

EL 145-06 WWTP Upgrade  
Consist. Report

MSA. S. 1829-5807

KLS Comments  
5/9/06

Robert L. Ehrlich, Jr.  
*Governor*



Martin G. Madden  
*Chairman*

Michael S. Steele  
*Lt. Governor*

Ren Serey  
*Executive Director*

**STATE OF MARYLAND  
CRITICAL AREA COMMISSION  
CHESAPEAKE AND ATLANTIC COASTAL BAYS**

1804 West Street, Suite 100, Annapolis, Maryland 21401  
(410) 260-3460 Fax: (410) 974-5338  
[www.dnr.state.md.us/criticalarea/](http://www.dnr.state.md.us/criticalarea/)

May 9, 2006

Ms. Jeanne Minner  
Director of Planning  
Town of Elkton  
PO Box 157  
100 Railroad Avenue  
Elkton, MD 21922-0157

Re: Town of Elkton Wastewater Treatment Plant Upgrade Conditional Approval

Dear Ms. Minner:

The purpose of this letter is to officially notify you of the Critical Area Commission's action on the above referenced project. On May 3, 2006, the Critical Area Commission unanimously approved the Town's proposal and site plan to expand the City's wastewater treatment plant located off Route 40, in the Town of Elkton. This approval included the following condition:

The Town of Elkton shall obtain a response from DNR Wildlife and Heritage regarding potential habitat impacts. If any potential impacts are noted the Town will develop an appropriate mitigation plan and seek approval from Commission staff prior to commencement of construction activities.

In fulfillment of the above conditions, please provide Commission staff with a copy of the response from DNR when it has been obtained. Please note that should any changes to the site plan be proposed in the future, additional review and approval by the full Commission will be required. In addition, please notify the Commission once the mitigation plantings have been implemented. Should you have any questions, please feel free to contact me at 410-260-3475.

Sincerely,

A handwritten signature in cursive script that reads "Kate Schmidt".

Kate Schmidt  
Natural Resource Planner

# Critical Area Commission

## STAFF REPORT

May 3, 2006

**APPLICANT:** Town of Elkton

**PROPOSAL:** Elkton Waste Water Treatment Plant

**JURISDICTION:** Town of Elkton

**COMMISSION ACTION:** Vote

**STAFF RECOMMENDATION:** Approval with Condition

**STAFF:** Kate Schmidt

**APPLICABLE LAW/  
REGULATIONS:** COMAR 27.02.04 State or Local Agency Actions Resulting in Major Development on Lands Owned by Local Jurisdictions

### DISCUSSION:

The Town of Elkton is proposing to construct an expanded wastewater treatment facility to provide increased treatment capacity and increased plant efficiency. The upgrades are needed for to meet a Consent Order by MDE and to provide for the anticipated additional sanitary flow loads for the Elkton community given that it is a designated Growth Area. The Consent Order is due the fact that the existing plant cannot meet the (new) lower effluent limits for ammonia and nitrogen. Currently the plant which has a capacity of 2.7 MGD operates at 2.2 MGD. The 3.2 MGD expansion is needed to accommodate projected future growth in the town.

ENR  
20mg/L N / 4.8 / 3  
2mg/L P / 1.2 / 0.3

\*The existing wastewater treatment plant is located along the west bank of the Big Elk Creek, just south of U.S. Route 40. \*The proposed expansion will take place on two adjacent parcels; parcel #2408 which is designated Intense Development Area (IDA) and parcel #2466 which is designated Limited Development Area (LDA). The new construction will tie back into the infrastructure of the existing WWTP. The total construction area is 13 acres; the IDA portion is 7 acres and the LDA portion is 6 acres in size. The area of construction proposed for the IDA parcel is consistent with the Town of Elkton Critical Area Program. However, impervious cover on the LDA portion of the project will be 34%. <sup>2.2 acres</sup> The Town of Elkton is seeking conditional approval only for the LDA portion of the project in order to increase impervious surface limits.

open space = 62 acres

Development on the LDA parcel consists of a mix of buildings including an administration

building and solids-processing building, roadways and parking lots, and treatment facilities such as effluent filters. The impervious surface area of these facilities totals 2.2 acres or approximately 34% of the site. In addition, there are 2 clarifiers with a potential 3<sup>rd</sup> clarifier site identified on the plan. Any stormwater associated with the clarifiers will be treated with the receiving effluent.

- \* Given that a portion of the project falls within IDA, the applicant is proposing to treat the entire 13 acre site to meet the 10% rule. The pollutant removal requirement for the 13 acres is 2.42 lbs/year which will be surpassed through the use of dry swales throughout the site that will remove 2.74 lbs/year. *Planting on western boundary 46,400 #*
- \* The Town of Elkton currently holds a NPDES permit from MDE for the existing 2.7 MGD plant that is valid until December of 2006. They have already made application to MDE for a new permit for 3.2 MGD to start January 2007 and are awaiting response.
- \* The southeast corner of the site contains a 100' Buffer to tidal wetlands in which there will be a small area of impact (1200 square feet). The site must be accessed from a currently existing road that partially falls inside the 100' Buffer. The applicant will meet the requirements under COMAR 27.01.02.04(C)1.b which states that all roads, bridges, and utilities that must cross a Habitat Protection Area shall be located, designed, constructed, and maintained so as to provide maximum erosion protection and minimize negative impacts. The site is an existing field and construction activities will not require any clearing of forest vegetation. Consultation with the Department of Natural Resources (DNR) Wildlife and Heritage Division is in process. A response from DNR will be recommended as a condition of approval with the caveat that any potential impacts will require a mitigation plan that must be approved by the Commission.

