

# CITY COUNCIL STUDY SESSION

**TO:** Mayor and City Council  
**FROM:** Melanie L. Robinson-Smith, Assistant City Manager  
**SESSION DATE:** August 6, 2012  
**TIME:** 4:30 p.m.  
**PLACE:** Second Floor Conference Room of City Hall

## **AGENDA:**

- **JOURNAL PRINTING BUILDING**
- **REVIEW RESULTS OF INVESTMENT GRADE AUDIT**
- **REVIEW WATER CONSERVATION POLICY**
- **REVIEW COUNCIL AGENDA**
- **REVIEW NEWSLETTERS**

## **JOURNAL PRINTING BUILDING**

Dan Vogt and Kevin Kuckelman contacted City staff in April of 2012 to discuss a possible renovation of the Journal Printing Building that was in the initial planning phases. Mr. Vogt currently owns several businesses locally including the Wooden Nickel and the Journal Building. Mr. Vogt and Mr. Kuckelman will be in attendance at the Study Session to discuss the potential renovation project at the Journal Building that would include increased accessibility and seven units of upper level housing. Their intent is to make application to the State of Missouri for Housing Tax Credits as well as Historic Tax Credits to assist in funding a complete remodel of the building.

**Recommendation:** Council is asked to listen to the presentation asking questions as you deem necessary. Previous support from the City Council has been in the form of a Resolution. Deadline submissions are typically due in October.

## **REVIEW RESULTS OF INVESTMENT GRADE AUDIT**

In 1997, the state legislature enacted legislation that allows governmental units, including local governments within the state of Missouri, to pursue energy savings through performance contracting. Performance contracts provide the governmental entity a guaranteed energy cost savings contract over a specified period of time. If the savings are not generated as outlined, then the performance contractor is liable to the governmental entity to make up the difference.

Performance contracting is a way to improve efficiency in operations giving the government additional funds to use for other operational costs. City staff began discussing performance contracting with three vendors starting in 2010. Face to face

interviews with these firms were held in January of 2011 to learn more about performance contracting and to determine if this is something that should be considered further. Requests for Qualifications were solicited in April of 2011 from several qualified vendors.

A committee consisting of several department managers, the City Manager and Mayor Pro Tem Fajkus conducted interviews, followed by an evaluation of each firm. Schneider Electric was selected as the top vendor through the process. In June of 2012, Schneider Electric attended the City Council Study Session to discuss the process and the initial Investment Grade Audit.

Representatives from Schneider Electric will be in attendance at the Study Session to present the Midterm Investment Grade Audit findings.

**Recommendation:** Council is asked to listen to the presentation asking questions as you deem necessary and then discuss with staff the direction in which you would like to go.

### **REVIEW WATER CONSERVATION POLICY**

The third item is a general review of the City's Water Conservation Policy. With the state drought declaration, it is important to know that there is a policy in place and to discuss this policy with the Council. It is also important to know that we have sufficient water supply at this time, and that we are monitoring things. We wish to review the Water Conservation Plan for the City. The current ordinance was adopted in 2000 following a drought. The purpose is to be responsive to the conditions affecting the available levels of water used for drinking. Please review the Staff Report provided at the end of this Study Session Packet and the current ordinance language.

**Recommendation:** Council is asked to listen to the presentation asking questions as you deem necessary.

### **REVIEW COUNCIL AGENDA**

### **NEWSLETTER REVIEW**

#### Attachments

- Journal Building Proposal
- Performance Contracting Mid-Term Investment Grade Audit – Brad Selby
- Midterm Review
- Kirksville Water Supply and Drought Response Staff Report – John Buckwalter
- Water Conservation Plan Ordinance

## HISTORIC JOURNAL PILOT BUILDING

Dan and Judy Vogt are in the process of applying for funding to completely renovate and restore the Journal Building located at 119 South Elson Street in Kirksville, MO.

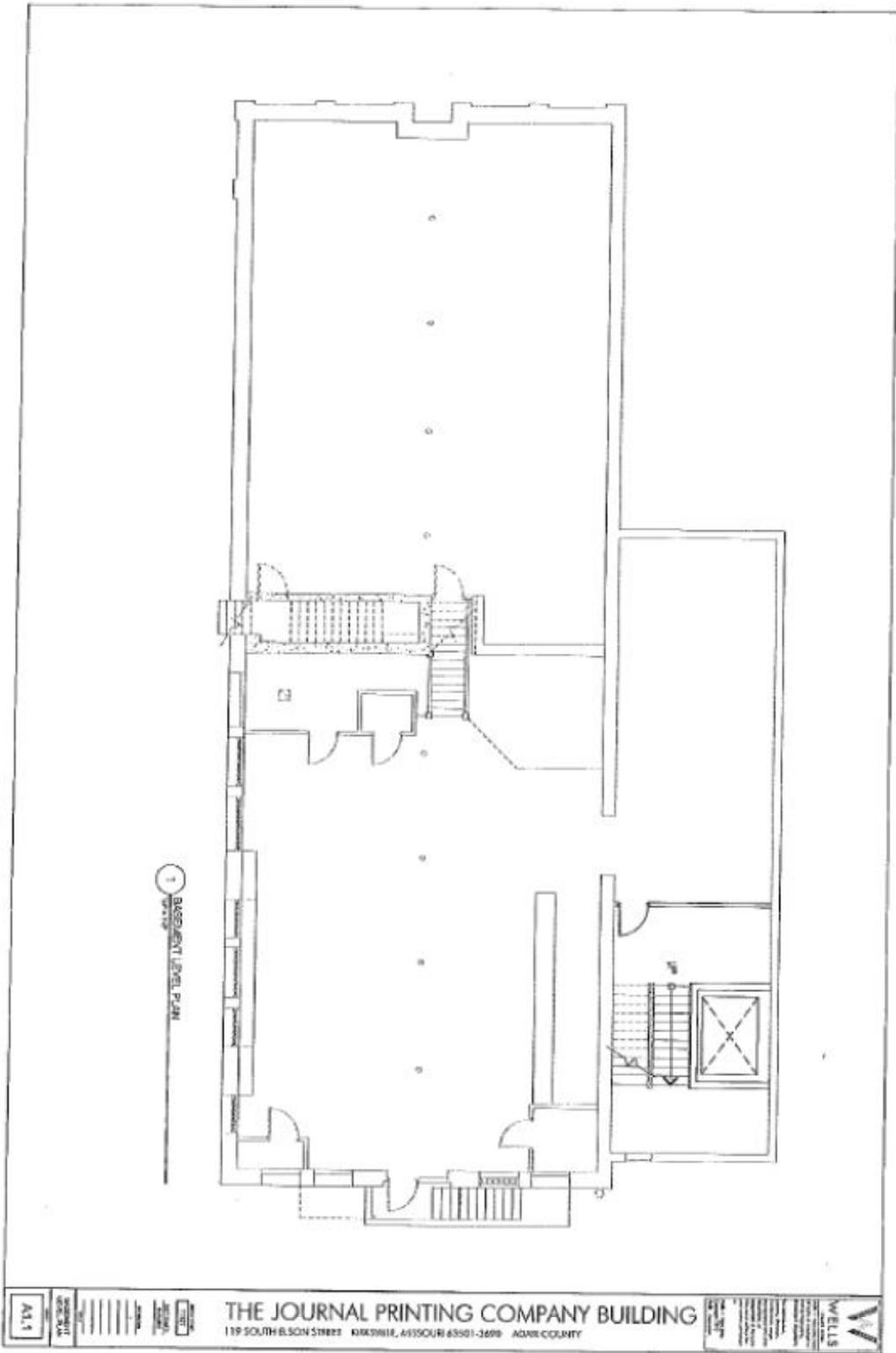
The sources of funding being sought are:

