

May 21, 2007

Arthur R. Dilione
Bartlett & West Engineers
1200 SW Executive Drive
Topeka, Kansas 66615-3850

RE: Wastewater System Improvements, Hoyt, KS
Kansas Water Pollution Control Revolving Loan Fund

Dear Mr. Dilione:

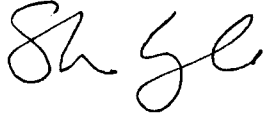
The Kansas Geological Survey (KGS) has received Bartlett & West Engineer's April 25, 2007 request for comments on the proposed wastewater system improvements submitted on behalf of the City of Hoyt, KS. The comment request is part of the grant application process for the Kansas Water Pollution Control Revolving Loan Fund. The grant will finance the applicant, the City of Hoyt, to install a new 6 in force main, influent structure rehabilitation, as well as, fencing and rip rap placement around wastewater lagoon cell 3 and 4.

A review of regional geologic information along with the project summary provided by Bartlett and West indicates that there are no unduly adverse geologic conditions that should affect this project. For the purposes of the grant application, clearance of the project should be granted. A completed request for environmental comments form is enclosed.

This letter is an assessment based on the regional geologic conditions available at the KGS at the time of writing and cannot be used in substitute of a detailed site characterization. Other geologic conditions, not discussed herein, or for which the KGS has no knowledge, may affect the viability or safe operation of this facility or property. It is the responsibility of the applicant to provide any necessary characterization, geotechnical or environmental testing, or design by a licensed professional geologist or engineer to complete the project.

Art R. Dilione
May 21, 2007
Wastewater System Improvements, Hoyt, KS
Page 2 of 2

Sincerely,

A handwritten signature in black ink, appearing to read "Sh Lyle", with a stylized, cursive script.

Shane Lyle, RG
Geology Extension Coordinator

Enclosures

cc: Dan Suchy, KGS Data Resources Library

The following form may be used by the Review Agency/Commission for comments in response to the request for clearance from the proposed State Revolving Loan Fund Project.

☐ Army Corps of Engineers
☐ Kansas Biological Survey
☐ State Conservation Commission
☐ Kansas Corporation Commission
☐ Division of Water Resources/Kansas Department of Agriculture
☒ Kansas Geological Survey
☐ Kansas State Historical Society, State Historic Preservation Office
☐ Kansas Water Office
☐ Kansas Department of Wildlife and Parks
☐ US Dept. of Agriculture - Natural Resources Conservation Service
☐ Kansas Department of Health and Environment
☐ US Department of the Interior - Fish and Wildlife Service

Agency Review Comments: (to be completed by reviewing agency and returned to applicant contact person at name and address shown below)

Comments: _____

Recommended Action: (to be completed by the reviewing agency and returned to applicant contact person at name and address shown below.)

☒ Clearance of project should be granted
☐ Clearance of project should not be granted
☐ Clearance of project should be delayed until the issues or questions have been clarified
☐ Clearance of project should not be delayed, but the applicant (in the application) should address or clarify the questions or concerns indicated above.



Reviewer's Name

KGS

Division/Agency/Commission

5-21-07

Date

Project Title: Wastewater System Improvements

Applicant: City of Hoyt, KS

Contact Person: Art R. Dilione, P.E.

Address: 1200 SW Executive Dr.

City, State: Topeka, KS

Zip: 66615

Phone: 785-272-2252

BARTLETT
WEST
ENGINEERS
SERVICE. THE BARTLETT & WEST WAY.

April 25, 2007

Kansas Geological Survey
University of Kansas
1930 Constant Ave., Campus West
Lawrence, KS 66047

Re: City of Hoyt, Kansas
Kansas Public Water Supply Loan Fund
Project No. C 20-1757-01

W.O. No.: 4545.007

To Whom It May Concern:

On behalf of the City of Hoyt, Kansas, we are soliciting comments and clearance for the referenced project, as required to be considered for Kansas Water Pollution Control Revolving Loan Fund (KWPCRLF) funding.

