



STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

August 4, 2016

City of Granger, Iowa
Attn: Mayor Cathy S. Fuson
1906 Main Street
Granger, IA 50109

RE: Twin Eagles Point Lift Station
Granger, Iowa
DNR Project No. S2016-0458A

Subject: Variance Request from Iowa Wastewater Facilities Design Standards Section 13.4.3

Honorable Mayor Fuson:

After careful and thorough consideration, the Department has approved your July 26, 2016 request for a variance from Iowa Administrative Code Subrule IAC 64.2(9a) and Chapter 13, 13.4.3 of the Iowa Wastewater Facilities Design Standards, which requires that lift station pumps, other than grinder pumps, have the capability to pass a 3-inch spherical solid.

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 a variance for the installation of a lift station pump that has the capacity to pass a 1.6-inch spherical solid installed with a trash basket with 1.5-inch or smaller openings. The requested variance is deemed to be reasonable and necessary pursuant to the Iowa Code section 455B.181.

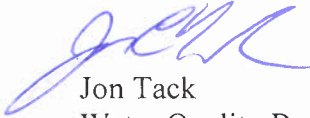
The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance 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.

Mayor Cathy S. Fuson
City of Granger, Iowa
August 4, 2016
Page 2 of 2

Please contact Marty Jacobs at 515-725-8419 or email martin.jacobs@dnr.iowa.gov if you have any questions.

Sincerely,



Jon Tack
Water Quality Bureau Chief

Cc: H. R. Veenstra Jr., P.E., Veenstra & Kimm, Inc.
DNR FO 5
DNR Sewage File 6-25-37-0-01

VARIANCE REQUEST
Iowa Department of Natural Resources

1. Date: August 2, 2016 2. Reviewer/Engr.: Marty Jacobs 3. Date Received: July 27, 2016 4. Facility Name: City of Granger 5. Facility Number: 6-25-37-0-01 6. County Number: 25 (Dallas) 7. Program Area: CP (Wastewater) 8. Facility Type: C01 (Collection/Transport) 9. Subject Area: 344 (Pump Clogging Protection) 10. Rule Reference: 567-64.2(9)a 11. Design Std. Ref.: 13.4.3 12. Consulting Engr.: V & K 13. Variance Rule: 567-64.2(9)c	14a. Decision: <i>Approved</i> Date: <i>8/4/16</i> Expiration Date (if any): 14b. 15. Appealed: Date:
16. <u>Description of Variance Request:</u> The City of Granger is requesting variance from the Iowa Wastewater Facilities Design Standards Chapter 13 – Wastewater Pumping Stations and Force Mains – 13.4.3 (Pump Openings) for installing a submersible lift station pump that does not pass a 3-inch spherical solid.	
17. <u>Applicant's/Consulting Engineer's Justification:</u> Pump impellers are now available in a non-clog design. The proposed Flygt pump is capable of passing solids up to 1.6-inch diameter. The proposed trash basket for this project has a spacing of 1.5 inches between bars allowing it to capture solids that are large enough to clog the pump. If larger solids do pass the trash basket, the pump is designed to slightly larger solids. This type of pump has been installed in numerous locations. Experience has shown that this type of pump rarely plugs. For the size of pump used at this lift station there is no acceptable manufacturer with a pump capable of passing 3-inch solids. Meeting this requirement would require the city to a less desirable pump.	
18. <u>Department's Justification:</u> Recommend variance approval. The proposed pump is able to pass a 1.6-inch solid (confirmed with previous product data from Flygt). As discussed among DNR staff for an earlier project, a trash basket with an opening of 1.5 - inches is expected to provide an approvable level of protection for the proposed pump. This is expected to provide equivalent effectiveness to an installation meeting the requirements of 13.4.3.	
19. <u>Precedents Used:</u> Waukee - 4/11/16 Tripoli - 6/13/00	
20. Staff Reviewer: <i>Winters</i>	Date: <i>8/2/16</i>
21. Supervisor: <i>Jatya Chaurapatti</i>	Date: <i>8/2/16</i>
22. Authorized by: <i>Jr Ehr</i>	Date: <i>8/4/16</i>

Jacobs, Martin [DNR]