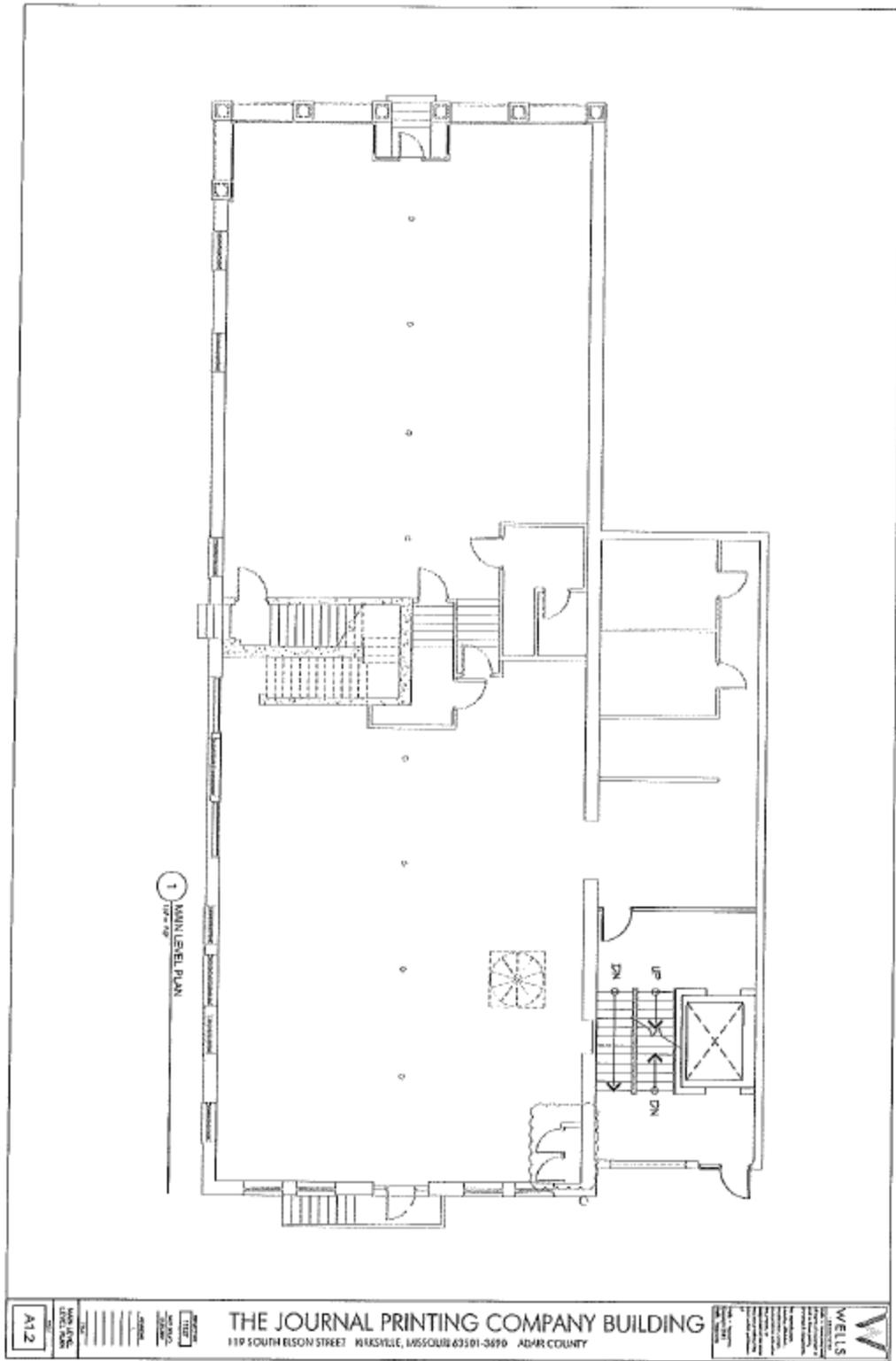
- Historic Preservation Tax Credits – Federal
- Historic Preservation Tax Credits – State
- Low Income Housing Tax Credits – Federal (Target Market – Students)

