APPENDICIES

APPENDIX A

City of Lincoln

Rules and Regulations for Recycled Water Use and Distribution

City of Lincoln

Rules and Regulations

Recycled Water Use and Distribution

11/28/2017

City of Lincoln

Rules and Regulations for Recycled Water Use and Distribution

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City of Lincoln

RULES AND REGULATIONS FOR RECYCLED WATER USE AND DISTRIBUTION

SECTION 1 – INTRODUCTION

1.1 GENERAL

The City of Lincoln (City) constructed an award winning Wastewater Treatment and Reclamation Facility (WWTRF) in 2004. The WWTRF produces recycled water (RW) that fits the definition of "disinfected tertiary recycled water", suitable for the uses described in Article 3, Section 60304(a) of Title 22 of the California Code of Regulation, described in Section 1.3.

Using recycled water for non-potable (non-drinkable) uses such as irrigation, has multiple benefits including:

- Conserving groundwater and surface water that would otherwise be used for non-potable irrigation and other uses
- Providing the City of Lincoln with a reliable and drought –proof water supply source
- Providing an alternative to wastewater discharge to Auburn Ravine

The use of recycled water from domestic sewage is regulated by the California Regional Water Quality Control Board (RWQCB). California Water Code Section 13551 establishes a state policy to encourage the use of recycled water. Permission to use recycled water is based on the ability to adequately treat domestic wastewater to the point that the recycled water (effluent) meets the requirements of existing Title 22, Chapter 3 Regulations of the California Administrative Code (Code of Regulations). Title 22 was promulgated by the State Department of Health Services (DHS) to ensure proper health protection and specify the level of treatment appropriate for intended applications. Previous responsibilities of DHS have since been transferred to the State Water Board Division of Drinking Water (DDW). See Appendix B for additional information on recycled water regulatory framework.

1.2 PURPOSE

In accordance with waste discharge requirements for water recycling projects, the RWQCB requires that Rules and Regulations for facilities using recycled water be established. The purpose of these Rules and Regulations is to establish procedures, specifications, and limitations for the safe and orderly development and operation of recycled water facilities and systems in the City of Lincoln.

1.3 GOALS AND USES

Recycled water shall be produced, distributed, and used in a manner that meets all Federal, State, and local requirements for non-potable uses and shall achieve the following:

A. Conservation of potable water supplies by using recycled water for current and future non-potable demands. Recycled water uses shall be for the maximum public benefit and may include:

- Agricultural Irrigation*
    - Food crops where recycled water contacts the edible portion of the crop, including root crops
    - Ornamental nursery stock and sod farms

    - Pasture for animals (including milk animals for human consumption)
    - Orchards
    - Vineyards
    - Nonfood baring trees
    - Fodder crops
    - Etc.
- Landscape Irrigation
    - Parks and playgrounds
    - School yards*
    - Residential Landscaping*
    - Unrestricted-access golf courses
    - Cemeteries
    - Freeway landscaping
    - Any other irrigation uses non prohibited by other provisions of the California Code of Regulations (CCR)*
- Construction use
    - Dust Control
    - Compaction
    - Cleaning outdoor work areas
    - Mixing concrete
    - Flushing sanitary sewers
    - Backfill consolidation around piping

** Some uses require the development of a Use Area Report, further described in Section 2.4. Other approved uses that require additional City review and reporting include:*

- Surface water impoundments
- Groundwater recharge projects
- Dual Plumbed Systems
- Wildlife habitat
- Industrial process water that will not contact workers
- Industrial or commercial cooling or air conditioning
- Industrial boiler feed water
- Flushing Toilets and urinals
- Decorative fountains
- Commercial laundries
- Structural fire fighting
- Artificial snow making
- Commercial car washes
- Priming drain traps

B. Prevent direct human consumption of the recycled water though:
    - Adherence to all applicable rules and regulations
    - Posting of warning signs by the customer
    - Cross-connection/backflow prevention program
    - Education to the public

C. For landscape irrigation, control run-off, ponding, and overspray of recycled water at all times by controlling the installation and operation of the systems using recycled water.

D. Prevent contamination of potable water supplies.

E. Isolate contamination by other sources, such as wastewater, sludge, or other substances which may come into contact with recycled water.