### **Conditional Approval Process**

*In order to qualify for consideration by the Commission for conditional approval, it shall be shown by the proposing or sponsoring agency that the project has the following characteristics:*

### **The following are the responses of the applicant:**

***B. (1) That there exist special features of the site or there are other special circumstances such that the literal enforcement of these regulations would prevent a project from being implemented;***

The proposed WWTP project involves the construction of a new 3.2 MGD wastewater treatment plant adjacent to the existing 2.7 MGD plant in order to comply with MDE's current effluent limitations. The new plant will include Biological Nutrient Reduction (BNR) and Enhanced Nutrient Reduction (ENR) that will greatly improve the Plant's ability to remove pollutants from the wastewater it treats. Elkton's WWTP discharges into the Big Elk Creek, which is a Use I water protected for water contact recreation and aquatic life. It is also a tributary of the Chesapeake Bay. This location is

the only logical place to situate the necessary upgrades mandated by MDE. The Town purchased the 6-acre property to the west of the existing plant for the BNR upgrade to improve the Town's ability to construct the upgrade without impacting the current operation. Components of the existing WWTP will be utilized for the upgrade. Elkton is currently under a Consent Order by MDE and is required to complete the BNR/ENR upgrade by July 1, 2008.

***B. (2) That the project otherwise provides substantial public benefits to the Chesapeake Bay Critical Area Program;***

The public benefits include the significant reduction in nutrient loadings to the Chesapeake Bay as a result of the proposed project. \*The Town is required to comply with the BNR and will exceed the current pollutant removal requirements by including ENR components in the new facility. \*The project construction is designed to comply with the 10% Rule for stormwater management, and will include the installation of trees for screening and water quality mitigation.

***B. (3) That the project is otherwise in conformance with this subtitle;***

This project is in compliance with all other requirements of this subtitle.

*The conditional approval request shall, at a minimum, contain the following:*

***C. (1) A showing that the literal enforcement of the provisions of this subtitle would prevent the conduct of an authorized local agency program or project;***

\* A literal enforcement of the provisions of this subtitle would prevent the construction of this mandated BNR/ENR WWTP upgrade due to the physical location of the existing WWTP within the Critical Area.

***C.(2) A proposed process by which the project could be so conducted as to conform, insofar as possible, with the approved local Critical Area program;***

There are approximately 13 acres within the limits of disturbance, 4.88 of which are to be impervious. Seven acres of this project area is designated IDA, and six acres are designated LDA.\*The entire project will be developed in compliance with the 10% Rule for stormwater management through the use of dry swales. In addition to satisfying the 10% removal requirement, the swales are intended to facilitate increased groundwater recharge with a permeable soil trench, an underdrain component and an additional storage area provided below the underdrain. A total of 2.42 lbs. per year of phosphorus removal is required for this entire project to be consistent with the 10% Rule. This project will exceed the removal requirement by providing 2.74 lbs. of phosphorus removed annually.

***C. (3) Measures proposed to mitigate adverse effects of the project.***

In addition to providing water quality measures exceeding the 10% Rule for Stormwater Management, which is not required for projects located in the LDA, the Town

\* will provide mitigation by planting a mixture of native deciduous and coniferous trees along the western boundary of the project. The property currently consists of open fields. The planting area will be a minimum of forty feet wide by 1,160 linear feet for a minimum forested area of 46,400 square feet. This will enhance water quality by establishing trees where there currently are none, thus providing additional soil stability, shade, windbreak, and wildlife habitat.

**The Commission is required to base its approval, denial or modification to this project on the following factors:**

1. The extent to which the project is in compliance with the requirements of the relevant chapters of this subtitle;
2. The adequacy of any mitigation measure proposed to address the requirements of this subtitle that cannot be met by the project; and
3. The extent to which the project, including any mitigation measures, provides substantial public benefits to the overall Chesapeake Bay Critical Area Program.

**Staff Recommendation**

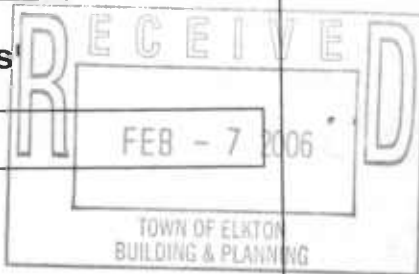
Commission staff recommend that this project be approved with the following condition:

The Town of Elkton shall obtain a response from DNR Wildlife and Heritage regarding potential habitat impacts. If any potential impacts are noted the Town will develop an appropriate mitigation plan and seek approval from the Commission prior to commencement of construction activities.

staff

## Worksheet A: Standard Application Process

### Calculating Pollutant Removal Requirements



**Step 1: Calculate Existing and Proposed Site Imperviousness**

**A. Calculate Percent Imperviousness**

- 1) Site Area within the Critical Area IDA, A = 13.0 acres
- 2) Site Impervious Surface Area, Existing and Proposed, (See Table 4.1 for details)

	(a) Existing (acres)	(b) Proposed (acres)
Roads	_____	<u>2.38</u>
Parking lots	_____	_____
Driveways	_____	_____
Sidewalks/paths	_____	<u>0.26</u>
Rooftops	_____	_____
Decks	_____	_____
Swimming pools/ponds	_____	_____
Other	_____	<u>0.39 (Misc. Structures)</u>
<b>Impervious Surface Area</b>	_____	<u>3.03</u>

3) Imperviousness (I)

Existing Imperviousness,  $I_{pre}$  = Impervious Surface Area / Site Area  
 = (Step 2a) / (Step 1)  
 =  $(\frac{0}{13})$   
 = 0 %

Proposed Imperviousness,  $I_{post}$  = Impervious Surface Area / Site Area  
 = (Step 2b) / (Step 1)  
 =  $(\frac{3.03}{13})$   
 = 23.3 %



**B. Define Development Category (circle)**

MAR 02 2006

- 1) New Development: Existing imperviousness less than 15% I (Go to Step 2A)
- 2) Redevelopment: Existing imperviousness of 15% I or more (Go to Step 2B)
- 3) Single Lot Residential Development: Single lot being developed or improved; single family residential development; and more than 250 square feet of impervious area and associated disturbance (Go to Section 5, Residential Approach, for detailed criteria and requirements).