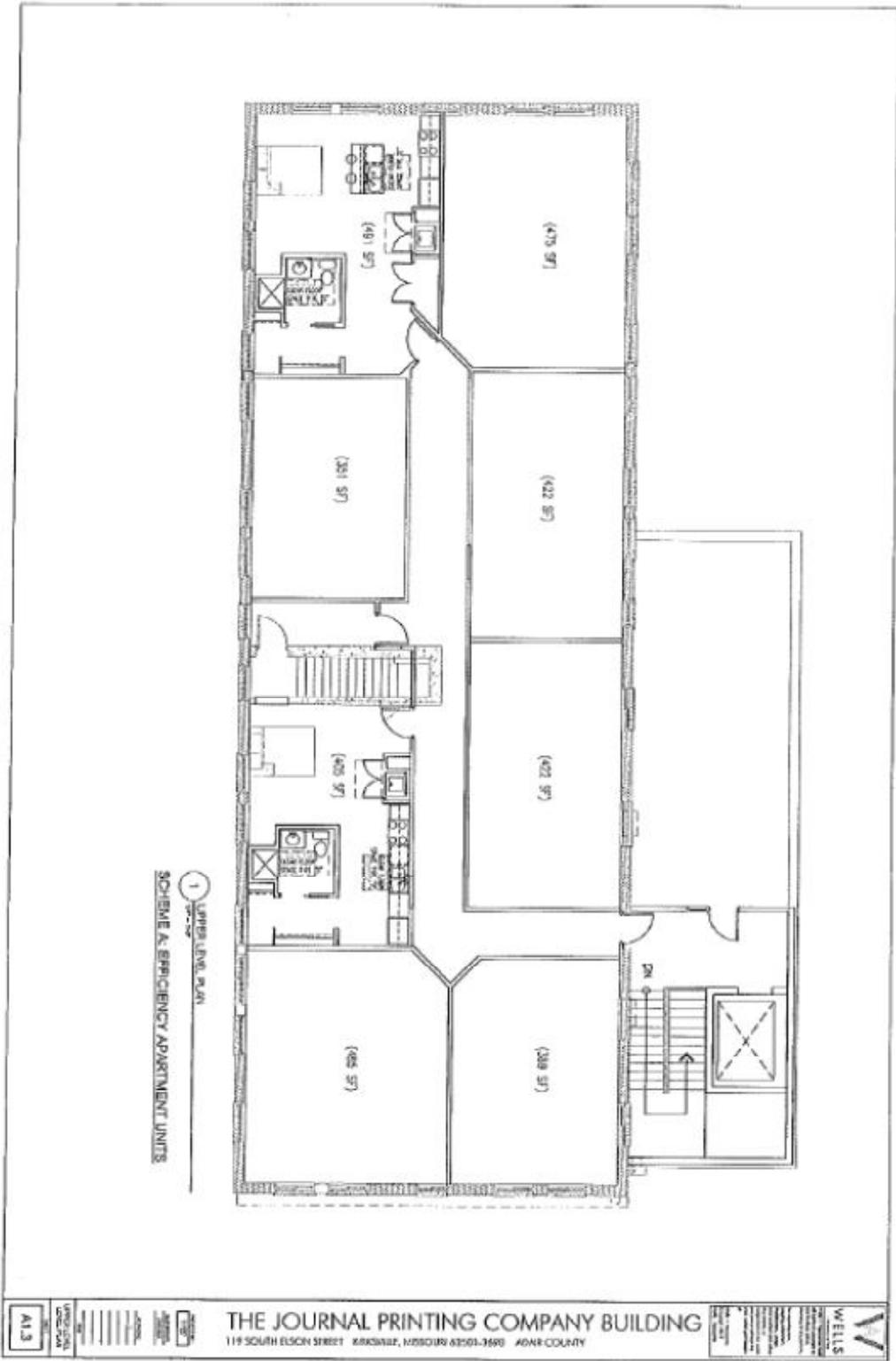
This project will create 7 units of housing on the upper floor of the building, while updating the commercial space on the main level to include handicapped accessibility. The project will also result in additional commercial space in the lower level of the building.

The Property is already listed on the Historic Register and is eligible for Preservation Tax Credit funding. The analysis of scope of work (Part II) is prepared and being submitted this week.

The Developer seeks an endorsement of the project and support from the City Council for the housing tax credit application being prepared for submission this fall.





