



# STATE OF IOWA

CHESTER J. CULVER, GOVERNOR  
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
RICHARD A. LEOPOLD, DIRECTOR

August 23, 2010

Mr. Scott Hutchens, PE  
Civil Engineer III  
Wastewater Reclamation Authority  
3000 Vandalia Road  
Des Moines, IA 50317

RE: Combined Sewer Solids Separation Facility  
Phase 17 Segment 2  
Wastewater Reclamation Authority  
Des Moines, Iowa  
Wastewater Facility No.: 6-77-27-0-01  
IDNR Project No.: S2007-0268  
SRF No.: CS1920458 01

Subj: Variance Request from Iowa Administrative Code 567-64.2(3)e

Dear Mr. Hutchens:

After careful and thorough consideration, the Department has approved your July 19, 2010 request for a variance from Iowa Administrative Code 567-64.2(3)e which requires the separation distance of 400 feet between the proposed facility and lakes and impoundments.

Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of variance for the reduced separation distances from Dean Lake and unnamed impoundments. The requested variance is deemed to be necessary and appropriate pursuant to the Iowa Code section 455B.181.

The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance is considered to be of a permanent nature. The validity of this variance approval shall last for a period of one year from the date of the construction permit in accordance with Rule 561 IAC 10.5.

This decision is based on our review of justification presented to support the request. Our concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness as would be provided by technical compliance with the design standard on this issue.

If you have any questions, please email Gabe Lee at [gabe.lee@dnr.iowa.gov](mailto:gabe.lee@dnr.iowa.gov) or call him at 515-281-6253.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne G. Gribble for".

Charles C. Corell, Chief  
Water Quality Bureau

C: Brian Bakke, HDR Engineering, Des Moines, IA  
Diana Hansen, DNR Legal Services  
DNR Field Office 5  
DNR File 6-77-27-0-01  
SRF File: CS1920458 01

**VARIANCE REQUEST**  
**Iowa Department of Natural Resources**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 1. Date: July 26, 2010<br>2. Reviewer/Engr.: Gabe Lee<br>3. Date Received: July 19, 2010<br>4. Facility Name: Des Moines Metropolitan WRF<br>5. Facility Number: 6-77-27-0-01<br>6. County Number: 77 (Polk)<br>7. Program Area: CP (Wastewater)<br>8. Facility Type: C04/C08-PhyTrtmt/Disinfection<br>9. Subject Area: 308-Separation Distances<br>10. Rule Reference: 567-64.3(3)e<br>11. Design Std. Ref.: 14.2.3e<br>12. Consulting Engr.: HDR Engineering<br>13. Variance Rule: 567-64.2(9)c, d, e | 14. Decision: <u>Appd.</u><br>Date: <u>8/20/10</u><br><br>15. Appealed:<br>Date: |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|

**16. Description of Variance Request:**

The Water Reclamation Authority and HDR Engineering are requesting variance from the Iowa Wastewater Facilities Design Standards Chapter 14 – Wastewater Treatment Works – 14.2.3e. The Design Standard 14.2.3e describes the requirements for separation distances for a wastewater treatment facility from lakes and public impoundment. The proposed facility is a combined sanitary sewer separation facility (CSSSF); it uses physical treatment to treat combined sanitary flows. The facility also includes a chemical disinfection system. This is considered necessary when conditions require the need to discharge directly into Des Moines River. Normal operation would include holding and storing excess combined sanitary wastewater and then return to Water Reclamation Facility (WRF) for treatment after the wet weather event. There are three water bodies within 400 feet from the CSSSF; part of Dean Lake lays 125 feet to the northwest, a stormwater catchment pond lays 300 feet to the west and an abandoned gravel pit lays 286 feet to the southwest.

