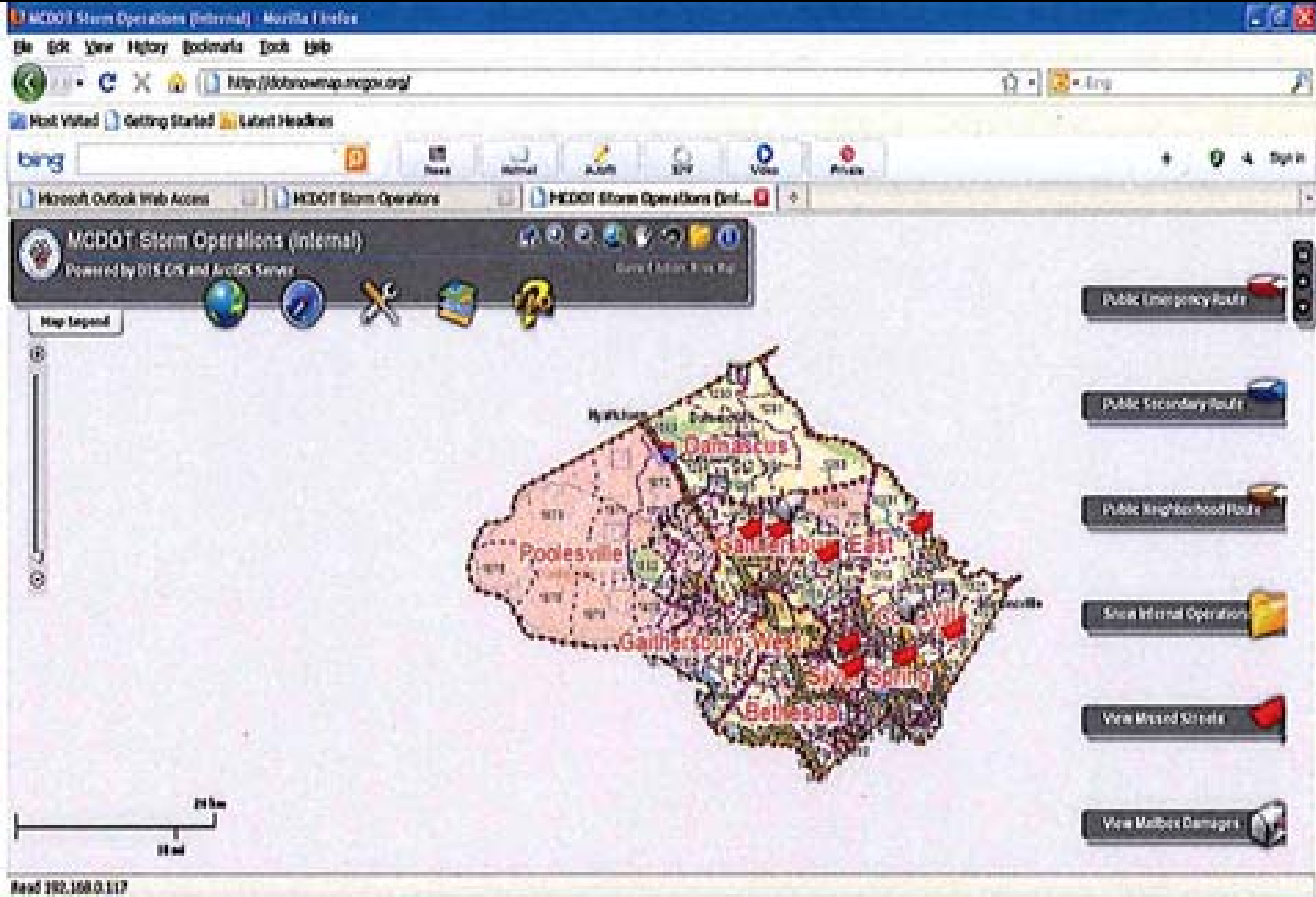
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# County Project Of The Year