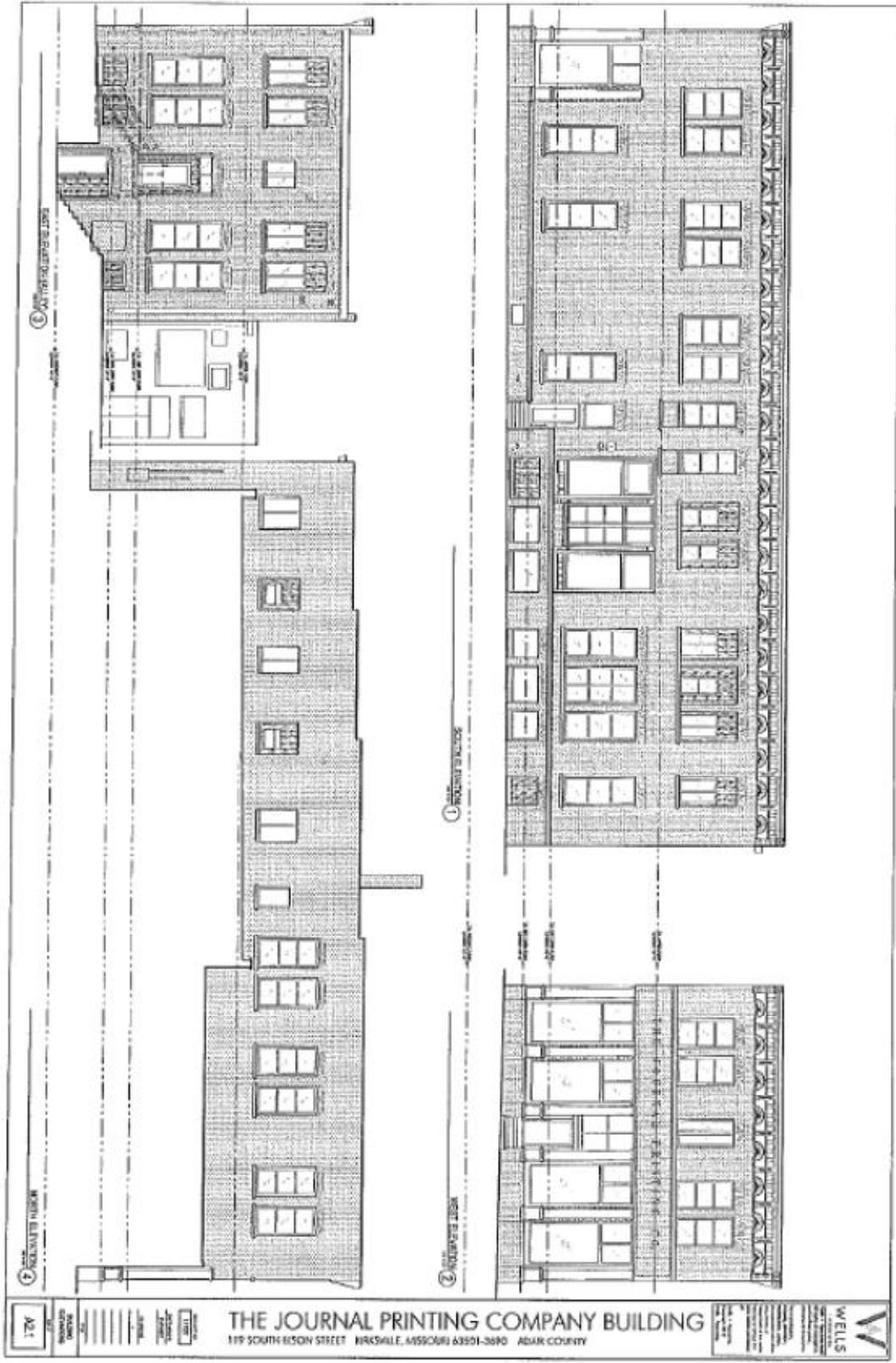


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WELLS

THE JOURNAL PRINTING COMPANY BUILDING  
 119 SOUTH ELSON STREET KIRKSVILLE, MISSOURI 63501-1690 ADNR COUNTY

WELLS



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A-1

DATE: 11/11/11  
 DRAWN BY: J. WELLS  
 CHECKED BY: J. WELLS  
 PROJECT NO.: 1111111111

**THE JOURNAL PRINTING COMPANY BUILDING**  
 111 SOUTH ELSON STREET BIRKSVILLE, MISSOURI 63301-3690 ADAIR COUNTY

**WELLS**  
 ARCHITECTS  
 111 SOUTH ELSON STREET  
 BIRKSVILLE, MISSOURI 63301-3690  
 TEL: 636-335-1111  
 FAX: 636-335-1112  
 WWW.WELLSARCHITECTS.COM

## **KIRKSVILLE CITY COUNCIL STUDY SESSION ATTACHMENT**

**SUBJECT:** Performance Contracting Mid-Term Investment Grade Audit

**STUDY SESSION MEETING DATE:** August 6, 2012

**CITY DEPARTMENT:** Codes & Public Buildings

**PREPARED BY:** Brad Selby, Codes & Planning Director

Schneider Electric representatives met with us last week to present the initial results of their audit, which they call the "Mid-term Investment Grade Audit". These are the preliminary results of their engineering calculations for potential energy savings for lighting replacements, HVAC replacements, water meter replacement, and etc. This report is used by new customers like us to determine if an energy saving project has enough "meat" in it to move forward or not.

Based on our buildings needs, the report from Schneider Electric's engineers focused on these projects as being the ones with the greatest potential for energy savings and increased revenue:

1. City Wide Lighting Retrofits for all buildings.
2. HVAC equipment replacement in City Hall, including the 911 Call Center
3. Water meter replacements and retrofits
4. Integrated programmable thermostats in all city buildings.

Other projects at the Aquatic Center and the Airport were identified as options for energy savings. Installation costs are higher though, so they will require further evaluation by both the City and Schneider for inclusion in a project list.

The water meter testing performed by Pedal Valve, a subcontractor for Schneider, revealed that a replacement of water meters would reduce our unaccounted for water billing by about 5%. Their estimate is that meter replacement would increase water revenue by about \$250,000 per year. One of the larger meters that was tested was only recording 70% of the water going through the meter. These numbers are felt to be conservative. The water meter replacement is obviously the large project that provides all the increased revenue generation. Energy savings starts at around \$15,000 per year for all of the base projects.

On a 15-year timeframe, with assumptions on energy and revenue escalations, the Total Cumulative Benefit to the City would be approximately \$7.3 million, with the cost of the project being in the \$4.5 to \$5.0 million dollar range. This mid-term audit shows that we have viable projects that will provide both energy savings and increased city revenue. City staff plans to review these numbers more, and will give a recommendation to city council. I think that the project has the potential to move forward to the next phase which would provide more accurate cost and benefit projections and would allow us to develop a more complete list of projects.



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## Midterm Review

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### Scope Summary

#### Lighting Retrofits

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Lighting will be upgraded in the buildings detailed below, improving overall color rendering and lighting efficacy. Light levels will comply with Illuminating Engineering Society (IES) standards whereby existing fixture configuration permits. Lamps and ballasts removed from the buildings will be collected and disposed of properly. This retrofit will meet the need to move the City from T-12 lamps with magnetic ballasts to T-8 lamps with electronic ballasts.