**17. Applicant's/Consulting Engineer's Justification:**

- The CSSSF is a key component of the WRA's Long Term Control Plan for mitigating the impacts of combined sewer overflows. To provide the ability to capture, store, treat and ultimately discharge flows from the combined sewer area, the location of the CSSSF needs to be meet specific criteria,
  - Due to the number of interrelated utilities, site security, staffing, and maintenance, there were many advantages to constructing the CSSSF in a location near the existing Wastewater Reclamation Facility.
  - To divert wet weather flows to storage or treatment the CSSSF needs to be located near the termination of the proposed New Main Outfall sewer. The New Main Outfall will convey dry and wet weather flows from the combined sewer service area, including downtown Des Moines, to the WRF and CSSSF.
- To discharge CSO flows, the CSSSF needs to be in a location near the Des Moines River.
- The CSSSF has been located in the only area that satisfies the operational requirements of the new facility.
- The proposed construction of the CSSSF is anticipated to begin sometime between August and September, 2010. The operative period is equal to the life of the CSSSF which is 50-years or longer.

- As stated above, the CSSSF is located in the only logical location that satisfies the operational requirements of the facility. If the CSSSF was relocated to the east or north to achieve the 400 foot setback requirements from Dean's Lake, the CSSSF would be within the 1,000 foot separation distance from an inhabitable residence also required by the IDNR.
- The stormwater drainage at the CSSSF site has been designed to minimize any potential impacts to Dean's Lake. All paved surfaces including the site paving and access roads have been designed to be captured and conveyed back to the Wastewater Reclamation Facility instead of discharging to Dean's Lake.
- The proposed location of the CS SSF is directly adjacent to where the Dean's Lake chain discharges to the Des Moines River. Therefore, any water quality impacts to Dean's Lake by the CSSSF would be confined to a small portion of the lake chain at the point it discharges to the river.
- The public impoundment to the west of the facility is a low lying area intermittently hydraulically connected to the Dean's Lake chain. During periods of wet weather this impoundment fills with water which never drains completely dry. There is probably some hydrologic connection, either through percolation or groundwater influence, from Dean's Lake to this impoundment. In any case, the justification for the variance to this water body would be the same as for Dean's Lake.
- The public impoundment to the southwest of the facility is technically in the floodway of the Des Moines River and during periods of high river flow, this water body would be part of the river. In addition, the impoundment is separated from the CSS SF by the flood protection levee and cannot be impacted by the CSS SF site or drainage.

**18. Department's Justification:**

**Recommend variance *approval*.**

- The selection for the location of the CSSSF is logical. From an operational and maintenance point of view, most services needed for the CSSSF can be shared with the adjacent existing WRF. The CSSSF site is also limited by the hydraulics of the New Main Outfall. The route proposed for this sewer limited by topography and development between the service area and WRF. The proximity of the Des Moines River is important when wet weather events may require direct discharge into the Des Moines River.
- The applicant owns all these impoundments.
- As stated in the supporting statements in the variance petition, impoundments and lakes near the CSSSF will be protected from storm runoff which will be captured and conveyed back to the WRF.
- The petition also indicates consideration of other separation distances. Moving the facility to meet the 400 foot lake separation distances would violate separation distances of a habitable residence.
- The gravel pit to southwest of the CSSSF lies within the floodway of Des Moines River and on the river side of the flood levee. Staff does not consider this as an impoundment but part of the Des Moines River.
- Dean Lake is a series of impoundments running from north to south discharging into the Des Moines River. USGS topo map shows the affected part of Dean Lake to be intermittent.
- Based on casual observation of Dean Lake, the water quality of these impoundments may be considered significantly less than pristine. These impoundments served the purpose of conveying stormwater runoff from portion of Interstate I-235 and the

surrounding industrial area to the Des Moines River.

- Construction of this facility will have a minimal environmental impact on these lake and impoundments. Location choices of the CSSSF facility are very limited due to the reasons stated above. The Des Moines River is currently on the 303(d) impaired waters list for bacteria. Removing combined sewer overflows with the construction of the CSSSF will help improve the water quality of Des Moines River.