F. Monitor recycled water quality.

1.4 SEVERABILITY

If any section, subsection, sentence, clause, phrase, part or portion of these Rules and Regulations is for any reason held to be invalid, such invalidity shall not affect any of the remaining portions, of these Rules and Regulations. The City declares that each section, subsection, sentence, clause, phrase or part of these Rules and Regulations would have been irrespective of the invalidity of any part. These Rules and Regulations shall be interpreted so as to comply with applicable Federal and State laws and regulations.

1.5 SERVICE AREA

These Rules and Regulations pertain to recycled water service to lands and/or improvements lying within City sphere of influence or as defined by the City's Master Reclamation Permit. These Rules and Regulations also apply to Recycled Water Truck Program permit holders, regardless of use site location. The first phase of recycled water services will provide recycled water to irrigate publicly owned areas of residential neighborhoods, parks, school sites, landscape medians, and commercial areas. In the second phase the City shall provide recycled water services to other customers in accordance with these Rules and Regulations. If the City recycled water service is extended beyond the current planned boundaries, any additional users will become a party to these Rules and Regulations. Recycled water service shall be provided to the service area when related distribution facilities are completed and recycled water service becomes available.

SECTION 2 – RECYCLED WATER SERVICE REQUIREMENTS

2.1 GENERAL

The City shall provide recycled water service in accordance with these Rules and Regulations.

2.2 SERVICE CONDITIONS

The City shall control recycled water distribution to customers. The provisions of recycled water service and the use of recycled water by any customer shall be subject to all terms and conditions of these Rules and Regulations.

Responsibilities for the Recycled Water Program is split between the following parties, briefly described as follows:

City of Lincoln – WWTRF

The City's WWTRF produces the recycled water and holds the Master Reclamation Permit (Order No. R5-2005-0040-01) issued by the Regional Water Quality Control Board (RWQCB). WWTRF operators are responsible for monitoring recycled water quality to ensure compliance with the Master Reclamation Permit.

City of Lincoln – Department of Public Services

The Department of Public Services is responsible for regional water distribution system planning. They are also responsible for operation of the recycled water distribution system and routine interface with the recycled water customers. This includes cross connection control, customer inspections and monitoring for compliance with these Rules and Regulations. The City will conduct the plan check reviews for new recycled water installations.

Recycled water service shall be provided only if a permit for such service is obtained in the manner provided in these Rules and Regulations. If any of the following conditions of service are not satisfied at all times, a Permit for Recycled Water Service may be revoked after which all recycled water service shall cease. Connection to a potable water system may not be allowed.

2.3 APPLICATION PROCEDURE FOR RECYCLED WATER

2.3.1 Filing an Application for Recycled Water Service –

(APPLICATIONS CAN ONLY BE FILED ONCE THE CITY HAS COMPLETED PHASE 1 SERVICES)

A potential customer meeting the requirements for recycled water service shall file an application for recycled water with the City of Lincoln Department of Public Services on a standard form provided by the City. See Appendix C for general steps required in obtaining recycled water service.

The application form, included in Appendix D shall contain detailed information concerning the applicant as follows:

- Name of the property or development that will be irrigated with recycled water
- The applicant's relationship to the property to which recycled water service is requested. In cases where the applicant is not the legal owner of the property, the legal owner shall consent to the application on a supplemental notarized form.

- The address, legal description, and parcel number of the property cover by the application.
- The current zoning and the purpose for which the property will be used.
- The proposed use of recycled water within a defined designated use area on the property.
- The current source of irrigation water (if any).
- The estimated service requirements for recycled water, i. e. pressure, flow, and annual volume.
- The designation of a proposed applicant's Recycled Water Site Supervisor.
- Any special condition for service pursuant to these Rules and Regulations.

Upon approval of the application form, signed by the applicant or the applicant's agent. The applicant shall submit a User Reclamation Plan to include engineered site plans and specifications per Section 3.5 of these Rules and Regulations clearly delineating the proposed recycled water designated use area, the proposed meter location, size, and type of all recycled water service connections and on-site facilities, and any areas in which recycled water must be specifically excluded.

2.3.2 Compliance of Application with Regulatory Requirements

The applicant for recycled water shall agree to comply with the requirements of these Rules and Regulations and any and all applicable Federal, State, and local statutes, ordinances, regulations, and other requirements.