<sup>1</sup> NOTE: All acreage used in this worksheet refers to areas within the IDA of the Critical Area only.

**Step 2: Calculate the Predevelopment Load ( $L_{pre}$ )**

**A. New Development**

$$\begin{aligned}
 L_{pre} &= (0.5) (A) \\
 &= (0.5) ( \underline{13.0} ) \\
 &= \underline{6.5} \text{ lbs /year of total phosphorus}
 \end{aligned}$$

Where:

- $L_{pre}$  = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- 0.5 = Annual total phosphorus load from undeveloped lands (lbs/acre/year)
- A = Area of the site within the Critical Area IDA (acres)

**B. Redevelopment**

$$\begin{aligned}
 L_{pre} &= (R_v) (C) (A) (8.16) \\
 R_v &= 0.05 + 0.009 (I_{pre}) \\
 &= 0.05 + 0.009 ( \underline{\hspace{2cm}} ) = \underline{\hspace{2cm}} \\
 L_{pre} &= ( \underline{\hspace{2cm}} ) ( \underline{\hspace{2cm}} ) ( \underline{\hspace{2cm}} ) (8.16) \\
 &= \underline{\hspace{2cm}} \text{ lbs/year of total phosphorus}
 \end{aligned}$$

Where:

- $L_{pre}$  = Average annual load of total phosphorus exported from the site prior to development (lbs/year)
- $R_v$  = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff
- $I_{pre}$  = Pre-development (existing) site imperviousness (i.e.,  $I = 75$  if site is 75% impervious)
- C = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l
- A = Area of the site within the Critical Area IDA (acres)
- 8.16 = Includes regional constants and unit conversion factors



**Step 3: Calculate the Post-Development Load ( $L_{post}$ )****A. New Development and Redevelopment:**

$$L_{post} = (R_v) (C) (A) (8.16)$$

$$R_v = 0.05 + 0.009 (I_{post})$$

$$= 0.05 + 0.009 ( \underline{23.3} ) = \underline{0.26}$$

$$L_{post} = ( \underline{0.26} ) ( \underline{0.30} ) ( \underline{13} ) (8.16)$$

$$= \underline{8.27} \text{ lbs/year of total phosphorus}$$

Where: -

$L_{post}$  = Average annual load of total phosphorus exported from the post-development site (lbs/year)

$R_v$  = Runoff coefficient, which expresses the fraction of rainfall which is converted into runoff

$I_{post}$  = Post-development (proposed) site imperviousness (i.e.,  $I = 75$  if site is 75% impervious)

$C$  = Flow-weighted mean concentration of the pollutant (total phosphorus) in urban runoff (mg/l) = 0.30 mg/l

$A$  = Area of the site within the Critical Area IDA (acres)

8.16 = Includes regional constants and unit conversion factors

**Step 4: Calculate the Pollutant Removal Requirement (RR)**

$$RR = L_{post} - (0.9) (L_{pre})$$

$$= ( \underline{8.27} ) - (0.9) ( \underline{6.5} )$$

$$= \underline{2.42} \text{ lbs/year of total phosphorus}$$

Where:

$RR$  = Pollutant removal requirement (lbs/year)

$L_{post}$  = Average annual load of total phosphorus exported from the post-development site (lbs/year)

$L_{pre}$  = Average annual load of total phosphorus exported from the site prior to development (lbs/year)

**Step 5: Identify Feasible BMP(s)**

Select BMP Options using the screening matrices provided in the Chapter 4 of the 2000 Maryland Stormwater Design Manual. Calculate the load removed for each option.

BMP Type	(L <sub>post</sub> )	x	(BMP <sub>RE</sub> )	x	(% DA Served)	=	LR
<u>DRY SWALE</u>	<u>8.27</u>	x	<u>65%</u>	x	<u>51%</u>	=	<u>2.74</u> lbs/year
_____	_____	x	_____	x	_____	=	_____ lbs/year
_____	_____	x	_____	x	_____	=	_____ lbs/year
_____	_____	x	_____	x	_____	=	_____ lbs/year
Load Removed, LR (total) =						<u>2.74</u>	lbs/year
Pollutant Removal Requirement, RR (from Step 4) =						<u>2.42</u>	lbs/year

Where:

- Load Removed, LR = Annual total phosphorus load removed by the proposed BMP (lbs/year)
- L<sub>post</sub> = Average annual load of total phosphorus exported from the post-development site (lbs/year)
- BMP<sub>RE</sub> = BMP removal efficiency for total phosphorus, Table 4.8 (%)
- % DA Served = Fraction of the site area within the critical area IDA served by the BMP (%)
- RR = Pollutant removal requirement (lbs/year)

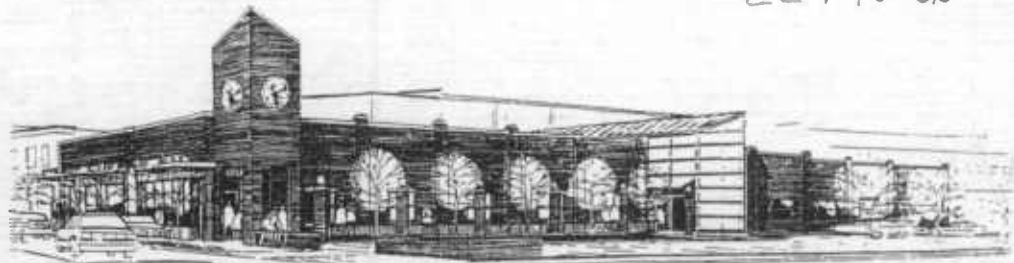
If the Load Removed is equal to or greater than the Pollutant Removal Requirement computed in Step 4, then the on-site BMP complies with the 10% Rule.

