ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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PAT QUINN, GOVERNOR

Project Summary and Preliminary
Environmental Impacts Determination

Date: DEC - 5 2011

Loan Applicant: City of Carbondale, IEPA Loan Project Number: L173113

To all interested persons:

Section 662.520 of the Illinois Procedures for Issuing Loans from the Public Water Supply Loan Program requires that IEPA publish an assessment of the environmental impacts of proposed public water supply projects to be funded with loans. This review is carried out in conjunction with the Agency's review of the applicant's project plan. Prior to granting its approval of the plan, the Agency requires that the public be granted an opportunity to comment as to whether or not the anticipated impacts of the project have been accurately assessed.

The IEPA has reviewed the above cited project plan and concurs with the applicant's findings that the proposed project is technically appropriate and cost-effective. Unless new information provided through the public comment process causes reconsideration, the Agency will approve this planning at the close of the public comment period.

The applicant will make the attached Project Summary and Preliminary Environmental Impacts Determination (PEID) available for public inspection and must conduct a public hearing within 60 days of receipt on both the PEID and project planning, providing advertisement of the hearing at least 10 days in advance. A comment period of at least 10 days shall be provided after the hearing date in which written comments may be provided to the loan applicant or directly to the IEPA contact person identified in the attached document. Upon final approval of the plan, the project priority score may be modified to reflect new information provided in the planning in accordance with the provisions of Section 663.160 of the Procedures and Requirements for Determining Loan Priorities of Projects in the Public Water Supply Loan Program.

For information purposes only, a copy of this document is being provided to your local newspaper of record.

Your interest and participation in this process are appreciated.

Sincerely,

J. Geoffrey Andres, Manager
Infrastructure Financial Assistance Section
Bureau of Water

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Attachment

Project Summary and Environmental Assessment

Project Identification

Park Street Storage Tank

City of Carbondale
200 South Illinois Avenue
Carbondale, IL 62903

Jackson County

Existing Situation and Project Justification

The City of Carbondale owns and operates a public water system that serves City residents and several local public water districts (PWDs) including: Lakeside PWD, South Highway PWD, SIU Properties, and Buncombe Water District. The main source of water is Cedar Lake which was built by the City in 1975. A second lake, City Reservoir, was constructed in 1924 and is maintained as a backup water supply. Prior to distribution, raw water from both lakes is treated at the McLafferty Road water treatment plant. Treatment includes clarification, filtration, chemical addition, and disinfection.

The public water system has five (5) finished water storage facilities with a total volume of 6,350,000 gallons. The largest storage facility is located on Wall Street and consists of two (2) underground storage tanks with a combined volume of 2,850,000 gallons (2.85 MG). The tanks were constructed in 1955 and 1965.

Public water systems in Illinois must comply with a variety of regulations and follow design standards appearing in *The Recommended Standards for Water Works*. The *Recommended Standards* contains three requirements regarding the location of ground-level storage reservoirs and tanks. These include locating the bottom of the tank at ground surface level, and above the maximum flood level. If this is not possible, the bottom of the tank should be above the groundwater table and at least half (50%) of the water storage should be above grade. Finally, the top of the tank should be at least two feet above ground surface level. The Wall Street underground storage facility does not meet any of these design criteria. Both tanks are located below grade and in a floodplain. The area has flooded numerous times and the storage facility must be replaced.

Evaluation of Alternatives

The new water storage tank should be approximately the same volume as the Wall Street facility in order to maintain the proper storage requirements for the entire water system. A correctly sized storage tank must provide enough water to meet the system's peak demand and also help maintain adequate pressure throughout the distribution system. The recommended amount of storage capacity for a public water supply is normally between 1.0 and 1.5 times the average

daily usage. This recommendation does not include additional storage for fire protection. Other factors considered when selecting a storage tank are fire protection, industrial needs, and population trends.

Improving the existing Wall Street underground facility is not an option, because it is located within a floodplain. An elevated storage tank could be constructed at the current location; however, the construction costs for an elevated tank are significantly higher than a ground-level storage tank of the same capacity. Only about 15% of the total water storage in Carbondale is elevated; the other 85% is ground level. Ground-level storage tanks typically cost more to maintain, because pumping stations are required to move water into the distribution system. Pumping stations also require emergency power sources to pump water during a power outage. By constructing an elevated tank, energy costs could be reduced.

Carbondale's distribution system operates as a single pressure zone, but has significant elevation changes that cause some customers to experience water pressure variations. These pressure changes could be reduced if the system included another elevated storage tank.