19. Precedents Used:

No record of request or petition for variance from Design Standards Chapter 14.2.3e

20. Staff Reviewer: Gabe Lee

*GSL Gabe Lee*

Date: August 19, 2010

21. Supervisor: Satya Chennupati

*Satya Chennupati*

Date: 8/20/10

22. Authorized by: Chuck Corell

*Wayne Lissman*

Date: 8-20-10

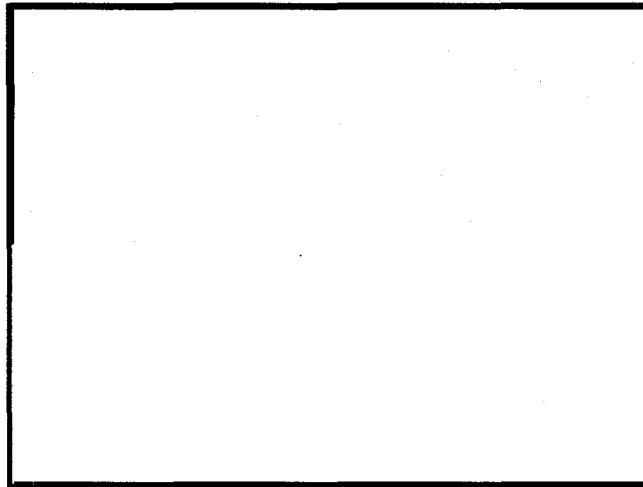
**Polk County Assessor**

2010

[ [Home](#) ] [ [General Query](#) ] [ [Legal Query](#) ] [ [HomeOwner Query](#) ] [ [Book/Page Query](#) ] [ [Commercial Query](#) ] [ [Res Sales Query](#) ] [ [Comm Sales Query](#) ] [ [Help](#) ]

| <u>District/Parcel</u> | <u>GeoParcel</u>                      | <u>Map</u>                      | <u>Nbhd</u> | <u>Jurisdiction</u> | <u>Status</u> |
|------------------------|---------------------------------------|---------------------------------|-------------|---------------------|---------------|
| 050/04507-005-000      | 7824-12-300-001                       | 0455A                           | DM20/Z      | DES MOINES          | <u>ACTIVE</u> |
| <u>School District</u> | <u>Tax Increment Finance District</u> | <u>Bond/Fire/Sewer/Cemetery</u> |             |                     |               |
| 1/Des Moines           | 30/SE Ag Business Park UR             |                                 |             |                     |               |

[Get  
Bigger  
Map](#)

**Mailing Address**

CITY OF DES MOINES  
400 ROBERT D RAY DR  
DES MOINES, IA 50309-1813

**Legal Description**

S OF LN BEG 32F W & 40.78F S W 1/4 COR E 34F NE 112.03F E 149.87F SE 1002.63F NLY  
631.99F  
TO S LN C B & Q ROW LTS 15 & 16 OP SEC 12-78-24

| <u>Ownership</u> | <u>Name</u>        | <u>Recorded</u> | <u>Book/Page</u> | <u>RevStamps</u> |
|------------------|--------------------|-----------------|------------------|------------------|
| Title Holder #1  | CITY OF DES MOINES | 1980-10-13      | 5048/633         |                  |

| <u>Assessment</u> | <u>Class</u> | <u>Kind</u> | <u>Land</u> | <u>Bldg</u> | <u>AgBd</u> | <u>Total</u> |
|-------------------|--------------|-------------|-------------|-------------|-------------|--------------|
| Current           | Government   | Full        | 0           | 0           | 0           | 0            |