Has the RR (pollutant removal requirement) been met?  Yes  No

**Elkton WWTP**  
**Dry Swale C<sub>w</sub> Calculations**

Ditch No.	Total D.A. (Ac.)	Pvmt/Roof/Drive (C=0.9)		Grass (C=0.4)		Total CxA	Weighted C	Design C
		A	CxA	A	CxA			
1	0.33	0.06	0.054	0.27	0.108	0.162	0.49	0.50
2	0.24	0.08	0.072	0.16	0.064	0.136	0.57	0.60
3	0.30	0.07	0.063	0.23	0.092	0.155	0.52	0.55
3A	0.50	0.10	0.09	0.40	0.160	0.250	0.50	0.50
4	0.16	0.09	0.081	0.07	0.028	0.109	0.68	0.70
5	0.28	0.08	0.072	0.20	0.080	0.152	0.54	0.55
6	0.27	0.13	0.117	0.14	0.056	0.173	0.64	0.65
7	0.95	0.17	0.153	0.78	0.312	0.465	0.49	0.50
8	0.12	0.05	0.045	0.07	0.028	0.073	0.61	0.65
9	0.31	0.01	0.009	0.30	0.120	0.129	0.42	0.45
10	0.37	0.08	0.072	0.29	0.116	0.188	0.51	0.55
11	0.15	0.07	0.063	0.08	0.032	0.095	0.63	0.65
12	0.67	0.10	0.09	0.57	0.228	0.318	0.47	0.50
13	1.10	0.08	0.072	1.02	0.408	0.480	0.44	0.50
14	0.79	0.21	0.189	0.58	0.232	0.421	0.53	0.55

EL 145-06



Joseph L. Fisona, Mayor

Board of Commissioners:

Town Administrator

John K. Burkley, II Charles H. Givens, Sr.

Lewis H. George, Jr.

Earl M. Piner, Sr. C. Gary Storke

February 27, 2006

Ms. Regina Esslinger  
Natural Resources Planner  
State of Maryland Chesapeake Bay  
Critical Area Commission  
1804 West Street, Suite 100  
Annapolis, Maryland 21401

**RECEIVED**  
MAR 02 2006  
CRITICAL AREA COMMISSION

Re: Town of Elkton Wastewater Treatment Plant ENR Upgrade  
Compliance with Elkton's Critical Area Program

Dear Ms. Esslinger:

Please accept the following as a summary of the project and review for compliance with the Town's Critical Area Program.

Project Overview:

The purpose of this project is to provide increased treatment capacity for the anticipated additional sanitary flow loads for the Elkton community as well as increase the overall plant efficiency resulting in improved water quality of the treated effluent. The existing wastewater treatment plant is located along the west bank of the Big Elk Creek just south of U.S. Route 40, on tax map 314, parcel #1477. The expansion is to be located on approximately six acres of the eastern half of the adjacent parcel #2408 within the Intensely Developed Area (IDA), and on parcel #2466, consisting of six acres within the Limited Development Area (LDA), just west of the existing wastewater treatment plant. The Town of Elkton had received Growth Allocation from Cecil County Commissioners for parcel 2466 in early 2004. A public hearing is planned within the next month or two to finalize the reclassification to IDA. The Critical Area worksheet reflects the IDA land use classification for both parcels.

\* {

There are approximately 13 acres within the limits of disturbance, 4.88 of which are to be impervious. Of this impervious area, greater than 37% or 1.85 acres is composed of open tank area. All of the stormwater associated with this area is to be treated with the receiving influent and therefore not included in the contributing drainage areas.

**TOWN OF ELKTON**

Elkton Municipal Building, 100 Railroad Avenue, P.O. Box 157, Elkton, Maryland 21922-0157  
TELEPHONE: (410) 398-0970 FACSIMILE: (410) 398-0128 E-MAIL: [elkadsec@iximd.com](mailto:elkadsec@iximd.com) WEBSITE: [www.townofelkton.org](http://www.townofelkton.org)

x4

Ms. Regina Esslinger  
February 27, 2006  
Page Two

The remaining disturbed area is to be reestablished with a dense grass lawn. All stormwater runoff is directed through the site via dry swales to storm sewers as required. In addition to satisfying the 10% pollutant removal requirement, the swales are intended to facilitate increased groundwater recharge with a permeable soil trench, an underdrain component and an additional storage area provided below the underdrain. With the combination of treated stormwater through the facility, increased infiltration and extended surface conveyance, the anticipated rates of runoff post-development are less than that of pre-development conditions for the two- and ten-year storm events.

**IDA:**

As noted above, the site currently consists of both LDA and IDA land use classifications of Critical Area as indicated on the site plan, however, in anticipation of the final public hearing for the reclassification to IDA, the entire project area is considered subject to the 10% Rule. As such a total of 2.42 lbs. per year of phosphorus removal is required from the future site runoff. This requires at least 45% of the site area to be treated/contributing to one of fourteen proposed dry swales. This is exceeded with a total of 6.54 acres from which the runoff is directed towards the swales resulting in 2.74 lbs. of phosphorus removed annually.