2.3.3 Application Fees and Other Charges

Application fees, deposits, and capacity charges shall be paid in accordance with the schedule of rates established by the City of Lincoln and shall be subject to all terms and conditions of these Rules and Regulations.

2.3.4 Review of Application by the City

Upon receipt of an application for recycled water service, the City shall review the application and conduct any necessary investigation in order to determine whether the City shall provide recycled water service. The City may prescribe requirements in writing to the applicant as to the facilities necessary to be constructed including design, manner of construction, method of operation and conditions of service.

2.4 USER RECLAMATION PLANS

Upon approval of a recycled water use permit application the applicant may be asked to file a User Reclamation Plan for approval from DDW. The standard User Reclamation Plan form is provided in Appendix E. User reclamation plans are NOT required for the following recycled water uses **where the Use Area does NOT contain a potable water connection**:

- Irrigation of golf courses, landscape medians, schools, playgrounds, parks, commercial landscapes, and residential areas
- Use in construction
- Industrial process water

2.5 PERMITS

A City Permit for Recycled Water Service must be obtained by the customer to receive recycled water supply on any property. A City Permit is also required for any interim use of recycled water, through the Recycled Water Truck Program.

Permits to receive recycled water service or any connection for service made as provided in the permit issued under these Rules and Regulation pursuant to receipt of an application for such service shall be subject to the following conditions.

a. The applicant shall adhere to requirements prescribed by these Rules and Regulations and to all additional requirements by all governing agencies pertaining to recycled water service.

b. The applicant shall pay specified connection fees, service line charges, and other applicable charges prior to issuance of the permit. The current fee schedule for these charges is available from the Technical Resources of the City of Lincoln Community Development Department.

c. In order to maintain optimal conditions throughout the recycled water system, the City may schedule recycled water use. Such scheduling may involve programming deliveries to different customers and/or various portions of a single customer's on-site system. Any scheduling shall consider applicable constraints of all involved regulatory agencies, these Rules and Regulations, and the operating constraints of the affected customers.

d. The City may temporarily terminate recycled water service when: (1) at any time recycled water at the terminal point of the City reclamation system does not meet the requirements of regulatory agencies; (2) maintenance of the system is required; (3) an emergency exists. The City may or may not provide backup water supply from other approved sources.

e. The permit shall become effective when the project has been completely constructed, tested and been approved by the appropriate agencies.

The City reserves the right to suspend or terminate the permit, or to modify its terms and conditions, if any of the following occurs:

a. A change in owner or user of the property covered by the permit.
b. A change in the use of the property covered by the permit.
c. A change in the qualitative characteristics of recycled water.
d. A violation of these Rules and Regulations and other applicable regulations.
e. A change in regulations.

A new permit application must be submitted to reinstate a permit that has been cancelled.

2.6 ESTABLISHING SERVICE

2.6.1 Request for Service Connection

Following the completion of construction and/or installation of the recycled water facilities, the customer shall request the City to install the service meter.

The request for service connection shall be accompanied by all required fees for installation and connection as appropriate for the size and type of service.

2.6.2 Temporary Use of Potable Water or Raw Water

A connection to the potable or raw water system may be available for temporary connection. Before the customer receives temporary water service, a recycled water permit must be obtained. Prior to commencement of recycled water service, an inspection of the on-site facilities shall be conducted by the City to verify that the facilities have been maintained and are in compliance with the recycled water permit. Upon verification of compliance, the customer shall receive recycled water service.

2.7 CONDITIONS FOR RECYCLED WATER SERVICE

Permits for recycled water service and any connections for service made, as provided in the permit issued under these Rules and Regulations, shall be subject to the following conditions:

2.7.1 Adherence to Permit Conditions

Except as otherwise provided herein, all recycled water will be provided to the customer according to the conditions and quantity specified in the Permit for Recycled Water Service.

2.7.2 Control of Facilities (Liability)

The City shall have control of and shall maintain and repair recycled water service lines and meters. The customer shall repair and maintain in good working conditions the recycled water system downstream of the meter. The City shall have the right to inspect and test all connections and on-site facilities.