Proposed Project

The City is proposing to construct a new 3,000,000-gallon (3 MG) ground-level tank at 1070 East Park Street which is a 0.41 acre site. The City was granted a permanent easement to this site. The site's elevation of 500 feet will allow the construction of a ground-level storage tank that will function as an elevated storage tank. Construction of a pump station will not be required. The new tank will include a mixing system to prevent problems common with large storage tanks such as loss of disinfectant residual during storage. This slightly larger tank size was chosen to meet recommended capacity guidelines while accommodating some growth and fire protection. 3 MG is a common tank size so costs will be less than constructing a 2.85 MG tank. This alternative was should minimize both construction and operating costs, but maximize system reliability.

A transmission main will be constructed to connect the new tank to the existing distribution system. This transmission main will be approximately 1,700 linear feet and 18-inches in diameter. Construction of the water main will take place in public rights-of-way from Grand Avenue south along Lewis Lane and Park Street to a point adjacent to the tank site. A map is attached. The existing water storage facility will be disassembled and abandoned.

Environmental Impacts

All water main construction will take place within utility rights-a-way. Minor adverse environmental impacts will occur during construction of the project. These include traffic disruptions, construction-associated noise, dust, air emissions, and soil erosion. During construction, soil erosion control measures shall be implemented.

State and federal Agencies have provided comments regarding the proposed project. The State Historic Preservation Officer has verified that no historic properties will be affected by the project. The Illinois Department of Natural Resources (IDNR) reviewed the project to determine compliance with the Illinois Endangered Species Act, Illinois Natural Areas Preservation Act,

and the Illinois Wetlands Act. The review indicated that no impacts are expected on wetlands, rare or endangered species, natural areas, or nature preserves. Information provided by the City affirms that negative impacts are not expected to cultural resources, prime agricultural land, stream crossings, floodplains, or any other sensitive areas.

The positive benefits of the proposed project far outweigh the minor adverse impacts. The City needs a storage facility that complies with all state regulations and design criteria. The new Park Street storage tank will meet all *Recommended Standards for Water Works* and safeguard the City's drinking water from possible floodwater contamination.

Costs and Project Implementation

Project design is complete and once construction is initiated, it is expected to take nine months to complete. The recommended project costs are as follows:

Elevated Storage Tank Costs	
Construction of New Water Storage Facility	$2,865,000
Water Main Extension	390,000
Demolition and Removal of Wall Street Facility	25,000
Legal and Financial	25,000
Design Engineering including Bidding	190,000
Construction Engineering	220,000
Contingencies	185,000
Total Project Cost	$3,900,000

Financial Impacts

The cost estimate for the project is $3,900,000. The City is proposing to finance the costs with a loan from the Public Water Supply Loan Program (PWSLP). The City will dedicate a portion of its water user charges to repay the loan. Annual repayments on a PWSLP loan for $3,900,000 at the current interest rate of 2.295% for 20 years are $244,262.

A typical household in Carbondale uses 5,400 gallons of water per month. The average residential user charge for water service is $17.23 per month based on a rate of $3.19 per 1,000 gallons of water: $3.19 x 5.4 = $17.23. This rate is charged for most users of Carbondale's water system. The exceptions are listed on the table below.

Carbondale's Current Rate Structure per 1,000 gallons	
Southern IL University	$2.89
South Highway Public Water District	$2.89
Buncombe Water District	$2.89
Lakeside Water District	$3.00
Standard Rate	$3.19
Crab Orchard Water District (recently acquired by Carbondale)	$5.16

A rate increase is necessary to repay the loan. The City has proposed increasing the rate by $0.20 per 1,000 gallons for all customers. When the rate increase goes into effect, the average monthly bill will increase by $1.08 per month from $17.23 to $18.31 ($3.39 x 5.4 = $18.31). This is an increase of 6.27% for residents using 5,400 gallons of water per month. The rate increase will generate an additional $269,336 annually which will be used for loan repayment and O, M, & R.

In order to determine the financial impact of the proposed project on City residents, a percentage comparison of the area median household income (MHI) versus the proposed annual cost for water was utilized. Carbondale's MHI is $15,761. After the new storage facility is constructed, the estimated percentage of median household income necessary to pay the annual user charge will be 1.40%. This percentage is within the Agency's affordability guidelines of less than 2.00%. It does not appear that the planned rate increase will have a significant financial impact on the average customer; however, any rate increase could be burdensome for low income residents and customers previously served by the Crab Orchard Water District who are already paying a higher rate.