## Storm Operations Map

### Montgomery County



**Figure 9 – Internal DOT version, showing flags indication the location of Missed Street Reports and mailbox icons indicating Mailbox Damage Reports.**



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# *Nominations*

**Mid-Size County Projects \$500,000 +**

**Washington Avenue Streetscape – Baltimore County**

**MD 355/Rockville Pike – Montgomery County**

**Mason Bridge Road – Caroline County**

**Southampton Road Bridge – Harford County**

**Reichs Ford Road – Frederick County**

**Suitland Road Gateway – Prince George's County**



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# County Project Of The Year

## Reichs Ford Road

## Frederick County

# County Engineers' Association of Maryland (CEAM) Project of the Year

## **Improvements to Reichs Ford Road, Phase I**

Category: Mid-Size Project (\$0.5M-\$5M)



# CEAM Project of the Year

## Mid-Size Project

### Project Team

- Owner: Board of County Commissioners of Frederick County
- Project Management: Office of Transportation Engineering
- Construction Management: Dept. of Construction Management and Inspections
- Design Engineer: Nolan Associates, Inc.
- Contractor: C. William Hetzer, Inc.

### Project Statistics

- Award: \$4.92M      Final Cost: \$4.98M      CO: 1.2%
- Contract Duration: 300 working days allowed, 268 used

# CEAM Project of the Year

## Mid-Size Project

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### **Project Details**

- Improve existing roadway to the County's Collector Roadway Standards
- Typical Section: 2-11' lanes, 2-8' paved shoulders
- Geometric improvements to achieve a 35mph design speed
- Drainage/SWM Improvements
- Maintenance of traffic
- Utility relocations

# CEAM Project of the Year

## Mid-Size Project

### **Innovative Solutions**

- SWM redesign to eliminate regional SWM Pond
- Well/Septic issues
- Maintenance of Traffic changes by contractor to save time
- Utility coordination during road construction
- Synergy with Public Safety Training Facility project
- Preserved existing pavement where possible to minimize SWM
- Material Transfer Vehicle for mainline paving
- Pavement Section to handle heavy truck traffic

# CEAM Project of the Year Mid-Size Project



Before

After



# CEAM Project of the Year Mid-Size Project



Before



After

# CEAM Project of the Year

## Mid-Size Project



Retaining Wall to Avoid Septic System

# CEAM Project of the Year Mid-Size Project



**Narrow Shoulder and Curb to avoid Impacts to Homes**



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# *Nominations*

**Large County Projects \$5,000,000 +**

**Mid-County Recreation Center – Montgomery County**

**Public Service Training Facility – Frederick County**

**Worton WWTP – Kent County**

**George's Creek WWTP – Allegany County**

**Dolfield Road Bridge – Baltimore County**



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# County Project Of The Year

