

July 22, 2007

Donna J. Crawford
Grant Administrator
Governmental Assistance Services
905 Joseph Drive
Lawrence KS 66049

RE: Environmental Review – Lyndon, KS
Sanitary Sewer Collection System Improvements Project

Dear Ms. Crawford:

The Kansas Geological Survey (KGS) has received your letter dated June 22, 2007, asking us to review the above referenced project. In general, the project involves upgrading the existing sanitary sewer collection system by lining 8,900 linear feet of existing sewer pipe, replacing 1,125 linear feet of existing 8" sewer lines, and upgrading 25 existing manholes within the city limits of Lyndon, Kansas.

A review of regional geologic information and project information provided by Governmental Assistance Services indicate that there are no unduly adverse geologic conditions that should affect this project. Site-specific conditions should be considered by the applicant prior to construction.

This letter is an assessment based on the regional geologic conditions available at the KGS 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 of the project. 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.

If you have any questions please feel free to contact me at (785) 864-2099.

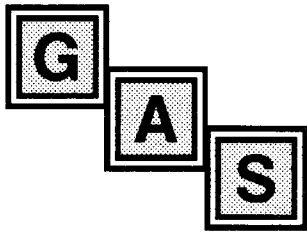
Sincerely,



Robert S. Sawin
Geologist

Enclosures

cc: Dan Suchy, KGS Data Resources Library



Governmental Assistance Services

905 Joseph Drive

Lawrence, Kansas 66049

785-832-2141 • Fax 785-832-1111

Toll Free 888-832-3335

e-mail: gasdonnaa@sunflower.com

June 22, 2007

Dr. William Harrison
Kansas Geological Survey
University of Kansas
1930 Constant Ave.- Campus West
Lawrence, KS 66047

RE: Environmental Review - Lyndon, KS – Sanitary Sewer Collection System
Improvements Project

Dear Dr. Harrison:

In 2003 the City of Lyndon, Kansas conducted an environmental review to upgrade its sanitary sewer collection & treatment system. It was decided the treatment system must be addressed first to correct urgent deficiencies. The project was separated into two phases.

On approximately June 18, 2007 the Kansas Department of Commerce awarded a \$400,000 grant to the city to complete collection system upgrades. The KDHE state revolving loan fund is injecting \$408,750 of the total project cost of \$808,750.

The city will improve 8900 LF of 8", 10" & 12" sewer pipe with CIPP/PVC slip lining, replace 1125 LF of 8" existing sewer lines, raise and upgrade 25 manholes, reset leaking manhole joints, cracks and stack ring.

The improvements are within the city limits of Lyndon, KS. Maps are attached depicting improvements which will occur in Section 6, Township 17 South, Range 16 East. Also, I am attaching the engineer's options.

Please submit your responses to Governmental Assistance Services, 905 Joseph Dr., Lawrence, KS 66049. If you have questions please call me at 888-832-3335.

Sincerely,

Donna J. Crawford
Grant Administrator

Enc/ Alternatives

Maps

Option to Purchase (land description)

not completely put an end to their system's problems. Due to broken collection piping and pipes damaged due to tree roots, the comprised collection system cannot handle usual inflow and infiltration. This inability to handle even the most modest of rain events is causing the taxpayers money. Upgrades to the collection system are necessary. In the last year, city crews have logged 12 serious residential backups. One residential backup has so far resulted in a settlement of \$5,000 due to damage caused to a resident's home. (Please find attached copy of settlement check) Also, city crews are spending a significant amount of man hours clearing collection lines to guard against the possibility of problem backups. In a normal operating collection system this would not be necessary. The Citizens and City Council are committed to meeting the needs of the entire community but these improvements to the sewer system must be accomplished before other projects are initiated.

2. Project Alternatives

a. Alternatives:

Option 1

A number of alternatives were investigated by the Lyndon City Council as they prepared for the improvements to their wastewater treatment system and collection system. The 1st option investigated was the total replacement of the existing sewer collection piping, storm drains and manhole system. This method of sanitary sewer reconstruction is the most common and in this case the most costly. Because of the exorbitant costs it is not recommended the City pursue this option. Past engineering studies have estimated replacing the entire sewer collection system could cost the City approximately \$3.8 million.