To assist you in your review, we have enclosed a copy of the Updated Engineering Report, which includes a description of the project and estimated project costs. We have also attached the loan application cover page which is required as part of the review process.

Due to our time constraints with the project, we would very much appreciate receiving your comments and clearances by May 25, 2007. If you have any questions or need additional information, please contact me at this office. Thank you.

Sincerely,



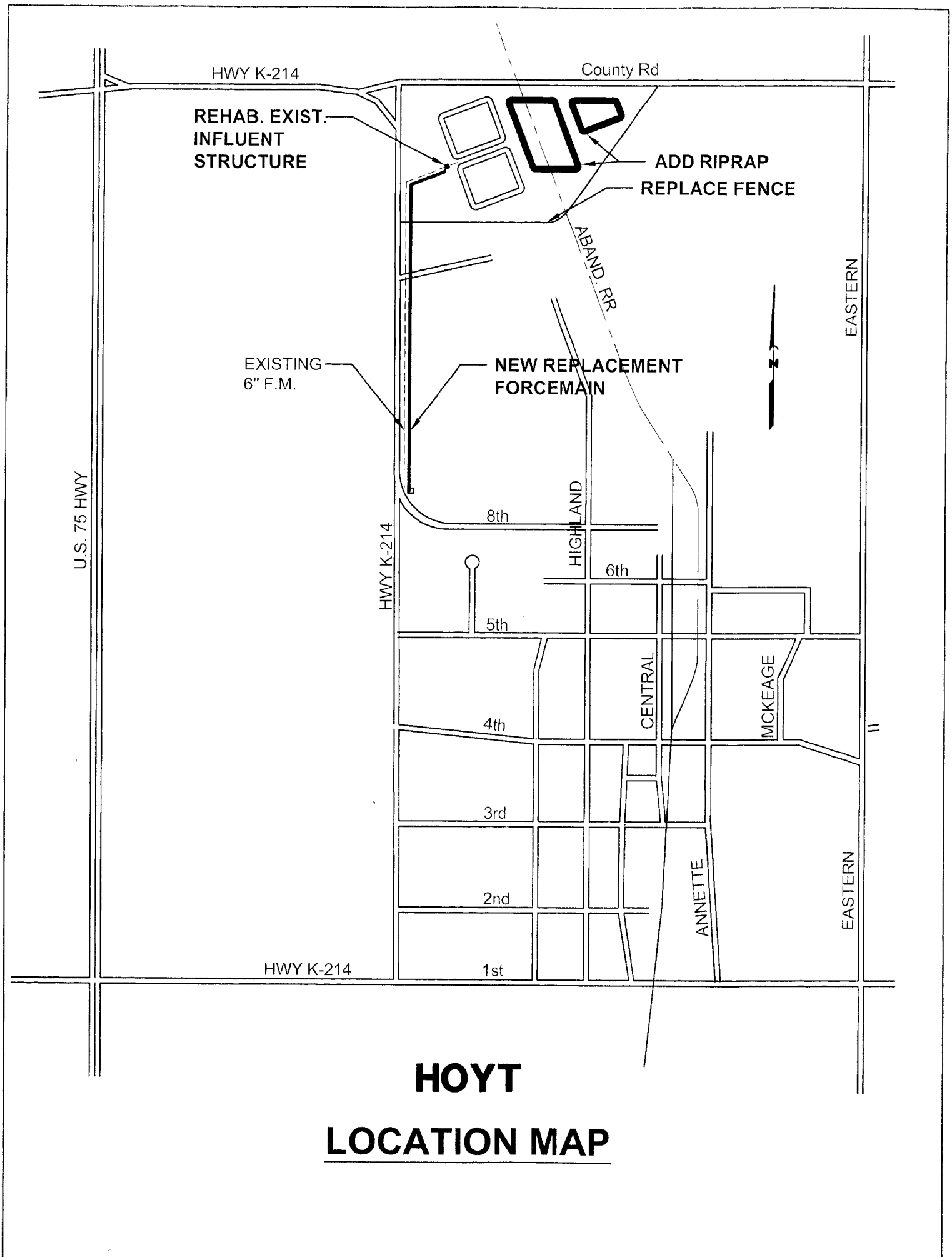
Arthur R. Dilione, P.E.