## Worton WWTO

## Kent County

# WORTON WWTP UPGRADE AND EFFLUENT LAND APPLICATION SYSTEM – KENT COUNTY, MD CEAM LARGE PROJECT OF THE YEAR

County Engineers Association of Maryland (CEAM)  
Fall 2011 Conference

Clarion Fontainebleau Hotel

September 22-24

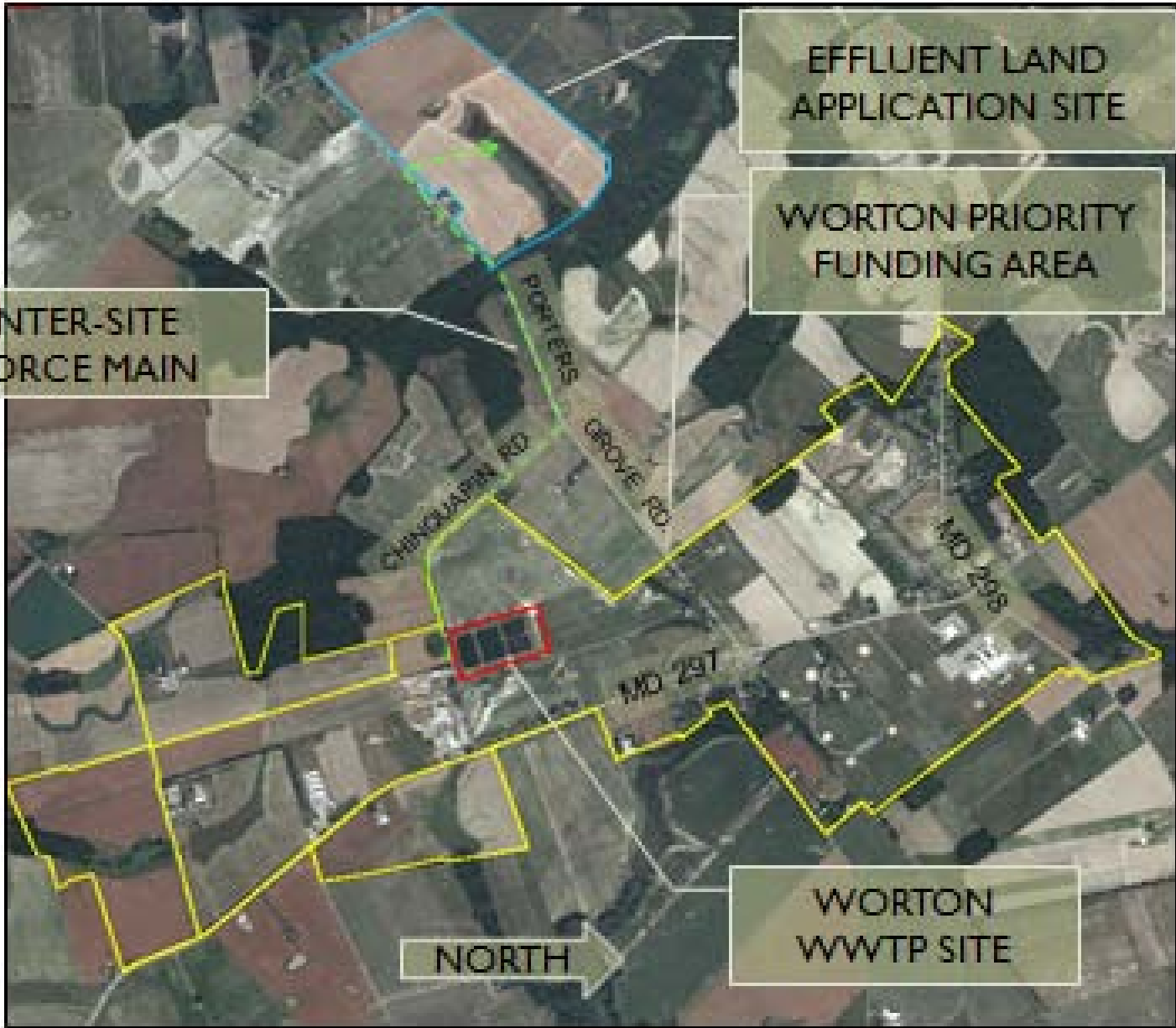


# FIRST AND FOREMOST: THANK-YOU'S



- United States Department of Agriculture – Rural Development – Denise MacLeish, Chip Mayhew, Brandi Burwell
- Maryland Department of the Environment – Dr. Ta-Shon Yu, Dr. Ching-Tzone Tien, Walid Saffouri
- Kent County Department of Public Works – Wayne Morris, Andy Riggi, Operations Staff
- Maryland Agricultural Land Preservation Fund – Bobby Stahl, Jr.
- Land Owner – Franklin Dill
- General Contractors – JLV & Associates, David A. Bramble Inc.