Option 2

The 2nd alternative considered was to repair necessary collection and sewer mains by the process of pipe bursting. Pipe bursting is a method of sewer line repair in which a new polyethylene pipe is pulled through the old sewer main shattering the old line. The shattered pipes thrust into the adjacent soil. The sewer laterals are also broken as the new pipe is pulled through. As a result, the sewer lateral connections must be replaced. Pipe bursting is an ideal solution for constructing new pipes without disrupting the surrounding businesses, residences, or streets. This is not a process which will work to rehabilitate the system in Lyndon. The collection system has undergone smoke testing and has been scoped with video. These tests have proved to engineers pipe bursting is not a viable option to correct the system because there are far too many cracks and sagging lines. Tree roots growing into the current lines are also a reason to not pursue this option. There are no cost estimates for this option because it would not be mechanically feasible to pursue such a course.

Option 3

The 3rd alternative is the only option which has been recommended and the only option which is mechanically sound. Engineering designs call for the rehabilitation using a combination of Cured in Place Pipe (CIPP), point repair, and replacement of 1125 LF of sewer line. This method of pipe rehabilitation inserts a high density polyethylene liner filled with resin into the sewer liners. The liner is inverted and propelled through the deteriorated pipe using water pressure. Once the inverted liner is in place, hot water is circulated through it causing the resin to seal the liner against the pipe. Finally, the CIPP liner is cut where the sewer laterals are located using a robotically controlled saw. Engineers estimate total project costs for Option 3 to be \$808,750.

b. Scope of Work:

These collection system improvements involve upgrading 8,900 LF of 8"-12" piping with CIPP/PVC slip lining and point repair to the 8"-12" pipes in 20' sections. These plans call to replace 1125 LF of existing sewer line and raise 25 manholes to prevent storm water inflow and rest the existing rings and covers up to 1 ft. At least 10 manholes throughout the City would be sealed improving their existing cracks, stack rings, pipe penetrations, and leaking joints by cementacious grout. There would need to be significant seeding, gravel surface restoration and road repair. Also there would be a 6" asphalt road patch constructed around the manholes where needed.

Upon award the administrator will publish the Combined Notice of Finding of No Significant Impact on the Environment and Request for Release of Funds on or about January 20, 2007. Advertisement for construction bids will be published after a 15-day waiting period to allow for public comment, on February 15, 2007. Upon KDHE approval it is anticipated the city will officially award the contract on March 15, 2007. Engineering estimates call for final completion of the project by September, 2007.