cc: Neale Sutton, City of Hoyt
Habib Ghali, KDHE – Topeka

Enclosure

1200 SW EXECUTIVE DRIVE ■ TOPEKA KS 66615-3850
785.272.2252 ■ FAX 785.272.7349 ■ 888.200.6464

WWW.BARTWEST.COM



HOYT

LOCATION MAP

ADDENDUM #1
WASTEWATER SYTEM IMPROVEMENTS

FOR
CITY OF
HOYT, KANSAS

BARTLETT
INCORPORATED IN THE STATE OF KANSAS
WEST
ENGINEERS
SERVICE. THE BARTLETT & WEST WAY.

W.O. 4545.007
FEBRUARY 2007

City of Hoyt
Wastewater System Improvements

Engineering Addendum #1

This is an addendum to the *Updated Engineering Report for the City of Hoyt, Kansas* completed in 1995. The initial concern that prompted this addendum was the condition of the 6-inch force main from the West Pump Station to the wastewater lagoons. The City has had to repair the line several times over the last few years. Once the City decided to address the initial concern with replacing the existing force main, other issues arose that were in need of consideration, including the wastewater lagoons, the fencing around the lagoons, and the influent structure at the lagoons. The following paragraphs describe the situation with each individual item. The last item is a cost estimate of the proposed work.

1. New 6-Inch Force Main

In the updated report from 1995, it was recommended that the West Pump Station force main be "pigged" and the West Pump Station replaced. Both of these items were accomplished as part of the Sanitary Sewer System Improvements constructed in the late 1990's. It has since been discovered that the over 50 year old force main was well beyond its useful life and needed to be replaced. This is evidenced by the repairs previously mentioned.

The concern with this force main is further heightened due to its location, which is either in the bottom or back slope of the drainage ditch in KDOT right of way on Highway 214. In fact, the existing force main has been damaged by ditch cleaning efforts in the past. Replacing the force main and locating it east of KDOT right of way would resolve both concerns. The new force main location will run north from the West Pump Station approximately 15 feet off of the fence line on the City's park property and the baseball diamonds.