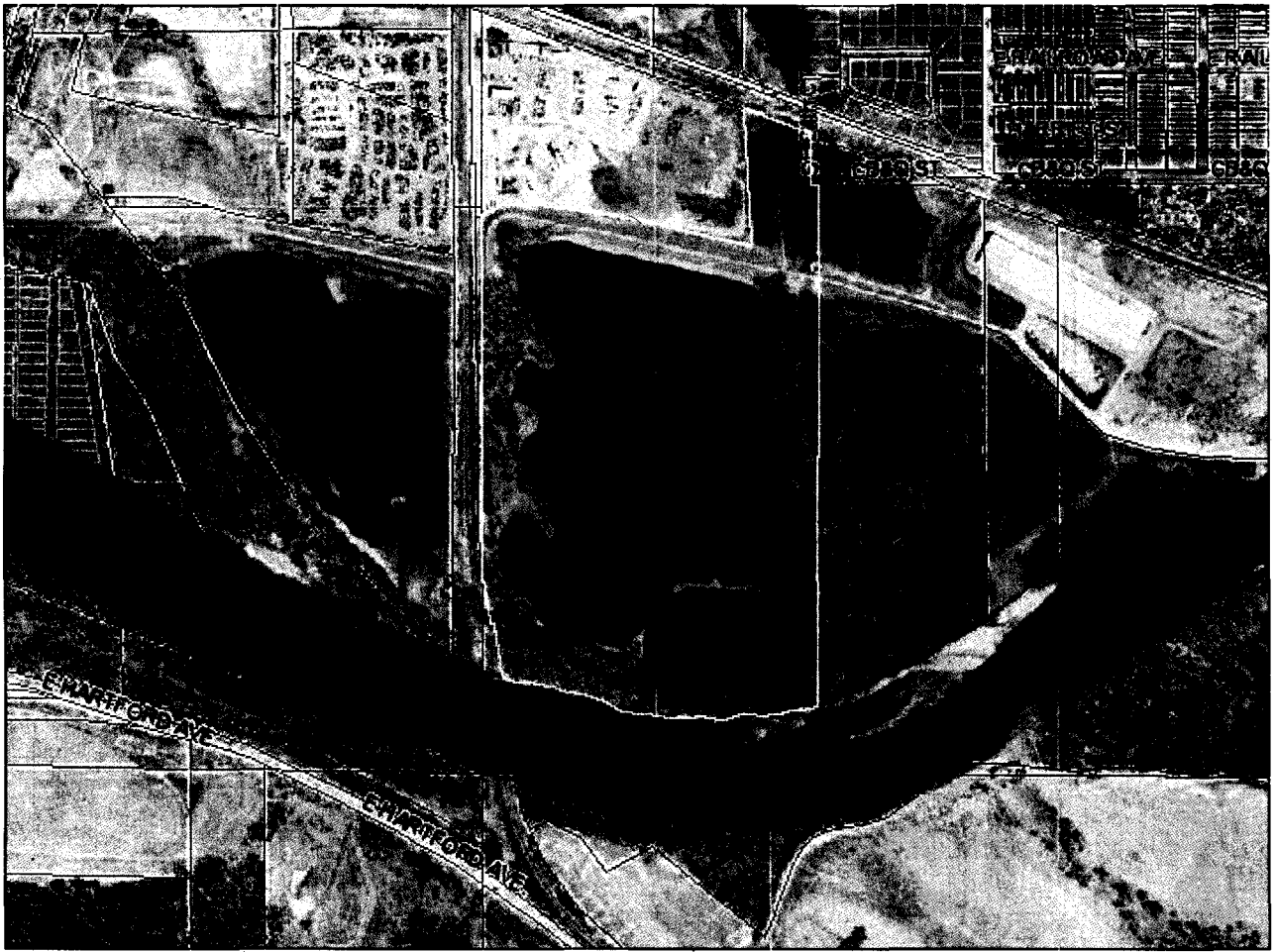
[Estimate Taxes](#) [Polk County Treasurer Tax Information](#) [Pay Taxes](#)