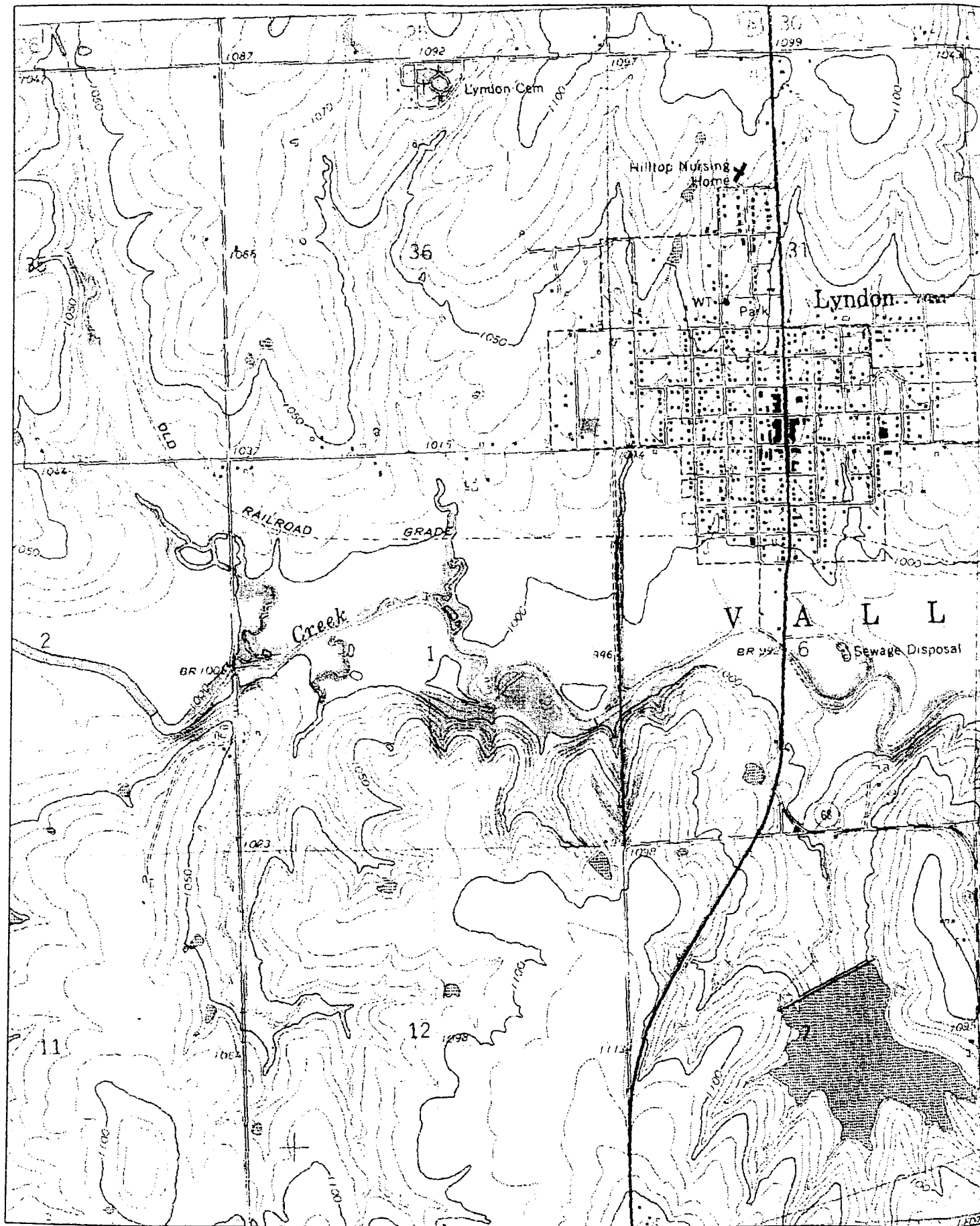
Community Development Block Grant funds will only pay for construction (\$381,750) and administration (\$18,250) costs. A total of \$400,000 or approximately \$400 per beneficiary.