# WORTON AREA



EFFLUENT LAND APPLICATION SITE

WORTON PRIORITY FUNDING AREA

INTER-SITE FORCE MAIN

WORTON WWTP SITE

NORTH

CHINGOLA PIN RD

PROYERS RD

GROVE RD

MD 297

MD 298

# WORTON WWTP COMPONENTS



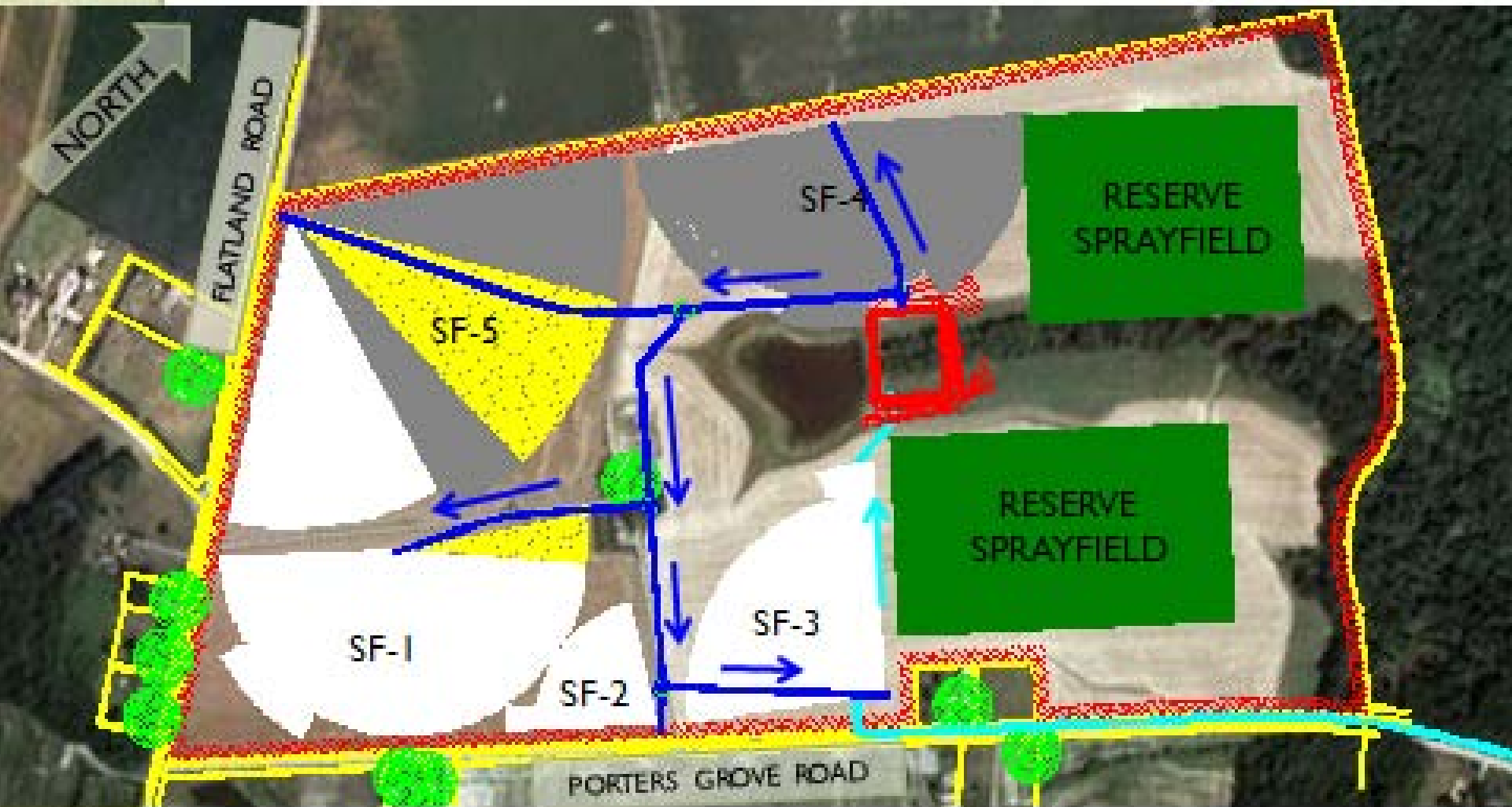
- 2 MM INFLUENT SCREEN (LAKESIDE)
- 741 GPM INFLUENT/DRAIN P.S.
- BIOLOGICAL TREATMENT BASIN WITH MIXERS, FINE BUBBLE DIFFUSERS, AND PRE/POST ANOXIC ZONES
- HOLLOW FIBER MEMBRANES (ZENON)
- UV DISINFECTION (TROJAN) – 3 FCU/100 ML
- 66' X 63' TWO –STORY OPERATIONS BUILDING
- AEROBIC DIGESTER – ALSO USED FOR PRETREATMENT OF SEPTAGE
- SCREW PRESS DEWATERING EQUIPMENT (SOMAT)
- 690 GPM TRANSFER P.S. TO SURFACE WATER OR SPRAYFIELDS DISCHARGE