| <b>Zoning</b>                                                                                                                               | <b>Description</b>        | <b>SF</b> | <b>Assessor Zoning</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-----------|------------------------|
| U-1                                                                                                                                         | Flood Plain District      |           | Floodway               |
| M-2                                                                                                                                         | Heavy Industrial District |           | Industrial Heavy       |
| FW                                                                                                                                          | Floodway District         |           | Floodway               |
| <b>Source:</b> City of Des Moines Community Development <b>Published:</b> 2010-03-05 <b>Contact:</b> Planning and Urban Design 515 283-4200 |                           |           |                        |

| <b><u>Land</u></b> |           |              |        |              |              |
|--------------------|-----------|--------------|--------|--------------|--------------|
| <b>SQUARE FEET</b> | 3,518,865 | <b>ACRES</b> | 80.782 | <b>SHAPE</b> | IR/Irregular |
| <b>TOPOGRAPHY</b>  | N/Normal  |              |        |              |              |

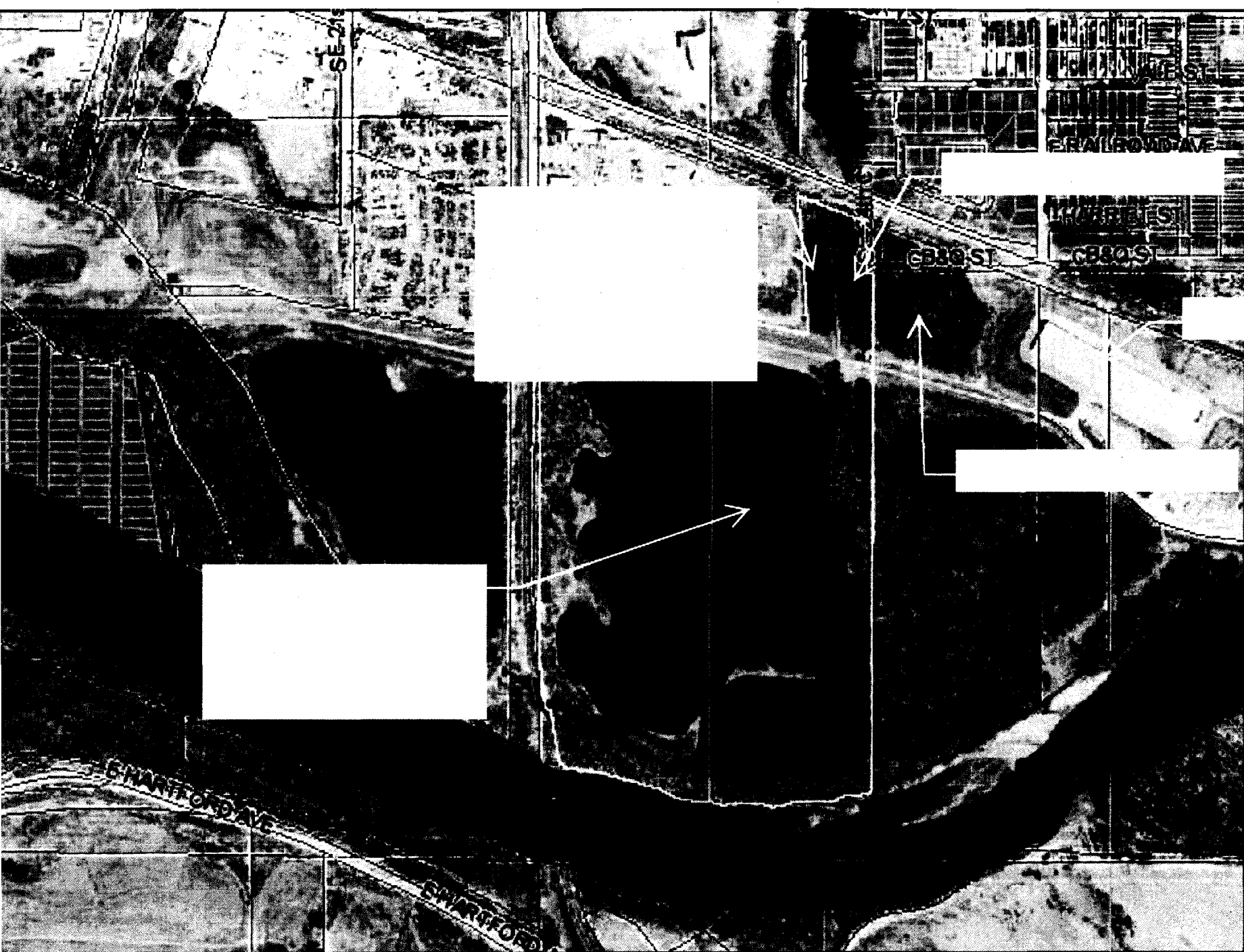
[email this page](#)