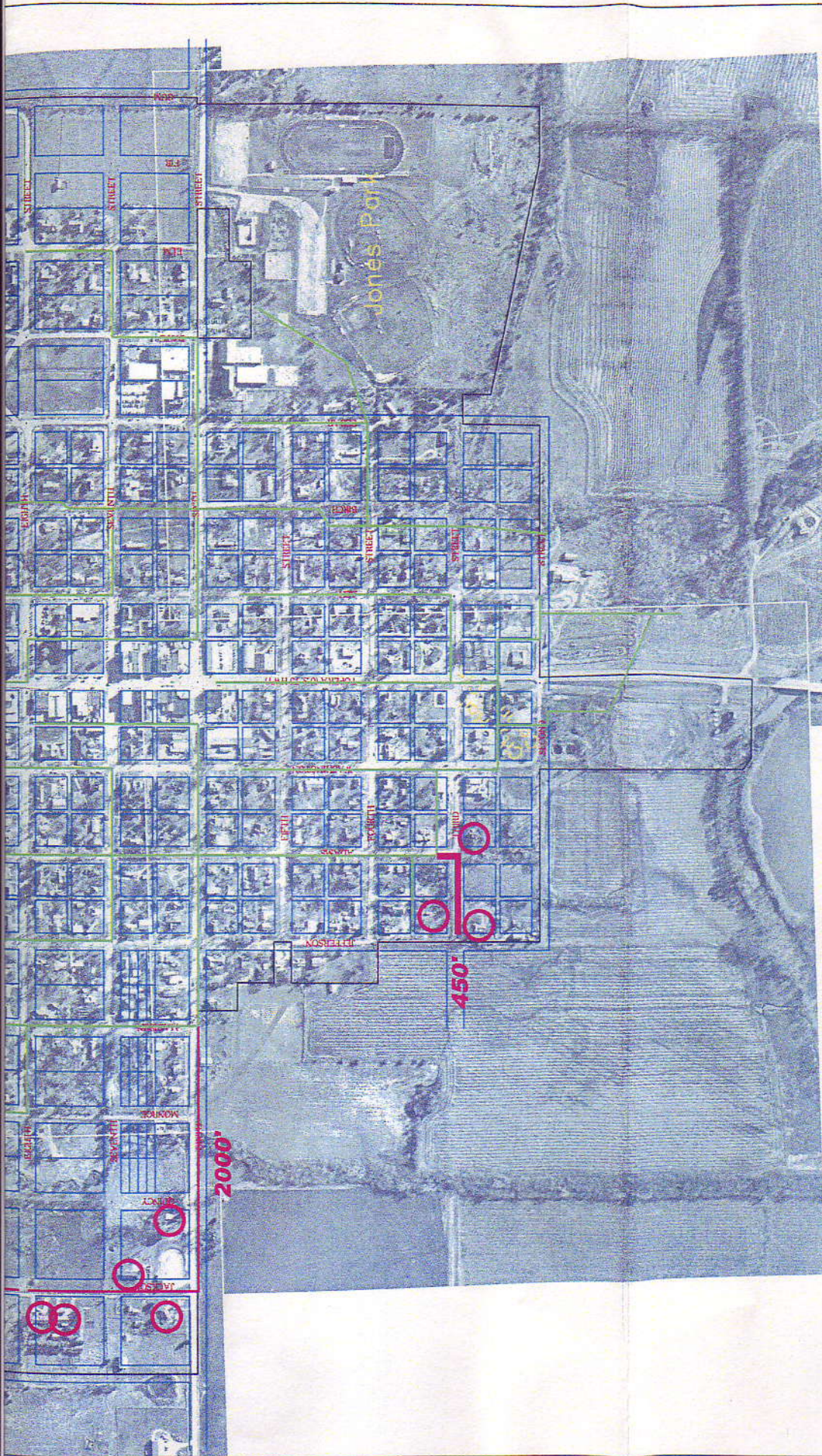
c. Force Account Construction:

There will be no force account construction used in the scope of this project.

3. Past Efforts to Address Need:

Lyndon has been actively working to address the needs of the community and has major projects in construction to improve their water system and wastewater lagoon system. The city initiated a water system improvement with the assistance of Rural Development. This project has involved replacing 10,000 LF of water lines and erecting a new 300,000 gallon water storage tank while constructing a permanent connection to the RWD #12. Total project cost when completed will be \$1.1 million.





AERIAL PHOTOGRAPHY BY WESTERN AIR
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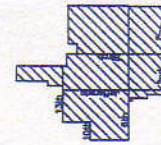
COMPILED BY:
**KIRKHAM
MICHAEL**
CONSULTING ENGINEERS
1000 10th Street, Suite 100, Lyndon, KS 67654
(913) 331-1111

City of Lyndon, KS Aerial Photography & Base Map

200' 0 200' 400'
SCALE: 1"=200'



EXISTING PROPERTY LINES,
RIGHTS-OF-WAY, AND UTILITY LINE
LOCATIONS SHOWN ON THIS MAP ARE
APPROXIMATE BASED UPON AVAILABLE
AERIAL PHOTOGRAPHY, CITY RECORDS,
IMPROVEMENT PLANS AND CITY STAFF
COMMENTS. THE ACCURACY OF THE
SHOWN LEGAL BOUNDARIES AND UTILITY
LOCATIONS IS NOT GUARANTEED.
REFERENCE ONLY AND ARE NOT
SUITABLE FOR THE DETERMINATION OR
TRANSFER OF PROPERTY OWNERSHIP,
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OR ANY OTHER SIMILAR WORK. THE CITY
AND ITS CONSULTANT(S) ASSUME NO
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Section
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