From: Bob Veenstra <bveenstra@v-k.net>
Sent: Sunday, July 31, 2016 1:08 PM
To: Jacobs, Martin [DNR]
Subject: Granger, Iowa Twin Eagles Pointe Lift Station

Marty

This email is to clarify the variance request submitted by the City of Granger for the pumps in the Twin Eagles Pointe Lift Station. The pumps will pass a 1.6" solid and the intent is to provide a trash basket with an opening that would not be greater than 1.6". The trash basket that will be provided by the pump supplier has an opening of 1.5", or slightly less than the size of solid the pump will pass. The request is to approve the variance for the pumps passing a 1.6" solid based on providing a trash basket with a 1.5" opening in the basket structure.

Bob Veenstra
Veenstra & Kimm, Inc.
225-8000
bveenstra@v-k.net



216-07-0000
VEENSTRA & KIMM, INC.
3000 Westown Parkway • West Des Moines, Iowa 50266-1320
515-225-8000 • 515-225-7848(FAX) • 800-241-8000(WATS)

July 26, 2016

Director
c/o Satya Chennupati
Wastewater Engineering Section Supervisor
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

GRANGER, IOWA
TWIN EAGLES POINT LIFT STATION
WASTEWATER CONSTRUCTION PERMIT
VARIANCE REQUEST

In accordance with 561 Iowa Administrative Code (IAC) Chapter 10 the City of Granger is requesting a variance to the Iowa Department of Natural Resources (IDNR) Wastewater Facilities Design Standards for the Twin Eagles Point Lift Station. The applicable construction permit applications, fee form and permit application fee were submitted to the Iowa Department of Natural Resources on June 17, 2016.


The following information is being provided in accordance with IDNR's variance request guidance document.

1. Name, address and telephone number of entity requesting the variance:
 - a. City of Granger, Iowa
1906 Main
P.O. Box 333
Granger, Iowa 50109
Telephone: 515-999-2210
2. Description and citation of specific rule from which a variance is requested:
 - a. A variance is requested from Chapter 13, Section 4.3 of the IDNR Wastewater Facility Design Standards.

3. Specific variance requested, scope and operative period for which the variance will extend:
 - a. A variance request is requested from the provisions of Chapter 13, Section 4.3 requiring pumps capable of passing a 3-inch diameter sphere.
 - b. The scope of the variance relates to the two pumps to be installed in the new pump station.
 - c. The variance will extend indefinitely as once the pumps are installed the pumps will remain in service for the life of the lift station or will be replaced with a comparable pump.
4. Relevant facts justifying the variance:
 - a. Since the design standards for pump stations were approved in 1985 the design of pump impellers has evolved to a non-clog design that utilizes a smaller opening with a impeller configuration less prone to plugging.
 - b. The City is proposing the use of a Flygt pump capable of passing solids up to 1.6-inch in diameter.
 - c. The City is proposing a trash basket with a maximum opening size of 1.6 inches.
 - d. With the trash basket proposed by the City any solids larger than the size that can be passed by the pump impeller will be captured in the trash basket and will not enter the pump.
 - e. Even if a slightly larger solid were able to pass through the trash basket the design of the non-clog impeller is such that the pump will pass the solids satisfactorily.
 - f. There are numerous examples of pumps similar to the Flygt pump that have been in operation for many years without experiencing plugging. Even though the trash basket has an opening larger than 1.6 inches. Operation experience has shown this type of impeller rarely plugs.

10. Signed release:


I attest to the accuracy of the facts provided in this petition and the reasons as listed to justify issuance of the variance request:

By: 
H.R. Veenstra Jr.
City Engineer as Designated by the City Council of the
City of Granger, Iowa

I attest to the accuracy of the facts in this variance petition and the reasons as listed to justify issuance of the variance request:

Signed:

Date:

 July 26, 2016
H. Robert Veenstra Jr., P.E.
Iowa License No. 9037
My license renewal date is December 31, 2016




If you have any questions or need additional information concerning this variance request, please contact the writer at 225-8000, or at bveenstra@v-k.net.

VEENSTRA & KIMM, INC.

Original Signed By
H.R. Veenstra Jr.