**Erosion and Sediment Control:**

During construction, silt fence is to be installed and properly maintained along the perimeter of the development site as denoted on the plan per the limits of disturbance. Additionally, silt fence is positioned uphill of the dry swales located at a lower gradient from larger areas of disturbance. A temporary sediment trap is proposed at the southeast section of the site and is intended to capture the most sediment-laden runoff from the majority of the construction area. All inlets are also to be safeguarded against sedimentation with standard or at-grade inlet protectors.

**Summary:**

General design guidelines that were implemented:

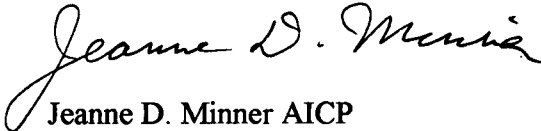
- All runoff from impervious areas are directed to storm drainage facilities via dry swales.
- All inlets are located within vegetated areas thereby increasing the quality of runoff from paved surfaces.

Ms. Regina Esslinger  
February 27, 2006  
Page Three

- Appropriate erosion and sedimentation control measures as well as temporary and permanent stabilization specifications are provided in accordance with the Cecil Soil Conservation District guidelines.
- No wetland areas are to be disturbed. The limits of disturbance are restricted to that area of the site deemed necessary for the installation and operation of the improvements proposed with this project.
- All disturbed areas not intended for structures or impervious surfaces area to be stabilized with dense grass vegetation. In addition, a 50-foot landscape buffer along the north, west and south project boundaries is proposed upon completion of the treatment plan upgrade.

We trust the above information satisfies your offices needs in regard to the project, however, please do not hesitate to contact me should you have any questions or need additional information. Thank you once again for your assistance in regard to this important project for Elkton.

Very truly yours,



Jeanne D. Minner AICP  
Director of Planning

*Enclosures (2)*

**Schmidt, Katherine**

---

**From:** Jeanne Minner [elktonplanner@comcast.net]  
**Sent:** Thursday, April 20, 2006 10:06 AM  
**To:** Schmidt, Katherine  
**Subject:** updated conditional approval request

Dear Kate,

The Town of Elkton would like to request Conditional Approval of Elkton's BNR/ENR Upgrade to its Wastewater Treatment Plant in accordance with Chapter 06 of Title 27 **CHESAPEAKE BAY CRITICAL AREA COMMISSION**, Subtitle 02 **DEVELOPMENT IN THE CRITICAL AREA RESULTING FROM STATE AND LOCAL AGENCY PROGRAMS**.

The Elkton Wastewater Treatment Plant (WWTP) project will meet the following criteria as required by Chapter 06:

B. (1) The proposed WWTP project involves the construction of a new 3.2 MGD wastewater treatment plant adjacent to the existing 2.7 MGD plant in order to comply with MDE's current effluent limitations. The new plant will include Biological Nutrient Reduction (BNR) and Enhanced Nutrient Reduction (ENR) that will greatly improve the Plant's ability to remove pollutants from the wastewater it treats. Elkton's WWTP discharges into the Big Elk Creek, which is a Use I water protected for water contact recreation and aquatic life. It is also a tributary of the Chesapeake Bay. This location is the only logical place to situate the necessary upgrades mandated by MDE. The Town purchased the 6-acre property to the west of the existing plant for the BNR upgrade to improve the Town's ability to construct the upgrade without impacting the current operation. Components of the existing WWTP will be utilized for the upgrade. Elkton is currently under a Consent Order by MDE and is required to complete the BNR/ENR upgrade by July 1, 2008.

(2) The public benefits include the significant reduction in nutrient loadings to the Chesapeake Bay as a result of the proposed project. The Town is required to comply with the BNR and will exceed the current pollutant removal requirements by including ENR components in the new facility. The project construction is designed to comply with the 10% Rule for stormwater management, and will include the installation of trees for screening and water quality mitigation.

(3) This project is in compliance with all other requirements of this subtitle.

C. (1) A literal enforcement of the provisions of this subtitle would prevent the construction of this mandated BNR/ENR WWTP upgrade due to the physical location of the existing WWTP within the Critical Area.

(2) There are approximately 13 acres within the limits of disturbance, 4.88 of which are to be impervious. Seven acres of this project area is designated IDA, and six acres are designated LDA. The entire project will be developed in compliance with the 10% Rule for Stormwater Management through the use of dry swales. In addition to satisfying the 10% removal requirement, the swales are intended to facilitate increased groundwater recharge with a permeable soil trench, an underdrain component and an additional storage area provided

below the underdrain. A total of 2.42 lbs. per year of phosphorus removal is required for this entire project to be consistent with the 10% Rule. This project will exceed the removal requirement by providing 2.74 lbs. of phosphorus removed annually.

(3) In addition to providing water quality measures exceeding the 10% Rule for Stormwater Management, which is not required for projects located in the LDA, the Town will provide mitigation by planting a mixture of native deciduous and coniferous trees along the western boundary of the project. The property currently consists of open fields. The planting area will be a minimum of ten feet wide by 1,160 linear feet for a minimum forested area of 11,600 square feet. This will enhance water quality by establishing trees where there currently are none, thus providing additional soil stability, shade, windbreak, and wildlife habitat.

Should you have any questions, or require additional information, I may be reached at 398-4999.