2.7.3 Prohibition of Changes

The customer shall not make any changes to the recycled water system without the City's approval. Any changes or alterations to existing on-site facilities whether the result of intentional or unintentional damage, shall be reported immediately to the City.

2.7.4 Services to Common Areas

The City reserves the right to supply recycled water to contiguous areas of a single ownership through a single recycled water service connection

Common areas owned or operated by homeowner's associations or similar cooperatives should have only one service connection whenever it is practical, and will be operated as a single ownership.

A recycled water service connection shall not be used to supply property not specified in the permit authorizing the connection.

2.7.5 Subdividing an Approved Service Area

a) When a property provided with a recycled water service connection and water meter is subdivided, such connection and meter shall be considered as serving the lot or parcel of land on which the meter is located. Additional recycled water distribution mains and/or service lines, agreements and associated fees, if applicable, will be required for all subdivided areas in accordance with these Rules and Regulations. Agreements and associated fees, if applicable, will provide easements for recycled water distribution mains and easement locations.

All recycled water used on any premise must pass through the meter. Customers shall be charged for all recycled water passing through the meters.

b) Every recycled water service connection and meter assembly shall include a winged angle meter stop with Teflon coated ball or gate valve, as approved by the City, on the inlet side of the meter, which shall be used exclusively by the City for controlling the recycled water supply through the recycled water service line. If the angle stop or gate valve is damaged by the customer's use, repair and/or replacement by the City shall be at the customer's expense.

c) Each customer shall limit the use of recycled water to those uses set forth in the permit for recycled water service approved by the City.

2.7.6 Conditions of Pressure and Service

Pressure and service shall be provided on an "as available" basis, at the location of the customer's meter. All customers shall hold the City harmless from any and all damages and liabilities caused in whole or in part by pressure conditions, water quality variations, or interruptions in service. It shall be the owner's responsibility to install booster pumps to increase pressure if necessary.

2.8 SIZE AND LOCATION OF SERVICE CONNECTIONS

The City reserves the right to approve the size and location of recycled water service lines, the service connections, and the meters and shall also have the right to approve the kind and size of backflow prevention devices if required, and any and all other appurtenances to the service. The recycled water service lines shall be extended to a curb line, or property line of the customer's property, abutting upon a public street, highway, road, or City's easement in which recycled water distribution mains are installed.

2.9 CROSS-CONNECTION PREVENTION

2.9.1 Purpose

The primary purpose of this article is to protect the City's potable water supply from possible contamination by prohibiting cross-connections between the potable water distribution system and the recycled water distribution system, in accordance with Title 17, Chapter 5 of the California Code of Regulations. The secondary purpose is to protect the recycled water system from other contaminants.

2.9.2 Backflow Prevention

Regulations governing backflow prevention devices are intended to protect the City's potable water supplies and are not intended to protect Users from potential hazards of cross-connections in the User's on-site facilities.

City approved backflow prevention for the potable water supply shall be provided by the customer in accordance with these Rules and Regulations and as required by City.

The backflow prevention devices required shall be in accordance with the requirements specified by the current version of the City of Lincoln Public Facilities Improvement Standards. Provision, installation, maintenance and inspection of backflow prevention devices shall be the sole responsibility and duty of the customer, and at the customer's

expense. Inspection of backflow prevention devices shall be done at least once a year in accordance with Title 17, or more often in those instances where successive inspections indicate repeated failures.

2.9.3 Type of Protection

The level of protection required is related to the degree of hazard that the City determines exists on the premises served. Listed in increasing levels of protection, the following protective devices may be required: Reduced Pressure Principle Backflow Prevention Device (RPPD), Double Check Valve Assembly (DC) and Air Gap Separation (AG). The user may choose a higher level or protection than required by the City.

2.9.4 Color-Coding Dual or Multiple Water Systems

Any property that is provided recycled water service or contains dual or multiple water systems and piping, all exposed recycled water pipelines, valves, and other fittings shall be purple and marked to distinguish clearly which is used for potable water and which is used for recycled water. All recycled water quick couplers shall be posted with bilingual precautionary tags with the wording "CAUTION: RECYCLED WATER – DO NOT DRINK". Main shut-off valves shall be clearly identified to distinguish between recycled water and potable water systems.