Room 195, 111 Court Avenue, Des Moines, IA 50309  
Phone 515 286-3140 / Fax 515 286-3386  
[polkweb@assess.co.polk.ia.us](mailto:polkweb@assess.co.polk.ia.us)





WRA CSSSF Site Separation - Dean's Lake Route



*Courtesy of Polk County Auditor Jamie Fitzgerald*

WRA CSSSF Site Separation - Dean's Lake Owner



WRA CSSSF Floodway



WRA CSSSF Site Separation - Dean's Lake Inlet

July 19, 2010

Iowa DNR  
ATTN: Mr. Gabe Lee  
Wastewater Engineering Section  
502 E. 9<sup>th</sup> Street  
Des Moines, IA 50319-0034

RE: Wastewater Reclamation Authority, City of Des Moines, Iowa  
Combined Sewer Solids Separation Facility  
Variance Request

Dear Mr. Lee,

This letter is to inform you that the City of Des Moines Wastewater Reclamation Authority and HDR Engineering, Inc. is requesting a variance from the Iowa Wastewater Facilities Design Standards. This variance request is in accordance to 561 Iowa Administrative Code (IAC) Chapter 10, incorporated by reference by 567 IAC Chapter 13.

A variance is requested to locate the Combined Sewer Solids Separation Facility (CSSSF) within 400 feet of the Dean's Lake and the two public impoundments, one west of and one southwest of the facility as shown on Figure 1, attached. The following information is presented for your review and concurrence:

1. The name, address and telephone number of the entity or person for whom a waiver or variance is requested.

City of Des Moines, Wastewater Reclamation Authority Project Engineer:  
Scott Hutchens, PE  
Civil Engineer III  
Wastewater Reclamation Facility  
3000 Vandalia Road  
Des Moines, IA 50317  
Direct Phone: (515) 323-8031  
Email: [sthutchens@dmgov.org](mailto:sthutchens@dmgov.org)

Consulting Engineer:  
Brian Bakke, PE  
Project Engineer  
HDR Engineering, Inc.  
300 East Locust Street Suite 201  
Des Moines, IA 50309  
Direct Phone: (515) 280-4942  
Email: [bbakke@hdrinc.com](mailto:bbakke@hdrinc.com)

RECEIVED AUG 17 2010

2. A description and citation of the specific rule from which a waiver or variance is requested. Wastewater Facilities Design Standards, Chapter 14, Paragraph 14.2.3 states that a separation distance of 400 feet shall apply from the treatment water surface to lakes and public impoundments.
3. The specific waiver or variance requested, including the precise scope and operative period that the waiver or variance will extend.