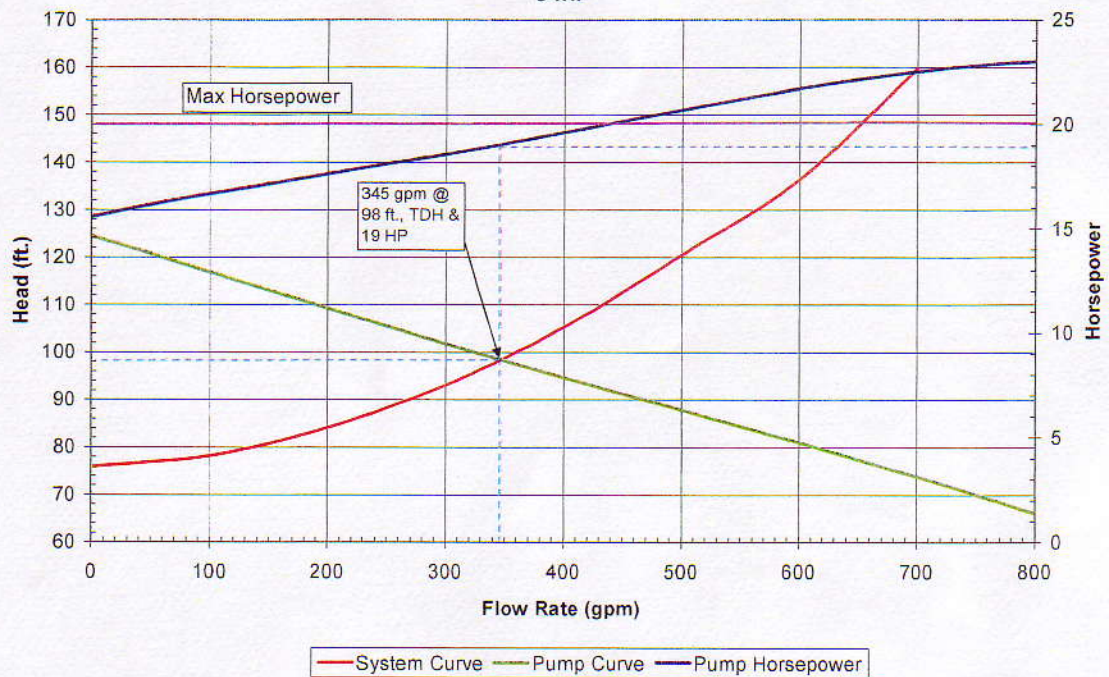
Originally, a new 8 inch force main was considered to provide additional flow capacity. When the initial calculations were performed the flow was 503 gpm but required 21 horsepower. The existing pumps have 20 horsepower motors and therefore the 8 inch force main was no longer feasible. Both the 6-inch and 8 inch scenarios are illustrated in the system curves on the next page.

The design flow for the new 6 inch force main is 345 gpm when one pump is operating and 402 gpm when both pumps are operating. This compares to a previous design flow of 300 gpm, representing a 15% increase in flow. The design flow of 345 gpm provides for a velocity of 3.9 fps. This velocity will prevent the settlement problem that plagued the old force main. This situation led us to look at simply replacing the existing 6-inch DIP force main with a new 6-inch PVC force main.

