

November 25, 2008

Mike Kelsey, P.E., Project Engineer
Professional Engineering Consultants, P.A.
303 S. Topeka
Wichita, KS 67202

Re: City of El Dorado water system improvements

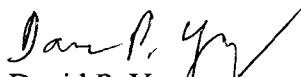
Dear Mr. Kelsey,

The Kansas Geological Survey (KGS) has received your October 29, 2008 letter requesting us to review the above referenced project. The project consists of construction of a booster pump station and segments to complete a 12-inch water line loop serving the northwest quadrant of the City of El Dorado, Kansas.

A review of regional geologic information and project information provided by you indicates that the project is located within the El Dorado oil field. Therefore, site-specific conditions associated with petroleum products and production may need to be further considered by the applicant to establish environmental due diligence. A completed project review form is enclosed.

This letter is an assessment based on information about the regional geologic conditions available via 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.

Sincerely,


David P. Young,
Hydrologist

Encl

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 Public Water Supply Loan Fund Project.

_____	Army Corps of Engineers
_____	Kansas Biological Survey
_____	State Conservation Commission
_____	Kansas Corporation Commission
_____	Division of Water Resources/Kansas Department of Agriculture
<u>✓</u> _____	Kansas Geological Survey
_____	Kansas State Historical Society, State Historic Preservation Office
_____	Kansas Water Office
_____	Kansas Department of Wildlife & Parks
_____	US Dept of Agriculture - Natural Resources Conservation Service
_____	Kansas Department of Health and Environment
_____	US Dept 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: Please see cover letter

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

<u>✓</u> _____	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.)

Dan P. G.
Reviewer's Name

KGS
Division/Agency/Commission

11/25/08
Date

Project Title: Public Water Supply Loan Fund Application

Applicant: City of El Dorado, Kansas

Contact Person: Mike Kelsey, P.E. Project Engineer

Address: _____

City, State: _____ Zip: _____ Phone: (316) 262-2691



Professional Engineering Consultants, P.A.

RE: City of El Dorado, Kansas
Kansas Public Water Supply Loan Fund
Project No. 2534

October 29, 2008

TO WHOM IT MAY CONCERN:

The City of El Dorado, Kansas is preparing an application to the Kansas Department of Health and Environment for a loan from the Kansas Public Water Supply Loan Fund for the referenced project.

The proposed project will construct a booster pump station and segments to complete a 12-inch water line loop serving the northwest quadrant of the City of El Dorado, Kansas. Please refer to attached aerial photo site map showing location of proposed 12-inch water line segments and proposed site for booster pump station. Estimated project costs are \$2,200,000.00.

We would appreciate your review of the project description and location (as shown on the attached map), and any comments you may have, within 30 days of receipt of this request. A project review form is enclosed for your convenient use.

Please call Mike Kelsey, P.E. at 316-262-2691 should you have any questions regarding this project.

Please send your comments to:
Mike Kelsey, P.E., Project Engineer
Professional Engineering Consultants, P.A.
303 S. Topeka
Wichita, KS 67202

Thank you for your review comments on this project.

Sincerely,

PROFESSIONAL ENGINEERING CONSULTANTS, P.A.

A handwritten signature in black ink that reads "Mike Kelsey".

Mike Kelsey, P.E.
Project Engineer

Attachments/project description with aerial map

PROJECT DESCRIPTION
WATER DISTRIBUTION SYSTEM STUDY IMPROVEMENTS, PHASE I

PEC Project No. 35-07164-347

KDHE Project No. 2534

Northwest Pressure Zone Improvements, City of El Dorado, Kansas

Phase I Improvements: Variable Frequency Drive Booster Pump Station; Installation of minimal 12-inch water mains to complete looping of system and integrate with Booster Pump Station. These improvements will create a west pressure zone for the City.

Project Improvements are supported by a comprehensive Water Distribution System Study completed in the spring of 2008 and presented to the City Commission in a workshop on March 12, 2008.

Excerpts from the Water Distribution System Study follow:

Purpose: Presently all the City of El Dorado's existing water towers are at the same elevation and receive their water supply from the high service pumps located at the water treatment facility. Therefore, the City has always operated their distribution system as one common "pressure zone." Due to the substantial elevation differences throughout the City, the single "pressure zone" creates pressures concerns and issues in the west and northeast areas of the City.

Data Research and Model Generation: Professional Engineering Consultants was retained to complete a study of the entire distribution system. Their tasks included review of available water use, review of population data, interviews with City Staff, performance of extensive field tests, and generation of a computer model for the entire distribution system.

Recommendations: To increase pressures to the western most portions of the City, a new pressure zone must be created. In the short term, this can be accomplished by isolating the west portion of the City and constructing a booster pump station. Long term improvements will require a new tower, a 24-inch supply line and an additional clearwell and high service pumps at the water treatment facility.