The CSSSF is a key component of the WRA's Long Term Control Plan for mitigating the impacts of combined sewer overflows. To provide the ability to capture, store, treat and ultimately discharge flows from the combined sewer area, the location of the CSSSF needs to be meet specific criteria,

- Due to the number of interrelated utilities, site security, staffing, and maintenance, there were many advantages to constructing the CSSSF in a location near the existing Wastewater Reclamation Facility.
- To divert wet weather flows to storage or treatment the CSSSF needs to be located near the termination of the proposed New Main Outfall sewer. The New Main Outfall will convey dry and wet weather flows from the combined sewer service area, including downtown Des Moines, to the WRF and CSSSF.
- To discharge CSO flows, the CSSSF needs to be in a location near the Des Moines River.

The CSSSF has been located in the only area that satisfies the operational requirements of the new facility.

The proposed construction of the CSSSF is anticipated to begin sometime between August and September, 2010. The operative period is equal to the life of the CSSSF which is 50-years or longer.

4. The relevant facts that the petitioner believes would justify a waiver or variance.

As stated above, the CSSSF is located in the only logical location that satisfies the operational requirements of the facility. If the CSSSF was relocated to the east or north to achieve the 400 feet setback requirements from Dean's Lake, the CSSSF would be within the 1,000 foot separation distance from an inhabitable residence also required by the IDNR.

The stormwater drainage at the CSSSF site has been designed to minimize any potential impacts to Dean's Lake. All paved surfaces including the site paving and access roads have been designed to be captured and conveyed back to the Wastewater Reclamation Facility instead of discharging to Dean's Lake.

The proposed location of the CSSSF is directly adjacent to where the Dean's Lake chain discharges to the Des Moines River. Therefore, any water quality impacts to Dean's Lake by the CSSSF would be confined to a small portion of the lake chain at the point it discharges to the river.

The public impoundment to the west of the facility is a low lying area intermittently hydraulically connected to the Dean's Lake chain. During periods of wet weather this

impoundment fills with water which never drains completely dry. There is probably some hydrologic connection, either through percolation or groundwater influence, from Dean's Lake to this impoundment. In any case, the justification for the variance to this water body would be the same as for Dean's Lake.

The public impoundment to the southwest of the facility is technically in the floodway of the Des Moines River and during periods of high river flow, this water body would be part of the river. In addition, the impoundment is separated from the CSSSF by the flood protection levee and cannot be impacted by the CSSSF site or drainage.

5. The history of prior contacts between the Department and the petitioner for the past five years.

The WRA is under a consent decree with the State of Iowa to mitigate the impacts of combined sewer flows. The CSSSF project is specifically required to be designed, constructed, and in operation by June 30, 2013.

6. Any information known to the petitioner regarding the Department's treatment of similar cases.

No information is known by the applicant of how the Department has handled similar cases.

7. The name, address, and telephone number of any public agency or political subdivision of the state or federal government which also regulates the activity in question, or might be affected by the granting of a waiver or variance.

No known public or federal agencies might be affected by the granting of a waiver or variance.

8. The name, address, and telephone number of any person or entity that would be adversely affected by the granting of the petition.

No known person or entity would be adversely affected by the granting of a waiver or variance.

9. In addition to the petitioners, the identity of those having knowledge of relevant facts concerning the variance.

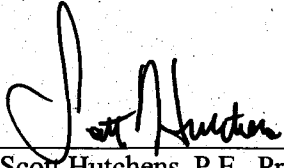
Bob Veenstra  
President  
Veenstra & Kimm, Inc.  
3000 Westown Parkway  
West Des Moines IA, 50266  
Phone: 515-225-8000

If you have any questions regarding this request for a waiver please contact Scott Hutchens at (515) 323-8031 or Brian Bakke, HDR Engineering, Inc. at (515) 280-4942.