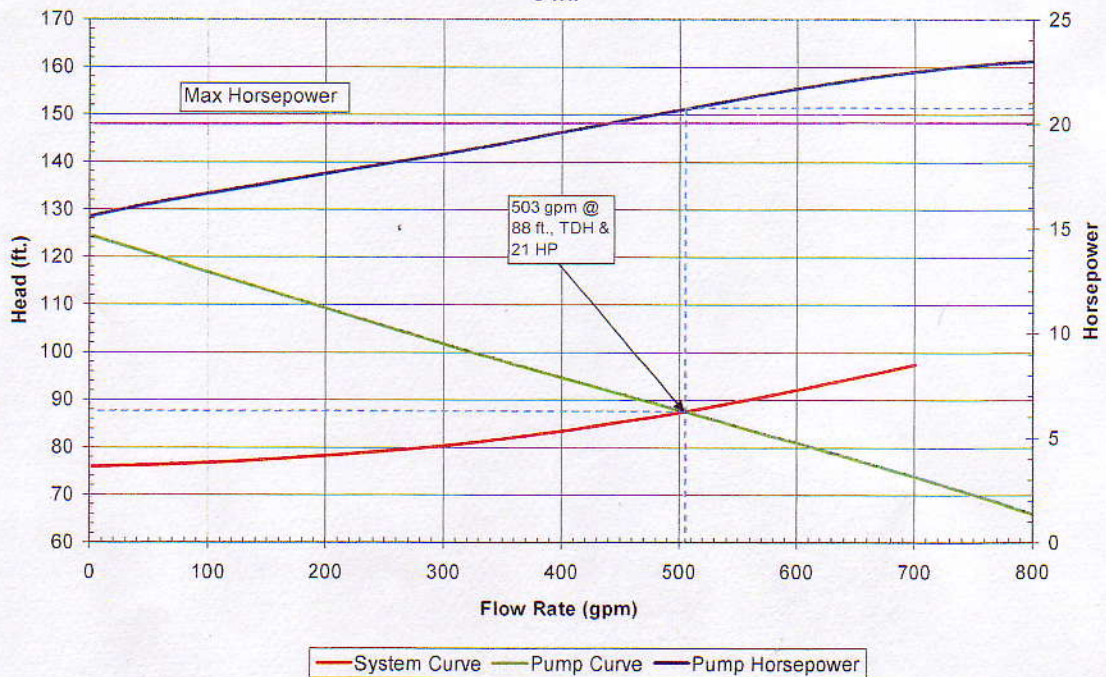
Addendum - 1

City of Hoyt Wastewater System Improvements

Hoyt, KS
West Pump Station System Head Curve
6 in.



Hoyt, KS
West Pump Station System Head Curve
8 in.



Addendum - 2

City of Hoyt Wastewater System Improvements

2. Influent Structure Rehabilitation

From a simple visual inspection of the influent structure, it is obvious that the concrete has been deteriorating for some time. This is due to the cascading action over the weir structure, illustrated in Photo 1.

As a result of the cascading, a significant amount of hydrogen sulfide is released into the enclosed space of the influent structure. The hydrogen sulfide causes the deterioration of the concrete walls inside the structure. Deposits have collected all along the weir, and the concrete walls. There is also a significant amount of flaking above the waterline. The considerable amount of deterioration is shown in Photo 2.

Rehabilitation of the influent structure is recommended, including concrete repair and installation of a corrosion resistant coating system, and replacement of the influent weir.



Photo 1

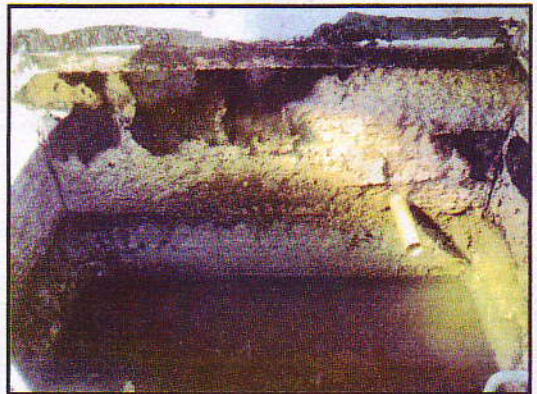


Photo 2

3. Lagoon Erosion

During site investigations the City became aware that berm erosion was becoming a problem at the wastewater lagoons. Specifically Cells 3 and 4 had experienced approximately one foot of erosion at the waterlines as shown in Photo 3. Cell 3 has an area of 2.65 acres and as such did not require rip rap in accordance with KDHE minimum design standards. This is also the case with the much smaller Cell 4 at 1.0 acre. Since the cells were under KDHE requirements, and the cells were located on the leeward side slope, it was anticipated that they would not be greatly affected by wind erosion and rip rap was not installed. This has obviously proven to not be the case.

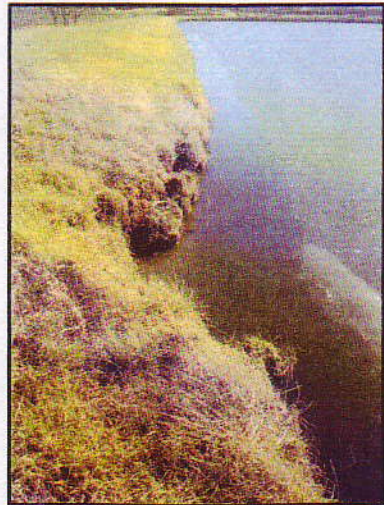


Photo 3

City of Hoyt Wastewater System Improvements

The most cost effective solution is to place rip rap at a depth of 18 inches around both cells. The rip rap will extend approximately 1 foot above the waterline and 2 feet below the water line for the entire circumference of both Cells 3 and 4. Additional erosion can be seen in Photo 4.