Very truly yours,

Jeanne D. Minner AICP  
Director of Planning

*3.2 - based on needs. - planning allocation - growth allocation*

*✓ NPDES - Has been applied for next year - one currently exists to Dec 06*

*✓ DNR Heritage - will have to be condition of approval*



**Schmidt, Katherine**

---

**From:** Jeanne Minner [elktonplanner@comcast.net]  
**Sent:** Wednesday, April 19, 2006 1:51 PM  
**To:** Schmidt, Katherine  
**Subject:** Town of Elkton Conditional Approval for Wastewater Treatment Plant Project

Dear Kate,

The Town of Elkton would like to request Conditional Approval of Elkton's BNR/ENR Upgrade to its Wastewater Treatment Plant in accordance with Chapter 06 of Title 27 **CHESAPEAKE BAY CRITICAL AREA COMMISSION, Subtitle 02 DEVELOPMENT IN THE CRITICAL AREA RESULTING FROM STATE AND LOCAL AGENCY PROGRAMS.**

The Elkton Wastewater Treatment Plant (WWTP) project will meet the following criteria as required by Chapter 06:

B. (1) The proposed WWTP project involves the construction of a new 3.2 MGD wastewater treatment plant adjacent to the existing 2.7 MGD plant in order to comply with MDE's current effluent limitations. . The new plant will include Biological Nutrient Reduction (BNR) and Enhanced Nutrient Reduction (ENR) that will greatly improve the Plant's ability to remove pollutants from the wastewater it treats. Elkton's WWTP discharges into the Big Elk Creek, which is a Use I water protected for water contact recreation and aquatic life. It is also a tributary of the Chesapeake Bay. This location is the only logical place to situate the necessary upgrades mandated by MDE. The Town purchased the 6-acre property to the west of the existing plant for the BNR upgrade to improve the Town's ability to construct the upgrade without impacting the current operation. Components of the existing WWTP will be utilized for the upgrade. Elkton is currently under a Consent Order by MDE and is required to complete the BNR/ENR upgrade by July 1, 2008.

*the Town is  
in a  
growth  
area*

(2) The public benefits include the significant reduction in nutrient loadings to the Chesapeake Bay as a result of the proposed project. The Town is required to comply with the BNR and will exceed the current pollutant removal requirements by including ENR components in the new facility. The project construction is designed to comply with the 10% Rule for stormwater management, and will include the installation of trees for screening and water quality mitigation.

(3) This project is in compliance with all other requirements of this subtitle.

C. (1) A literal enforcement of the provisions of this subtitle would prevent the construction of this mandated BNR/ENR WWTP upgrade due to the physical location of the existing WWTP within the Critical Area.

(2) The proposed project would be developed in compliance with the 10% Rule for Stormwater Management. The proposed impervious surface on the 6-acre parcel is 2.2 acres (36% impervious surface).

(3) Tree planting is proposed for mitigation in addition to compliance with the 10% Rule for Stormwater Management.

Should you have any questions, or require additional information, I may be reached at 398-4999.

Very truly yours,

Jeanne D. Minner AICP  
Director of Planning

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FREE Emoticons for your email! [Click Here!](#)



# Town of Elkton Wastewater Treatment Plant Project Aerial Photograph

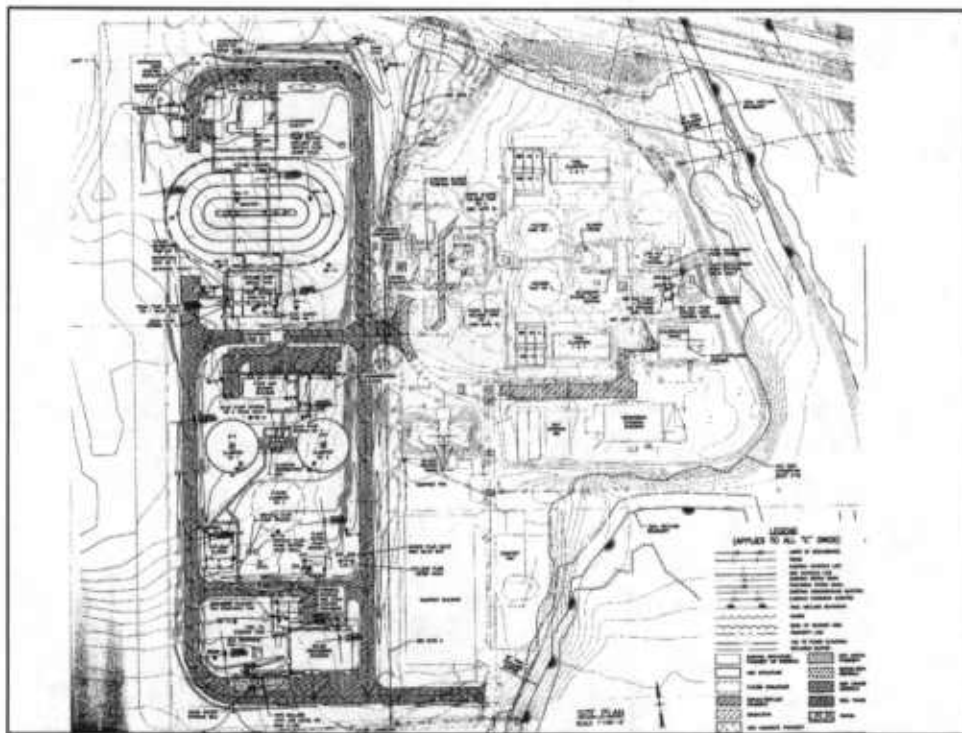
Area in **black** (62 ac.) was purchased by Elkton using Program Open Space Funds and is used for open space and leased to Elk Landing Foundation for historical/cultural activities.