2.9.5 Customer's Designated Recycled Water Site Supervisor

The customer shall designate a Recycled Water Site Supervisor who shall be responsible for the prevention of any cross-connections on the property, and in the event of a cross-connection to the potable water system, the customer shall immediately shutoff the main recycled water supply valve and depressurize the recycled water system to prevent further mixing with the potable supply, and shall immediately advise the City of the occurrence of the cross-connection. The local and State health officers shall be immediately advised by the City so that appropriate measures may be taken to control any contamination or pollution. See Appendix J for an example emergency response plan. Also see Section 4.2.2 for additional responsibilities of the Site Supervisor.

2.10 CONVERSION TO RECYCLED WATER SERVICE

When a potential customer proposes the conversion of an existing potable water irrigation system to a recycled water irrigation system, an analysis of the irrigation system will be conducted by the customer for City to identify the measures necessary to ensure compliance with these Rules and Regulations, and separation of the recycled water and potable water systems. The analysis will be conducted at the expense of the customer unless determined otherwise by the City. On a case-by-case basis, the City and the State Division of Drinking Water (DDW) shall review the record drawings, and investigation reports, and determine the measures necessary to bring the existing system into full compliance with these Rules and Regulations. The City or the State DDW may deny issuance of a recycled water users permit if either determines that the proposed conversion cannot be safely made.

2.11 ADDITIONAL RESTRICTIONS ON THE USE OF RECYCLED WATER

2.11.1 Run-off, Ponding, and Overspray

The on-site facilities shall be designed to meet the peak irrigation demand of all plant materials used within the design area and to apply irrigation water in a manner

compatible with the infiltration rates of the soil types within the approved use area. Conditions that directly or indirectly cause a run-off of recycled water outside of the approved recycled water use areas; cause a ponding or overspray of recycled water; or permit windblown spray to pass outside of the approved use area, whether by design, construction practice, or system operation, shall be eliminated or controlled to the greatest extent possible with the use of the best practicable technology or methodology.

Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitos and other disease vectors, and to avoid creation of a public nuisance or health hazard. The following practices shall be implemented, at a minimum:

- Ditches receiving irrigation runoff, not serving as wildlife habitat, shall be maintained free of emergent, marginal, and floating vegetation.
- Low-pressure and unpressurized pipelines and ditches accessible to mosquitos shall not be used to store recycled water.

2.11.2 Protection of Drinking Fountains and Public Facilities

Any and all drinking fountains located within an approved recycled water use area shall be protected by relocation or isolating them from contact with recycled water, whether by windblown spray or by direct application through irrigation or other approved uses. Recycled water irrigation systems shall not be installed near food establishments or outdoor eating areas such as picnic tables. The goal is to eliminate as much as possible any potential for overspray of recycled water onto food establishments, picnic tables and drinking fountains in the most economic way. Alternative methods of accomplishing this shall include:

a) eliminating the facility in question,
b) moving the facility out of the irrigated area,
c) modifying the irrigation system to eliminate the potential for overspray (i.e. drip or bubbler systems) or not to irrigate in the area (eliminate landscaping or require hand watering in this area), protect the facility with a hood or screening wall/structure,
d) Additional methods may also be acceptable and will be evaluated on a case by case basis.

2.11.3 Hose Bibs and Quick Couplers

No customer shall use or install any hose bibs on a recycled water system regardless of style, construction or identifications. The use of quick couplers is at the sole discretion of the City. Their intended use shall require a separate plan review from the City. Only quick couplers with the approved color and identification will be allowed.

2.11.4 Fire Hydrants

No customer or other party shall use or install fire hydrants and other connections for fire services on any on-site system that presently operates or is designed to operate with recycled water, regardless of the construction and identification of the fire hydrant and other connections for fire services, unless approved by the City.

SECTION 3 – FACILITIES DESIGN AND CONSTRUCTION

3.1 DESIGN GUIDELINES

The design of the off-site facilities, including the preparation of plans and specifications shall be under the responsibility of an engineer registered with the State of California. The design of the on-site facilities that will use recycled water and the preparation of plans and specifications, shall be under the responsibility of a landscape architect, civil engineer or mechanical engineer registered with the State of California familiar with the design of such systems. All on-site recycled water facilities shall comply with the Guidelines for Distribution of Non-potable Water developed by the American Water Works Association (AWWA) California-Nevada Section and the State Health Services Department Guidelines for Use of Recycled Water and shall also comply with all the requirements, conditions and standards set forth in the current edition of the City of Lincoln Public Facilities Improvement Standards, and the provisions of these Rules and Regulations, and other related design standards and construction specification guidelines. The recycled water system including both off-site and on-site facilities shall be separate and independent of any potable water system. All plans and specifications shall be signed and sealed and shall meet the design standards.