Photo 4

4. New Fencing

The City has also indicated that the original fencing on the south side of the wastewater lagoon property needs to be replaced. The original fencing with wood posts has become old and dilapidated and is becoming a security issue, illustrated in Photo 5. Another factor is the proximity of the lagoons to the baseball fields and park to the south. For both these reasons it is recommended that the fencing be replaced with a woven wire fence with a strand of barbwire at the top. A farm gate will be provided to allow access to the south side of the lagoons.



Photo 5

5. Cost Estimate

In the table on the following page is a construction cost estimate for the improvements outlined above. The costs are broken down by each aspect of the work. The City decided to include the cost of the 6-inch force main, influent structure rehabilitation, rip rap, and fencing as part of the SRF Loan Amendment.

**City of Hoyt
Wastewater System Improvements**

PROJECT COST ESTIMATE

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	MOBILIZATION	1	L.S.	5,000.00	5,000
2	6" FORCE MAIN	2,010	L.F.	30.00	60,300
3	REHAB FLOW STRUCTURE	1	L.S.	5,000.00	5,000
4	RIP RAP	3,250	S.Y.	42.00	136,500
5	FENCING	1,002	L.F.	10.00	10,020
6	AGGREGATE SURFACING	20	S.Y.	25.00	500
7	FARM GATE	1	L.S.	1,500.00	1,500
8	SEEDING	1.5	AC.	1,800.00	2,700

TOTAL CONSTRUCTION COSTS \$221,520

10% CONTINGENCY \$22,152

SRF PROCESSING \$4,800

ENGINEERING AMENDMENT,
HYDRAULIC ANALYSIS \$5,675

ENGINEERING DESIGN,
BIDDING \$34,100

CONST. INSP. \$48,650

TOTAL 336,897

Addendum - 5

Kansas Department of Health and Environment

APPLICATION FOR SRF LOAN ASSISTANCE		New	Amendment
Project Number	C 20-1757-01	Application Type	X
1. Legal Applicant / Recipient		2. Type of Applicant / Recipient	
Applicant Name	City of Hoyt, Kansas	A. City	
Organization Unit		B. County	
Street / PO Box	PO Box 204	C. Other (Specify)	
City	Hoyt		
County	Jackson	Enter Appropriate Letter	A
State / Zip code	Kansas, 66440		
Contact Person Name	Neale Sutton		
Telephone Number	(785) 986-6385		
3. Title of applicants project Wastewater System Improvements			
4. Type of Project See Addendum #1 for "Updated Engineering Report" for Project Description			
5. Employer Identification Number		48-0802030	
6. Area of project impact (Names of cities, counties, etc)		Hoyt, Kansas; Jackson County, Kansas	
7a. Congressional District / Applicant		2nd	
7b. Congressional District / Project		2nd	
8. Type of change		Increase dollars	\$ -
		Decrease dollars	\$ -
9. Proposed Funding			
SRF Loan 9a.	\$ 400,000	10. Project Start Date 06/01/07 (Estimated)	11. Project Duration 6 (Months)
Applicant 9b.	\$ -		
CDBG 9c.	\$ -		
EPA 9d.	\$ -		
EDA 9e.	\$ -		
Other 9f.	\$ -		
Total	\$ 400,000	12. Date Submitted 03/27/07 (To KDHE)	
13. Requested Loan Repayment Period (Must not be over 20 years)		20	
14. The applicant certifies that: To the best of my knowledge and belief, data in this pre-application / application is true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved		This notice of intent / preapplication / application was made available to the state executive order 12372 process for review on: Date	
15. Certifying Representative		Signature	
Name	Neale Sutton		
Title	Mayor		
Mail completed application to: Kansas Department of Health and Environment Bureau of Water / Attn: Rod Geisler Municipal Programs Section, Suite 420 1000 SW Jackson Street Topeka, KS 66612-1367		If you need assistance please contact: Bill Mond Administrative / Finance Section, Suite 420 1000 SW Jackson Street Topeka, KS 66612-1367 785-296-4049	