H. R. Veenstra Jr.

HRVJr:pjh
132163

cc:  Marty Jacobs, Iowa Department of Natural Resources
Kristy Trzeciak, City of Granger
Ralph Brown, Brown, Fagen & Rouse

**VEENSTRA & KIMM, INC.**

3000 Westown Parkway • West Des Moines, Iowa 50266-1320

515-225-8000 • 515-225-7848(FAX) • 800-241-8000(WATS)

July 26, 2016

Director
c/o Satya Chennupati
Wastewater Engineering Section Supervisor
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

GRANGER, IOWA
TWIN EAGLES POINT LIFT STATION
WASTEWATER CONSTRUCTION PERMIT
VARIANCE REQUEST

In accordance with 561 Iowa Administrative Code (IAC) Chapter 10 the City of Granger is requesting a variance to the Iowa Department of Natural Resources (IDNR) Wastewater Facilities Design Standards for the Twin Eagles Point Lift Station. The applicable construction permit applications, fee form and permit application fee were submitted to the Iowa Department of Natural Resources on June 17, 2016.

The following information is being provided in accordance with IDNR's variance request guidance document.

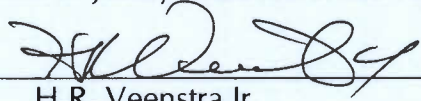
1. Name, address and telephone number of entity requesting the variance:
 - a. City of Granger, Iowa
1906 Main
P.O. Box 333
Granger, Iowa 50109
Telephone: 515-999-2210
2. Description and citation of specific rule from which a variance is requested:
 - a. A variance is requested from Chapter 13, Section 4.3 of the IDNR Wastewater Facility Design Standards.

3. Specific variance requested, scope and operative period for which the variance will extend:
 - a. A variance request is requested from the provisions of Chapter 13, Section 4.3 requiring pumps capable of passing a 3-inch diameter sphere.
 - b. The scope of the variance relates to the two pumps to be installed in the new pump station.
 - c. The variance will extend indefinitely as once the pumps are installed the pumps will remain in service for the life of the lift station or will be replaced with a comparable pump.
4. Relevant facts justifying the variance:
 - a. Since the design standards for pump stations were approved in 1985 the design of pump impellers has evolved to a non-clog design that utilizes a smaller opening with a impeller configuration less prone to plugging.
 - b. The City is proposing the use of a Flygt pump capable of passing solids up to 1.6-inch in diameter.
 - c. The City is proposing a trash basket with a maximum opening size of 1.6 inches.
 - d. With the trash basket proposed by the City any solids larger than the size that can be passed by the pump impeller will be captured in the trash basket and will not enter the pump.
 - e. Even if a slightly larger solid were able to pass through the trash basket the design of the non-clog impeller is such that the pump will pass the solids satisfactorily.
 - f. There are numerous examples of pumps similar to the Flygt pump that have been in operation for many years without experiencing plugging. Even though the trash basket has an opening larger than 1.6 inches. Operation experience has shown this type of impeller rarely plugs.

- g. For the size of pump used for the Twin Eagles Point Lift Station there are no acceptable manufacturer's with a pump capable of passing a 3-inch solid.
 - h. The design of pumps and pump impellers has evolved significantly since the design standards were approved in 1985 and the use of pumps with a smaller opening non-clog impeller is now considered industry standard practice.
 - i. The impact of not granting a variance would be to require the City to change to a much less desirable wastewater pump in lieu of a pump with a proven record of operational capability even though it does not have the ability to pass a 3-inch solid.
- 5. Contact history with the Department:
 - a. There are no known prior contacts between the City of Granger and the Department within the last five years regarding this variance request, including any notices of violation, administrative orders, contested case proceedings and/or law suits that would be relevant to this request.
- 6. Known Departments treatment of similar cases:
 - a. The engineer and City of Granger understand the Department has issued variances from Chapter 13, Section 4.3 on several occasions.
- 7. Name, address and telephone number of any public agency or political subdivision that might be affected by the granting of the variance:
 - a. None
- 8. Name, address and telephone number of any person or entity that might be affected by granting the variance:
 - a. None
- 9. Identify of those having knowledge of relevant facts concerning the variance request:
 - a. H. R. Veenstra Jr., P.E.
Veenstra & Kimm, Inc.
3000 Westown Parkway
West Des Moines, Iowa 50266