3.2 OFF-SITE FACILTIES

Any off-site recycled water distribution facilities, to the extent determined by the City, required to serve developments in the City service area shall be provided by the applicant, owner, or customer at their expense, unless the City determines it is appropriate to construct these capital facilities. Plans and specifications for all recycled water distribution facilities shall be submitted to and approved by the City in advance of construction. The City will assume responsibility for providing recycled water service to the point of connection of such development upon transfer to the City the title to all off-site recycled water systems and any necessary easements. All easements shall be in a form acceptable to the City and not subject to outstanding obligations to relocate such facilities or any deeds of trust, except as approved by the City.

The property owner, proponent, or developer may request that the City enter into a reimbursement agreement for the portions of a system which are required to be oversized with capacity to supply more recycled water than the property owner, proponent or developer requires. The decision to enter into a reimbursement agreement shall be made by the City.

3.3 ON-SITE RECYCLED WATER FACILITIES

All on-site recycled water facilities which benefit the approved use area shall be provided by the applicant, owner or customer at his/her expense. The customer shall make, at his/her expense, any modification to the potable water system on the premises which is required by the City, in order to permit recycled water service, including but not limited to the installation by the customer of approved backflow preventers. On-site recycled water facilities shall be designed to accommodate the use of recycled water in those areas where the City has determined that recycled water will be supplied in the future, even though recycled water service is not immediately available when the design area is ready for construction. Provisions shall be made for connections to the recycled water system when it becomes available.

Plans and specifications for customer recycled water facilities shall be submitted to the City as specified in Section 3.5 of these Rules and Regulations.

3.3.1 Identification of On-site Pipes and Fittings

New on-site pipelines shall be identified as recycled water pipes by using a purple color code differentiating them from potable water piping. All piping and valves must also be appropriately labeled or continuously taped with appropriate identification. Approved use areas for recycled water service shall also be posted with precautionary notices to warn the public per Section 4.3. When converting an existing water service to recycled water usage the affected water pipelines shall be located and tested in coordination with the City and the regulatory agencies to ensure isolation from the potable water system. All necessary actions will be taken to bring the water pipelines into compliance with these Rules and Regulations. It is not necessary to provide identification of all existing buried pipelines, unless verification of isolation from the potable water system cannot be confirmed by the cross-connection test. Any existing buried pipelines that are uncovered shall be identified prior to use. The existing water facilities must have the approval of the City and regulatory agencies prior to initiation of recycled water service.

3.3.2 Color-Code for Recycled Water Pipes

The use of purple colored pipe, with the words "CAUTION: RECYCLED WATER – DO NOT DRINK" embossed or integrally stamped/marked on the pipe is the preferred method of identification. Continuous sleeve is an acceptable alternative to the colored pipe mentioned in Section 3.3.3.

The warning should be stamped on opposite sides of the pipe, repeated every three feet.

All connections, temporary and permanent to a recycled water system shall be identified in such a manner as to differentiate them from connections to a potable water system.

When potable water is being supplied to an area which is also being supplied with recycled water, the new potable water main shall also be identified. A color-coded tape, as determined by City, with the words "DRINKING WATER LINE" shall be fastened directly to the top of the potable water pipe and run continuously the entire length of the pipe. This tape shall be at least 3 inches in width. The color code for potable water shall be determined by City to differentiate it from recycled water.

3.3.3 Continuous Sleeves

A continuous polyethylene sleeve shall be installed on all new recycled water pressure and/or non-pressure service pipelines if purple colored pipe is not available. A purple sleeve with black lettering stating "CAUTION: RECYCLED WATER – DO NOT DRINK" shall run continuously the entire length of the pipe. Each section of sleeve should overlap the next section a minimum of 24 inches and should be secured at each sleeve joint.