# WORTON WWTP DESIGN CRITERIA

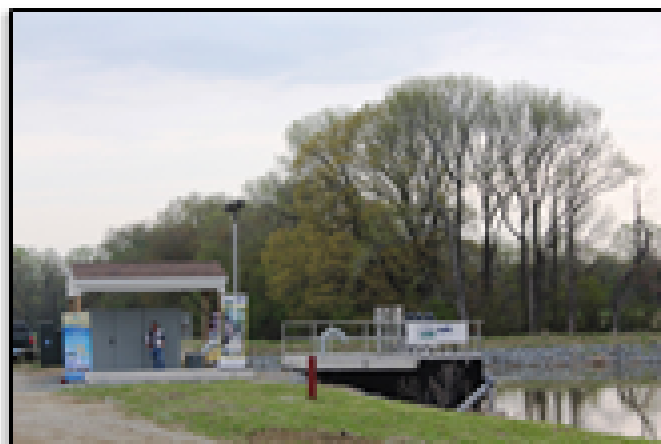


- INFLUENT FLOW: 250,000 GPD OF DOMESTIC WASTEWATER AND 7,000 GPD OF SEPTAGE
- BLENDED INFLUENT CHARACTERISTICS: 429 MG/L BOD, 263 MG/L TSS, 52 MG/L TKN, 12 MG/L TP
- EFFLUENT REQUIREMENTS: 5 MG/L BOD, 5 MG/L TSS, 4.8 MG/L TN, 0.3 MG/L TP, 3 FCU PER 100 ML, DO 5 MG/L, PH 7-9 SU
- DISCHARGE TO SURFACE WATER DISCHARGE POINT 6 MONTHS PER YEAR (NOV – APR)
- DISCHARGE TO SPRAYFIELDS 6 MONTHS PER YEAR (APR-NOV)
- 27 MILLION GALLONS OF STORAGE AVAILABLE ONSITE FOR WET WEATHER CONDITIONS DURING SPRAYING OPERATIONS

# LAND APPLICATION COMPONENTS



# WORTON ELAS COMPONENTS AND DESIGN CRITERIA



- 2.2 MILLION GALLON EARTHEN LAGOON WITH GCL CLAY LINER
- 2,310 GPM VERTICAL TURBINE SPRAYFIELD P.S.
- ~10,000 FEET OF ONSITE DISTRIBUTION PIPING TO IRRIGATION UNITS
- 5 CENTER PIVOT IRRIGATION UNITS APPLYING TO ~75.6 ACRES OF FARM LAND
- VFD MOTORS ON SPRAYFIELD PUMPS AND CLA-VAL CONTROL VALVES TO CONTROL PRESSURE SURGES
- SELF CLEANING STRAINER TO PROTECT SPRAY NOZZLES ON IRRIGATION UNITS
- CELLULAR BASED CONTROL SYSTEM ALLOWS REMOTE CONTROL OF IRRIGATION UNITS VIA INTERNET

# THANK YOU!

Please see Barry Ebersole, PE or Ryan Rangel, PE after the presentation with any questions.

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