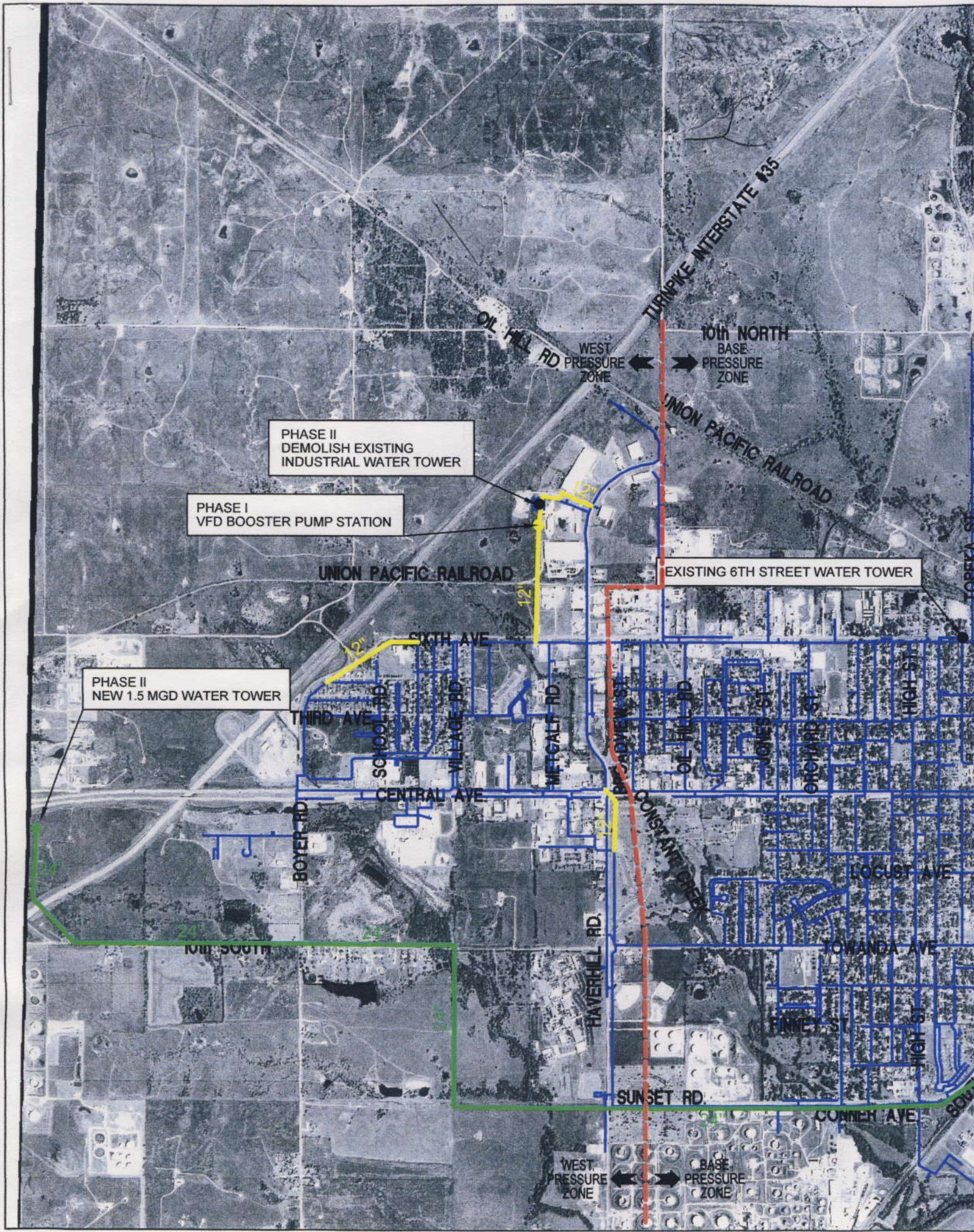
The proposed improvements are separated into two phases. The request for loan funds will finance Phase I of the two phases described below:

PHASE I • Create a west pressure zone. Isolate the west distribution system from the east distribution system along Haverhill Road. Install minimal segments of 12-inch water mains together with a variable frequency drive booster pump station near the Industrial Park Water Tower. Use the Industrial Park Water Tower as storage for the new booster pump station.	
TOTAL PROJECT COSTS FOR PHASE I:	\$2,200,000.00

PHASE II • Increase storage and pumping capacity. As the system demands increase in the long term future, it will become necessary to increase water distribution storage and pumping capacity. Install a new 1.5 MG storage tank in the west pressure zone. Install a new high service pump station and clearwell at the water treatment facility. Install new 24-inch transmission main from the water treatment facility to the new tower. Remove the Industrial Park Water Tower from service and relocate the Phase I booster pump station to serve the more northern areas of the City of El Dorado.

TOTAL PROJECT COSTS FOR PHASE I:

\$11,400,000.00



PHASE II
VFD BOOSTER PUMP STATION
MOVED FROM PHASE I

EXISTING McCOLLUM WATER TOWER

NORTH
PRESSURE
ZONE
BASE
PRESSURE
ZONE

NORTH
PRESSURE
ZONE
BASE
PRESSURE
ZONE

SCALE: 1" = 2,000'

PROPOSED IMPROVEMENTS FIGURE 1

LEGEND

- EXISTING WATERLINE
- PHASE I - 12" WATERLINE
- PHASE II - 24" WATERLINE
- - - PRESSURE ZONE LIMITS

CITY OF EL DORADO
BUTLER COUNTY
JANUARY 2008



**Professional
Engineering
Consultants, P.A.**

EXISTING HIGH SERVICE PUMP STATION

PHASE II
ADDITIONAL HIGH SERVICE
PUMP STATION AND CLEAR WELL