3.3.4 Separation

A. Horizontal

A 10-foot separation of the recycled water pipeline shall be maintained at all times between a potable water pipeline and/or a parallel sanitary sewer or sludge pipeline. If a 10-foot separation is not possible, the approval for special construction requirements shall be obtained from the City and the State DDW prior to commencement of

construction. Common trench construction shall not be permitted. In any event, a horizontal separation less than 4 feet shall not be allowed.

B. Vertical

On new systems, potable water, recycled water, and sewer lines should be located from the ground surface in order of descending quality. Potable water shall be above recycled water which should be above sewer. Minimum vertical separation should be one foot between top and bottom surfaces of pipes. Exceptions to this general rule are as follows:

- On irrigation systems where intermittently pressurized recycled water lines (laterals) serve sprinkler heads, the potable water line(s) may be placed under the recycled water laterals. No special construction requirements are necessary provided that one-foot vertical separation is maintained.
- On sites using pressurized irrigation laterals with valve-in-head sprinklers, the potable water line(s) may be placed under the recycled water laterals if additional protection is provided for the potable line. Common practices include sleeving or automatic flow control/shut off devices installed and functioning properly on each lateral that crosses a potable line.

No additional special construction requirements are necessary provided that one-foot vertical separation is maintained.

C. Groundwater Wells

Application of recycled water within 50 feet of any well used for domestic water supply is prohibited, unless approved by State Water Board Division of Drinking Water. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.

3.4 RECYCLED WATER FOR CONSTRUCTION USE

3.4.1 Permits

The use of recycled water for construction purposes requires approval by the City of Lincoln. The Permit shall be obtained prior to beginning recycled water use.

3.4.2 Uses

Recycled water used for construction purposes may only be used for soil compaction during grading operations, dust control and consolidation, backfill consolidation around piping, mixing concrete, flushing sanitary sewers, and cleaning outdoor work areas.

3.4.3 Equipment

Equipment operators shall be instructed about the requirements contained herein and the potential health hazards involved with the use of recycled water. Water trucks, hoses, drop tanks, etc. shall be identified as containing recycled water and not suitable for drinking water.

Recycled water shall not be introduced into any domestic water piping system. No unprotected connection shall be made between equipment containing recycled water any part of a domestic water system.

3.4.4 Equipment and Facilities Cleaning

Service connections, equipped with recycled water meters and suitable back flow protection, for the construction use of recycled water shall be provided by the City at locations convenient to the use with the approval of the City.

3.5 SUBMITTALS

The following information shall be submitted to and approved by the City prior to commencing any construction. The only exception is recycled water for construction use described in Section 3.4.

3.5.1 Customer's Plans and Specifications

Civil site plans and specifications prepared by a civil engineer, a mechanical engineer, or a landscape architect registered with the State of California, for the construction of on-site recycled water facilities shall be submitted to the City for review and approval. The plans shall delineate the proposed recycled water service area, the proposed meter location, size and type of all recycled water service connections and on-site facilities. The plans shall include the layout of existing potable water pipelines and facilities including any areas in which recycled water must be specifically excluded.

3.5.2 Information on Customer's Plans

The following information shall be provided on the plans for every customer applying for any recycled water service meter:

Application information specified in Section 2.3.1

A. Meter size (inches)
B. Irrigated are to be served through the recycled water meter (square feet or acres).
C. Peak flow through the meter (gpm)
D. Estimate of the yearly recycled water requirement (acre-feet or HCF)
E. Service pressure at the meter as provided by the City (psi)
F. Topographic contours of the site, or if not available sufficient information to determine elevation differences within the site
G. Direction of drainage
H. Location of wells (if applicable)
I. Vertical and horizontal location of potable water lines, drinking fountains and sanitary sewers
J. Vertical and horizontal location of storm drains

3.5.3 Information Required for Recycled Water Irrigation Systems

If the on-site facilities include a landscape irrigation system the following data for the materials used in the irrigation system shall be included on the plans:

A. A pipe schedule listing pipe sizes and materials of construction
B. Valve types/sizes
C. The following information for each type of sprinkler head:
    a. Sprinkler radius (feet)
    b. Operating pressure (psi)
    c. Flow (gpm or gph)
    d. Sprinkler pattern

e. Manufacturer, model number and all pertinent information

D. Drip irrigation information and all pertinent equipment.
E. Estimates of application rate, acres to be irrigated, soil texture and soil infiltration rate, and information on pressure requirement, hourly delivery rate, and the wetting pattern of sprinklers.
F. All sprinkler valves shall be automatic and operated by a programmable controller with battery backup. Manually operated sprinkler valves are not acceptable.