Sincerely,

Wastewater Reclamation Authority

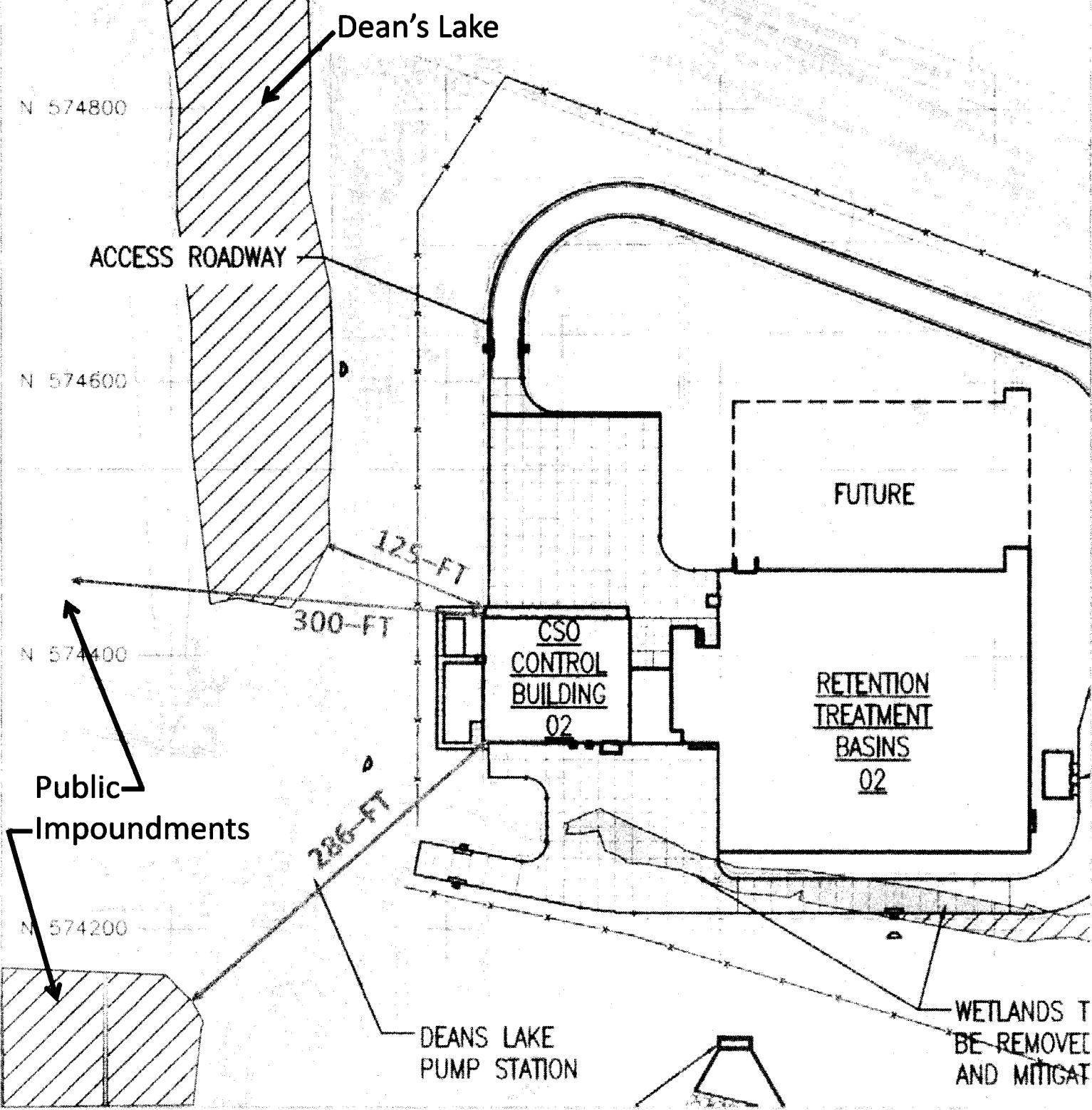
HDR Engineering, Inc.



Scott Hutchens, P.E., Project Manager



Brian Bakke, P.E.



**WRA CSSSF**

Variance Request  
Scale 1" = 100'

|        |         |
|--------|---------|
| DATE   | 7/19/10 |
| FIGURE | 1       |