- Airport
- Aquatic Center
- City Hall
- EDA Building
- Fire station
- Police Station
- Public Works
- Water Treatment Plant



#### Mechanical Equipment Replacement

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##### City Hall

##### Option A:

The City Hall is served by three rooftop units (RTUs). The basement is served by a 10 ton unit, the first floor is served by a 15 ton unit and the second floor is served by a 12.5 ton unit. Heating is provided by natural gas at rooftop units. The existing rooftop units are over 15 years old and reached their life expectancy and require regular maintenance. The scope of work will be to replace the existing RTUs with new RTUs of the same capacity. New units will be provided with curb adaptor and transition to existing ductwork.



A portion of the existing ductwork for the basement unit is routed on roof. This ductwork has no insulation, is damaged and is leaking at the roof penetration. Scope of work will be to remove the existing supply and return air ductwork on roof and provide new insulated supply and return ductwork for the new RTU and also repair any roof leakage around the roof penetration.

The existing zone dampers throughout the building will be checked for proper operation. Any broken dampers will be replaced and the system will be re-commissioned with new controls. The new controls

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will be accessible by computer and include an easy to use graphical interface that shows the building floor plans, space temperatures, RTU data and schedules.

**Option B:**

Option B will include the rooftop unit replacement and ductwork modification on roof as explained under Option A. Under this option the zoning system for the entire building will be analyzed. Building will be re-zoned per heating/cooling load profile and usage. Based on the new zoning, new zone dampers and controls will be provided. Ductwork will be modified for the new zoning system and new ductwork will be provided for new zone dampers. Any broken damper will be replaced and the system will be re-commissioned with new controls. The new controls will be accessible by computer and include an easy to use graphical interface that shows the building floor plans, space temperatures, RTU data and schedules.

**911 Call Center:**

The Call Center will be provided with a dedicated cooling only split system. Indoor unit will be a cassette type unit and will be installed in the ceiling. The indoor unit will have a built in condensate pump and the condensate will be routed to nearest drain. Outdoor condensing unit will be located at the back of the building.

**Variable Refrigerant Flow System:**

As an alternate to the existing Carrier VVT Roof Top system, Schneider Electric proposes a Variable Refrigerant Flow System, (know as VRF) for the City Hall. This system would include three heat pump condensing units, one for each floor. Each condensing unit will be connected to multiple indoor units via braches of refrigerant piping. Each room will be provided with its own ceiling mounted cassette type indoor unit for the best control of individual rooms. The system will be capable of providing simultaneous heating and cooling for the entire building. Branch circuit selectors provided throughout the building will alternate the refrigerant liquid and hot gas flow to meet the room's heating or cooling needs and will switch when necessary. Each indoor unit will have a built in condensate pump to lift condensate over the ceiling and then will be routed to a combined condensate drain system to the nearest drain.

The existing rooftop units will be removed and one 100% outside air packaged rooftop unit with gas heat will be installed on the roof. The supply duct will be connected to existing supply ducts for all three floors and provide outside air to the building. The ductwork will be balanced and/or repaired as required for the distribution of the outdoor air. The existing VVT control dampers will be removed.

**Structural Platform:**

Per Client's direction, structural platform/catwalks will be built at the second floor attic and also at the mezzanine between first and second floor to access the ductwork and zone dampers. The scope will include a review of the existing structure, structural design for the platforms/catwalks, mobilization of equipment and materials using a crane where necessary, installation of platforms for access, and identification/repair of any broken ductwork supports/hangers.

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**Aquatic Center**

**Pool Area Option A:**

The existing indoor air handling unit does not provide enough air circulation and can not provide desired indoor air quality. The insect screen for the outside air louver is clogged with debris and can not be cleaned. Due to this, the actual outside air intake for the unit has been greatly reduced and resulting in a reduced indoor air quality with less chlorine removed from the pool surface. Option A will be to provide an outdoor Natatorium type heating/cooling unit that will provide at least 6 air changes per hour for the Pool area with 100% outside air. Installing the unit outside will provide better access to clean the screens for outside air. Outside air will be cooled by direct expansion and then a hot condenser gas re-heat coil will reheat the supply air to introduce dehumidified neutral air to space. An air to air heat exchanger will be used at the unit to pre-treat outside air using the air exhausted. Existing supply ductwork will be removed and new supply and exhaust air ductwork will be provided sized for the increased air movement. A whole new electrical service will need to be provided for this unit. Electrical power will be brought all the way from the existing pump room where the main electrical gear is located. The natural gas connection will also be extended to the new unit.



**Pool Area Option B:**

The existing indoor air handling unit does not provide enough air circulation. Option B will be to provide an outdoor Natatorium type heating only unit that will provide at least 6 air changes per hour for the Pool area with 100% outside air. Due to the increased air handled by the unit, the new unit will not fit inside the existing mechanical room. Air Conditioning to the pool area will not be provided under this Option. Indoor air quality will still be addressed with this option by increased air circulation. An air to air heat exchanger will be used at the unit to pre-treat outside air using the air exhausted. Existing supply ductwork will be removed and new supply and exhaust air ductwork will be provided sized for the increased air movement. Electrical power will be extended to the new unit from the existing air handling unit room. The natural gas connection will also be extended to the new unit. Locating the unit outside will remove it from the chlorine environment the unit is currently exposed to and will also provide better access to clean the outside air screens.

**Locker Rooms:**

The existing heating only unit for the Locker rooms does not have enough heat. This unit will be replaced with a new heating only unit with higher heating input. Outside air and supply air ductwork will be reconnected to the new unit. The existing ductwork will be reused and air flow will not be increased. Due to the airflow amount, heating input is restricted for the new unit so that the discharge air temperature is not beyond tolerable for the occupants. Hence, to supplement the heating requirement each Locker room will also be provided with one more electric unit heater. Gas and electrical will be reconnected to the new unit. New electrical power will be provided from the main electrical panel to the two new electric unit heaters. Additionally the existing exhausts for the Locker Rooms are not working properly. The existing in-line exhaust fan will be replaced with a new in-line exhaust fan and the exhaust system will be re-balanced.