Area in **red** (6 ac.) is LDA for sewer plant expansion

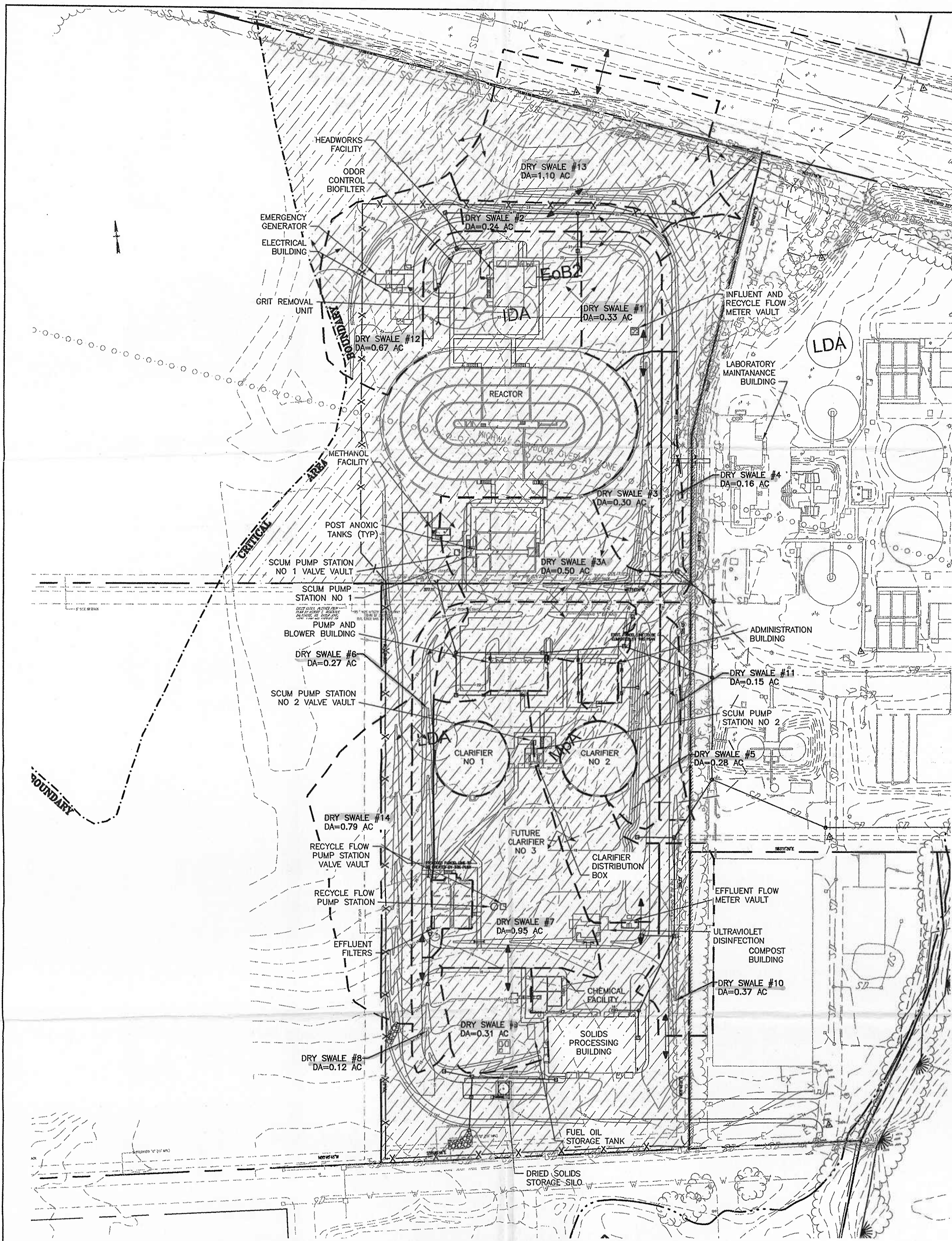




Aerial view of existing WWTP and the expansion site







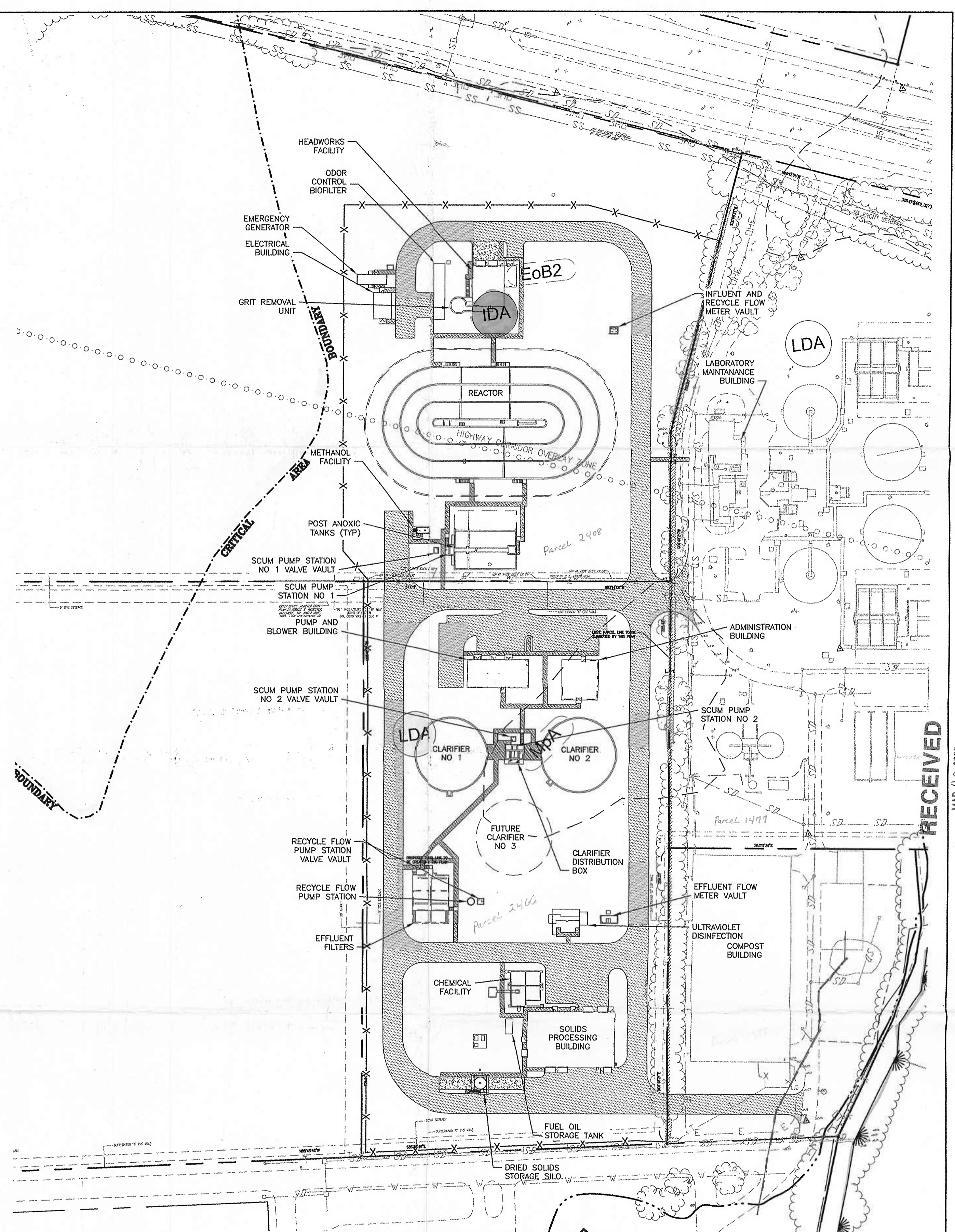
**CRITICAL AREA BOUNDARY AND DRY SWALE DRAINAGE AREA MAP**  
SCALE: 1"=90'-0"