During fiscal year 2012, the PWSLP is offering 25% principal forgiveness to communities with a MHI below the state average of $53,974. The maximum amount of principal forgiveness to each entity is of $1,000,000. Annual repayments on a PWSLP loan of $2,925,000 ($3,900,000 – 25%) at an interest rate of 2.295% for 20 years are $183,196. If the City is able to secure project funding while principal forgiveness is being offered, the lower loan payments will result in a savings of more than $60,000 per year.

Public Participation

Public comments are invited on the proposed project. For further information contact:

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Infrastructure Financial Assistance Section
Bureau of Water
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Springfield, Illinois 62794-9276

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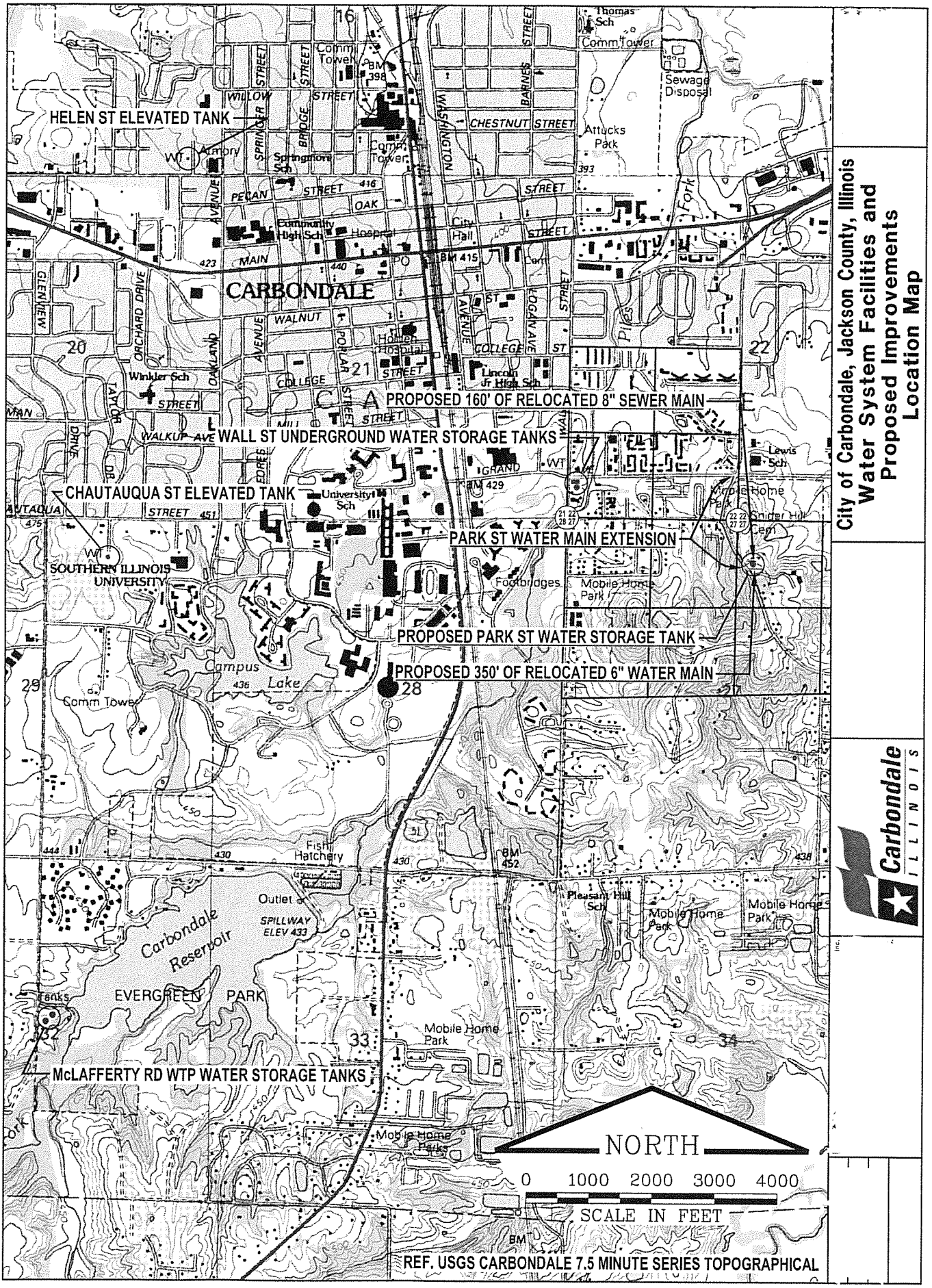

City of Carbondale, Jackson County, Illinois
Water System Facilities and Proposed Improvements
Location Map

Carbondale ILLINOIS