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## Airport Facility and Mechanical Upgrades

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### HVAC/Roof Replacement:

This building is served by four roof top units that vary in condition from fair to poor condition. Additionally the membrane roof is in poor condition and shows several problem signs, including water ponding, patch delaminating, and the rubber membrane separating from the roof deck. Schneider Electric proposes to replace both the HVAC equipment (RTUs) and install a new sloped metal roof. The RTUs will be removed and replaced with split system units. The RTU roof openings will be insulated and covered, and new split system AHUs will be installed above the ceiling in the building and the corresponding condensing units located outside. A new sloped metal roof is to be installed. This will include the necessary design and structure to accommodate the new roof. This roof will significantly enhance the look of the building.



### Window Glass/Vestibule Addition:

The windows in this building are single pane glass and inefficient. Schneider Electric proposes to replace these windows with new double pane, tinted low-E glass. Additionally a vestibule will be installed on both the East and West entrances. These modifications will enhance the look and energy efficiency of the building as well as reduce outside air infiltration.

## Water Meter Replacement & Retrofit

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Schneider Electric will provide all necessary project management, labor, and materials to perform 7,388 water meter retrofits with AMR. City water customers will be notified of the meter replacement before performing the actual work. If necessary, the meter work will be scheduled with the customer to avoid any detrimental interruptions.

Schneider Electric will provide all necessary data and support for the data integration into the city's billing system. Schneider Electric will coordinate route installations working closely with the city's billing dept to execute the project in a planned and organized manner and will provide additional training for City personnel, over and above manufacturers training, to develop skill, expertise, and comfort with the new AMR system.

The automatic meter reading system will also include the following:

- Wireless Data Collector (1)
- Software
- Interface to City's Billing Software
- Training to Operate System
- 2 years of AMR product support

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**Midterm Review**

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**Financial Summary**

**15 Year Cash Flow**

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Schneider Electric developed the following cash flow chart based on the Base Project detailed below. The cash flow illustrates a Cumulative Total Benefit to the City of Kirksville of approximately \$7.3M over 15 years. Based on an estimated financing interest rate of 2.5%, the Cumulative Total Benefit will support an estimated \$8M worth of scope items while still funding and maintaining a positive cash flow to the City.

Year	Energy Savings	Revenue Generation	Operational and Maintenance	Annual Total Benefit	Cumulative Total Benefit
Year 1	\$15,643	\$250,000	\$108,780	\$374,423	\$374,423
Year 2	\$16,112	\$262,500	\$108,780	\$387,392	\$761,815
Year 3	\$16,596	\$275,625	\$108,780	\$401,001	\$1,162,816
Year 4	\$17,094	\$289,406	\$108,780	\$415,280	\$1,578,096
Year 5	\$17,606	\$303,877	\$108,780	\$430,263	\$2,008,359
Year 6	\$18,135	\$319,070	\$108,780	\$445,985	\$2,454,344
Year 7	\$18,679	\$335,024	\$108,780	\$462,482	\$2,916,826
Year 8	\$19,239	\$351,775	\$108,780	\$479,794	\$3,396,620
Year 9	\$19,816	\$369,364	\$108,780	\$497,960	\$3,894,580
Year 10	\$20,411	\$387,832	\$108,780	\$517,023	\$4,411,603
Year 11	\$21,023	\$407,224	\$108,780	\$537,027	\$4,948,629
Year 12	\$21,654	\$427,585	\$108,780	\$558,018	\$5,506,648
Year 13	\$22,303	\$448,964	\$108,780	\$580,047	\$6,086,695
Year 14	\$22,972	\$471,412	\$108,780	\$603,165	\$6,689,859
Year 15	\$23,661	\$494,983	\$108,780	\$627,424	\$7,317,284
<b>Total</b>	<b>\$290,943</b>	<b>\$5,394,641</b>	<b>\$1,631,700</b>	<b>\$7,317,284</b>	<b>\$7,317,284</b>

Includes 3% Energy escalation and 5% Revenue escalation.

**Base Project**

**\$4.4-\$5M**

Schneider Electric has completed a conceptual estimate for the Base Project to include the following:

- City Wide Lighting Retrofit
- Mechanical Equipment Replacement – City Hall – Option B: RTU replacement, rezoning
- Mechanical Equipment Replacement – City Hall – 911 Call Center: stand alone cooling unit
- Water Meter Replacement & Retrofit
- City Wide Integrated Programmable Thermostats

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**Project Options**

**Up to \$2.3M**

In addition to the Base Project, Schneider Electric has identified the following Project Options:

- Mechanical Equipment Replacement – City Hall – Variable Refrigerant flow System
- Mechanical Equipment Replacement – City Hall – Structural Platform
- Mechanical Equipment Replacement – Aquatic Center – Option A: replace AHU with cooling
- Mechanical Equipment Replacement – Aquatic Center – Option B: replace AHU without cooling
- Mechanical Equipment Replacement – Aquatic Center – Locker Rooms
- Airport Facility and Mechanical Upgrades – HVAC/Roof Replacement
- Airport Facility and Mechanical Upgrades – Window Glass/Vestibule Addition

## **KIRKSVILLE CITY COUNCIL STUDY SESSION ATTACHMENT**

**SUBJECT:** Kirksville Water Supply and Drought Response

**STUDY SESSION MEETING DATE:** August 6, 2012

**CITY DEPARTMENT:** Public Works

**PREPARED BY:** John R. Buckwalter, PE, Public Works Director

The continuing drought has raised concerns over the City's water supply and ability to meet customer demand during an extended drought. This report summarizes the City's water supply, capacity, and established water conservation plan.

The City has two sources of raw water: Forest Lake and Hazel Creek Lake.

Forest Lake was constructed in 1952. It has a normal pool area of 545 acres, at an elevation of 800 feet above mean sea level (800 MSL) and watershed of 8,832 acres. The Forest Lake raw water pump station has three pumps, each rated at 3100 gpm or 4.45 MGD each. Water is pumped by a 20-inch diameter main 25,000 feet (4.75 miles) to the water treatment plant on Potter Avenue. The pumps must overcome an elevation difference of 186 feet between the lake and the plant. The pumps can be run in combination if necessary.