NOTE: PROPOSED SITE CONSISTS OF BOTH IDA AND LDA CLASSIFICATIONS, BUT IS CURRENTLY BEING RECLASSIFIED AS IDA IN ITS ENTIRETY. HATCHED AREA DENOTES THE EXTENT OF THE PROPOSED SITE WITHIN THE CRITICAL AREA BOUNDARY.

PROPOSED IMPERVIOUS AREA	
TYPE	AREA (ACRES)
BUILDINGS AND STRUCTURES	0.39
SIDEWALKS	0.26
ROADS AND PARKING	2.38
OPEN TANK STRUCTURES	1.85

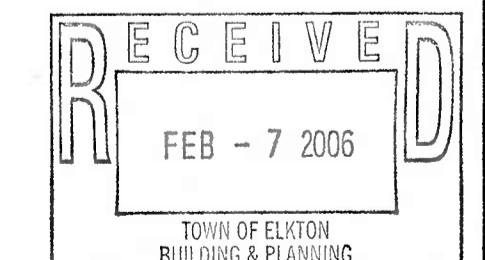
**\*PARTIAL LEGEND**

- EXISTING CONTOUR LINE
- - - NEW CONTOUR LINE
- - - WETLAND BOUNDARY
- - - PROPOSED STORM DRAIN
- - - EXISTING STORM DRAIN
- - - PROPERTY LINE
- - - 100 YR FLOOD ELEVATION
- - - DRAINAGE DIVIDE
- - - CRITICAL AREA BOUNDARY
- - - WETLANDS BUFFER
- - - SOILS BOUNDARY
- [Hatched Box] NEW STRUCTURE
- [Dotted Box] FUTURE STRUCTURE
- [Diagonal Lines] NEW ASPHALT PAVEMENT
- [Diagonal Lines] NEW CONCRETE PAVEMENT
- [Diagonal Lines] NEW CONCRETE SIDEWALK
- [Hatched Box] CRITICAL AREA



**PROPOSED IMPERVIOUS AREA MAP**  
SCALE: 1"=80'-0"

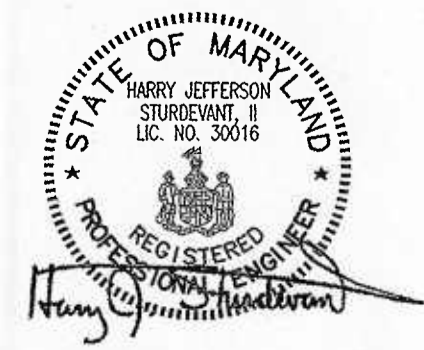
NOTE: REFER TO LEGEND FOR PROPOSED IMPERVIOUS AREA DESIGNATIONS.



REF: 30133001, C-ST-05, C-ST-06, C-ST-07, C-ST-08, L-ST-02  
11/04, Rev. 008  
P:\SHARED PROJECTS\30133\30133\DRAWINGS\Civil\Critical Area Map

\*SEE DWG C-1 FOR COMPLETE SITE GRADING PLAN LEGEND.

2	FOR CONSTRUCTION	KSG	12/30/05							
A	FOR APPROVAL	KSG	11/15/05							
BSR	11/05	BSR								
ISSUE NO.	DRAWN	DATE	CHECKED	DESIGNER	APPROVED	DATE				
PROJECT SUPERVISOR				DEPARTMENT SUPERVISOR				ISSUE NO.	DRAWN	DATE



**Stearns & Wheler, LLC**  
Environmental Engineers and Scientists

BOWIE, MARYLAND

TOWN OF ELKTON, MARYLAND	
ELKTON WWTP ENR UPGRADE	
CRITICAL AREA BOUNDARY/DRY SWALE DRAINAGE AREA MAP, AND PROPOSED IMPERVIOUS AREA MAP	
JOB NO. 30133	CONTRACT 2005-004 SHEET