10. Signed release:

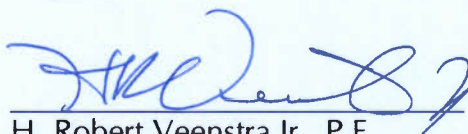
I attest to the accuracy of the facts provided in this petition and the reasons as listed to justify issuance of the variance request:

By: 
H.R. Veenstra Jr.
City Engineer as Designated by the City Council of the
City of Granger, Iowa

I attest to the accuracy of the facts in this variance petition and the reasons as listed to justify issuance of the variance request:

Signed:

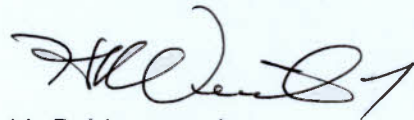
Date:

 July 26, 2016
H. Robert Veenstra Jr., P.E.
Iowa License No. 9037
My license renewal date is December 31, 2016



If you have any questions or need additional information concerning this variance request, please contact the writer at 225-8000, or at bveenstra@v-k.net.

VEENSTRA & KIMM, INC.



H. R. Veenstra Jr.

HRVJr:pjh
132163

cc: Marty Jacobs, Iowa Department of Natural Resources
Kristy Trzeciak, City of Granger
Ralph Brown, Brown, Fagen & Rouse



July 22, 2016

Satya Chennupati
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

GRANGER, IOWA
TWIN EAGLES POINT LIFT STATION
DESIGN STANDARD 13.4.3
VARIANCE REQUEST

The City of Granger is submitting this variance request from Design Standard 13.4.3 for the Twin Eagles Point Lift Station for the City of Granger, Iowa. Design Standard 13.4.3 requires pumps capable of passing a 3-inch diameter sphere.

The pumps specified for the Twin Eagles Point Lift Station are a Flygt NP 3153. The pump is capable of passing a 1.6-inch diameter sphere. The pump is equipped with a modern non-clog impeller.

The City of Granger is proposing an alternative trash basket with a maximum opening size of 1.6 inches. Attached is a copy of the submittal for the trash basket. With the 1.6-inch opening trash basket any solids that would be larger than 1.6-inch diameter would be trapped in the trash basket and not enter the pump to potentially cause a clogging problem.

The City of Granger has reviewed alternative submersible pumps. A review of the alternative pumps indicate there is no suitable pump available that will pass a 3-inch sphere. Since the design standards for pump stations were approved in 1985 the design of pump impellers has evolved to a non-clog design that utilizes a smaller opening with an impeller configuration less prone to plugging.

Operational experience indicates there are numerous pump stations currently in operation in Iowa with pumps capable of passing solids of a size similar to 1.6-inch diameter utilizing trash baskets with larger openings. There is no record of clogging of these pumps associated with the size of the impeller openings.

Satya Chennupati
July 22, 2016
Page 2

The City of Granger believes there are several factors supporting approval of its variance request. First, there are no high quality and efficient pumps of this size available capable of passing a 3-inch sphere. Second, contemporary impeller design, especially the Flygt impeller, is a non-clog design capable of operating satisfactorily even though it passes less than a 3-inch sphere. Third, the City will agree to a trash basket with a maximum opening size of 1.6 inches. The trash basket will capture any solid that would be larger than the minimum opening size of the pump impeller.

It is the City of Granger's understanding the Iowa Department of Natural Resources has approved variance requests for other pump stations with smaller than a 3-inch sphere opening as long as the trash basket opening is no greater than the minimum opening size of the pump impeller. The City of Granger believes its three justifications along with the approval of similar variances supports for the City's request for a variance to allow use for the Flygt NP 3153 pumps, even though the pump passes smaller than a 3-inch diameter solid.

If you have any questions or comments concerning the project, please contact the writer at 225-8000.

VEENSTRA & KIMM, INC.

Original Signed By
H.R. Veenstra Jr.

H. R. Veenstra Jr.

HRVJr:pjh
132163

Enclosure

cc: ✓ Marty Jacobs, Iowa Department of Natural Resources - w/enclosure
Kristy Trzeciak, City of Granger
Ralph Brown, Brown, Fagen & Rouse