Hazel Creek Lake was constructed in 1982 and has a normal pool area of 515 acres at an elevation of 848 MSL. The Hazel Creek Lake raw water pump station has two pumps, each rated at 2250 gpm or 3.25 MGD. Water is pumped via a 20-inch diameter main 39,750 feet (7.5 miles) to the water treatment plant. The elevation difference between Hazel Creek Lake and the plant is 138 feet. Until 2011 it was not possible to run both pumps at the same time due to electrical supply limitations. In 2011 improvements were made which permit the pumps to be used in combination. This new capability has been tested, but never used.

The City's water treatment plant has a rated capacity of 6.0 MGD. It can treat 4.5 MGD on a sustained basis. A limiting factor is the ability of the lake pump stations to supply raw water. 6 MGD requires supply of 4166 gpm. The raw water holding pond at the water treatment plant has a capacity of 9 million gallons, and acts as a buffer during periods of peak demand.

There is not a set rule or policy on which lake will be used for supply. Raw water is tested to determine the quantity of chemicals required to treat the water, looking at factors such as turbidity, algal bloom which could impact taste and odor, levels of chemicals such as manganese and iron, and even raw water temperature. Anticipated demand is a major factor in lake selection. For that reason, Forest Lake has historically been the supply during periods of high demand due to the limits of the Hazel Creek pump station. Forest Lake has a much faster recovery rate than Hazel Creek Lake, and

water is typically easier to treat and cheaper to pump. We have been using Forest Lake as the raw water source since March 2012. Hazel Creek was the source from January to March.

Other factors are also considered in lake selection. There is an ongoing concern with lack of vegetation in Hazel Creek Lake as well as unstable banks. Both conditions are made worse by fluctuating water levels.

Forest Lake is used for recreation, and needs a reasonable water level to support boating, the beach area, and the marina. The minimum level considered acceptable to sustain recreation is 790 MSL, or 10 feet below full pool. We typically evaluate both lakes when Forest Lake is 3 feet below full pool. The bottom line, however, is that the lake selected must be able to provide quality water which will meet the demand expected. That often means that Forest Lake must be used if demand is expected to be over 3.0 MGD for an extended period. If we compare current lake levels to the low lake levels in the past 5 years we find that Forest Lake was 4.0 feet below full pool in February 2008 and again in November 2011. It is currently less than 2.5 feet below full pool. Hazel Creek was 3.0 feet below full pool in March 2012, and is currently 1.2 feet below full pool. Both lakes were full on June 3.

Benton and Associates completed a detailed water supply study for Kirksville in 2002. I have used their estimates for an evaluation of the current available water supply.

The MoDNR website has a running report on Drought Conditions, and a link to the State Drought Response Plan. The City of Kirksville has a Water Conservation Plan codified as Division 11 of Chapter 25 of the Municipal Code, which is attached. The thresholds recommended for the four phases outlined in the State drought response plan and the corresponding stages for the Kirksville Water Conservation Plans (KWCP) are:

**Advisory** (Stage I KWCP) when there are less than 240 supply days left in reservoirs (7365 ac ft)

**Drought Alert** (Stage II KWCP) less than 180 supply days (5524 ac-ft)

**Conservation** (Stage III KWCP) less than 120 supply days (3683 ac-ft)

**Emergency** (Stage III KWCP) less than 60 supply days (1841 ac-ft)

Supply estimates are based on a demand of 10 MGD.

3.5 MGD equals 10.75 acre-feet. We have been producing water at a rate of 3.2 to 3.5 MGD during July. A monthly demand of 3.5 MGD uses 322.5 acre-feet of supply. That is about 7 inches from Forest Lake at normal (full) pool. Evaporation from Forest Lake in July is estimated to average 431 acre-feet for the month. In light of the elevated temperatures, I estimate loss to evaporation to be one third more or 573 ac-ft. That is about one foot from normal pool level.

At full pool (800.0' MSL) Forest Lake holds 12,440 ac ft. When Forest Lake is at 3.0 feet below full pool (797 MSL) its remaining supply is 11,265 acre feet. (375 days).

At full pool (848' MSL) Hazel Creek Lake holds 9716 acre feet. Hazel Creek Lake, at 1.0 feet below full pool (847 MSL) has a remaining supply of 9260 ac ft (310 days).

A reasonable monthly demand for current planning is 3.5 MGD for water used (325 acre feet) and 575 acre feet for evaporation or a total of about 900 acre feet per month (30 acre feet per day). That is very close to 10 MGD.

We currently have over 600 days of supply available, if no minimum draw down level is set. We can expect the lake we are drawing from to drop 18 inches per month, and the other lake to drop about 12 inches per month until we have rainfall to recharge the lakes. As the weather cools, and the days shorten, evaporation will decrease, as will the rate of drop of water levels.

Citizens should be encouraged not to waste water. Public information and press releases have been used for this purpose. There is no recommendation at this time, however, to implement any stage of the City's Water Conservation Plan.

Enclosure

City of Kirksville Water Conservation Plan

CODE OF ORDINANCES  
Chapter 25 - WATER AND SEWERS  
ARTICLE I. - WATER  
DIVISION 11. - WATER CONSERVATION PLAN

**DIVISION 11. - WATER CONSERVATION PLAN <sup>(68)</sup>**

<sup>(68)</sup> **Editor's note**— Ord. No. 11444, §§ I—V, adopted Apr. 3, 2000, did not specify manner of codification, hence; inclusion of these provisions as Div. 11, §§ 25-100.1—25-100.6 was at the discretion of the editor.

Sec. 25-100.1 - Generally.  
Sec. 25-100.2 - Implementation.  
Sec. 25-100.3 - Commercial and industrial conservation plans.  
Sec. 25-100.4 - Notification provision.  
Sec. 25-100.5 - Compliance with the plan.  
Sec. 25-100.6 - Penalties.

**Sec. 25-100.1. - Generally.**

The plan shall become effective upon a finding by the director of public works that a probable water shortage problem exists. When it can be anticipated that there is a distinct possibility of a water distribution shortfall, the following plan will be implemented until it can be determined that the emergency no longer exists. Depending on the expected severity of the problem, it is possible that Stages 2 and 3 may be implemented immediately. Requests for public cooperation shall be made through the news media. This division will affect only those citizens and commercial entities who receive water service from the city.

(Ord. No. 11444, 4-3-2000)

**Sec. 25-100.2. - Implementation.**

Stage One (Voluntary)

Request voluntary water conservation efforts and compliance with the following restrictions:

- (1) No washing of sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas; no pumping of fountain recirculating water.
- (2) No refilling of swimming pools with water furnished by the city.
- (3) No washing of cars, other motor vehicles, trailers, or boats.
- (4) No water to be used for dust control.
- (5) No flushing of mains by public works department personnel except to alleviate specific customer complaints.
- (6) Upon public notification by news media, the public works department will curtail water usage according to the department's plan for such emergencies.

If after the initiation of Stage One, weather conditions, expected trends in demand, or other factors

Kirkville, Missouri, Code of Ordinances

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CODE OF ORDINANCES  
Chapter 25 - WATER AND SEWERS  
ARTICLE I. - WATER  
DIVISION 11. - WATER CONSERVATION PLAN

indicate that the threat of a water shortage will continue, the additional provisions of Stage Two will be implemented.

Stage Two (Voluntary)

Stage One restrictions will remain in effect plus the following restrictions will also be requested:

- (1) No use or discharge of water from a fire hydrant except for fighting fires.
- (2) Watering of any lawn, garden, landscaped area, tree, shrub, or other plant shall be prohibited, except from a hand held hose or container, or drip irrigation system. Such watering shall be permitted only at times designated by the director of public works.
- (3) Commercial and industrial users will be requested to reduce their water consumption by at least thirty (30) percent.

If after the initiation of Stage Two, weather conditions, expected trends in demand, or other factors indicate that the threat of a water shortage will continue or worsen, or if a serious problem or system emergency should develop, the mandatory measures of Stage Three would be implemented.

Stage Three (Mandatory)

- (1) No washing of sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas, no pumping of fountain recirculating water.
- (2) No refilling of swimming pools with water furnished by the city.
- (3) No use of water for recreational uses such as water slides or yard play.
- (4) No washing of cars, other motor vehicles, trailers, or boats except from a bucket. All commercial car washes shall be closed and remain closed until water emergency is over.
- (5) No water to be used for dust control.
- (6) No flushing of water mains by public works department personnel, except to alleviate specific customer complaints.
- (7) No use of water from any fire hydrant except for fighting fires.
- (8) Watering of any lawn, garden, landscaped areas, tree, shrub, or other plant shall be prohibited.
- (9) It shall be mandatory that all large commercial and industrial users follow a previously submitted conservation plan for their operation which has been approved by the city public works department. A customer that fails to submit a conservation plan would be subject to the penalties of section 25-100.6 of this division.

Rural water reseller(s) will be subject to shut off from water service in accordance with the water purification facility emergency operation plan, and the city's contract(s) with any rural water district or company.

Depending upon the severity of the problem, the plan could revert back to Stage One or Two or be canceled as conditions improve.

CODE OF ORDINANCES  
Chapter 25 - WATER AND SEWERS  
ARTICLE I. - WATER  
DIVISION 11. - WATER CONSERVATION PLAN

(Ord. No. 11444, § I, 4-3-2000)

**Sec. 25-100.3. - Commercial and industrial conservation plans.**

Commercial and industrial customers must submit a "water conservation plan" for their operation to the city public works department within one hundred eighty (180) days of the passage of this division.

The "plan" shall describe how the user intends to reduce water consumption during Stage Three of the water conservation ordinance. The goal of the required "plan" should be to reduce the customer's usage by fifty (50) percent. Specific measures should be listed and described, i.e., water recycling, delaying routine watering of lawns and shrubbery, delaying routine washing of equipment and facilities, changes to processes requiring less water, etc.

(Ord. No. 11444, § II, 4-3-2000)

**Sec. 25-100.4. - Notification provision.**

With respect to the mandatory provisions of this plan, a customer shall be deemed to have been notified and directed to reduce the use of water as set forth in the "plan" when the city manager or his designated representative files such notice through the news media, except nothing contained herein shall be deemed to prohibit other means to notify persons of the need to reduce use of water in accordance with the "plan".

Upon the public works department taking steps to notify customers as set forth above, a customer shall be presumed to have notice and shall take steps to comply with the "plan", except a customer may rebut such presumption by showing that the customer did not, in fact, have notice of the directions to comply with the provisions of this "plan".

(Ord. No. 11444, § III, 4-3-2000)

**Sec. 25-100.5. - Compliance with the plan.**

All persons who receive city water service shall be entitled to receive such water service only upon strict compliance with provisions of the "plan".

It shall be unlawful for any person to violate the mandatory provisions of the "plan" when such person is directed to reduce or curtail their use of water as set forth in Stage Three of the "plan". A direction to reduce or curtail shall be presumed when notice is given as set forth in the "plan".

(Ord. No. 11444, § IV, 4-3-2000)

**Sec. 25-100.6. - Penalties.**

Any person, who shall violate any of the mandatory provisions of the "plan" pertaining to discontinuance, interruption, curtailment of water service, or any large commercial or industrial user who fails to submit a conservation plan acceptable to the public works department within one hundred eighty (180) days of the passage of this division shall be subject to the penalties set forth in section 1-7 of the Kirksville City Code.

Additionally, any large commercial or industrial user who fails to submit a conservation plan as required will be subject to termination of service during Stage Three of the water conservation plan at the discretion of the city. Any new customer who shall be required to file such a "plan" shall have a grace period of one hundred eighty (180) days from the date of service hook-up to comply.

(Ord. No. 11444, § V, 4-3-2000)