3.5.4 Information to be Called Out on Customer's Plans

Exterior drinking fountains and potable water hose bibs and other public facilities shall be shown and called out on the plans. If no exterior drinking fountains or other public facilities are present in the design area, then it shall be specifically stated on the plans that none exists.

3.5.5 Standard Notes for Inclusion on Customer's Plans

As a minimum, provide the following notes as applicable, on the recycled water improvement and irrigation plans under the heading "Recycled Water General Notes:"

1. All public facilities such as dwellings, drinking fountains and outdoor eating areas shall be protected against recycled water spray, mist or runoff.
2. Conditions that directly or indirectly cause a run-off of recycled water outside the approved recycled water use area, or cause a ponding of recycled water or permit windblown spray to pass outside of the approved use areas, whether by design, construction practice, or system operation, shall be eliminated or controlled with the use of the best practicable technology and methodology.
3. Contractor shall adjust heads to prevent over-spraying onto sidewalks, streets and off-site.
4. Hose bibs are strictly prohibited. Only quick couplers with the approved color and identification will be allowed.
5. Identification, by means of purple color coding (Pantone 512 or approved equal), stenciling and warning tapes, as well as coverage of all wiring and irrigation piping shall conform to all applicable requirements of the City of Lincoln Public Facilities Improvement Standards and these Rules and Regulations.
6. All potable water and recycled water piping shall be installed with the stenciling oriented toward the top of the trench.
7. A minimum 10 foot out-to-out horizontal separation between new pressurized recycled water and new pressurized potable water pipelines must be maintained at all times as shown on approved plans.
8. Pressurized recycled water lines shall cross at least 12 inches below potable water lines and maintain a minimum 12 inch crossing separation between other utilities.
9. If a pressurized recycled water line must be installed above a potable water line or less than 12 inches below a potable water line, then the recycled water line shall be installed within a protective sleeve. The sleeve shall extend 10 feet from each side of the centerline of the potable line, for a total of 20 feet.
10. Developer/contractor shall conduct a cross-connection test and coverage test as directed by the City and State Water Board DDW or designated representative prior to any use of recycled water. The generally accepted cross connection test method is a pressure differential test involving a 24-hour shut down of the irrigation system followed by a 4-hour minimum shut down of the potable system. The

specific test procedures and test method will be determined by the City in conjunction with the Health Departments on a case by case basis.

11. An annual site inspection will be performed by the City and/or regulatory agencies. Annual site inspection may include:
    a. a site inspection and record check to determine if anything has changed system wide since the last inspection and to establish that the site is still in compliance with the Rules and Regulations,
    b. a system coverage test and functional operational test to determine that the system is being maintained in the proper manner and that overspray, ponding and runoff are being controlled,
    c. verification that the Site Supervisor information and training is current and that backflow device certifications are also current.
12. Prior to the utilization of recycled water, a signage plan showing the locations and design of recycled water "Do Not Drink" signs shall be forwarded to the City for approval.
13. Prior to the utilization of recycled water, a Site Supervisor shall be designated in writing. This individual shall be familiar with plumbing systems within the property, with the basic concepts of backflow/cross-connection protection, and the specific requirements of a recycled water system. The Site Supervisor shall educate all on-site maintenance personnel that recycled water is not approved for drinking purposes, hand washing or cleaning of tools. Copies of the Site Supervisor designation, including telephone numbers for emergency and after-hours contact shall be provided to the City.
14. Hours for irrigation with recycled water shall be from 10:00 p.m. to 6:00 a.m., unless otherwise approved by City. Any irrigation with recycled water between the hours of 6:00 a.m. and 10:00 p.m. must be under the supervision of the designated Site Supervisor.
15. Cross-connections between recycled water lines and potable water lines are strictly prohibited.
16. A physical separation shall be provided between adjacent areas irrigated with recycled water and potable water. Separation shall be provided by distance, concrete mow strips or others approved methods.

3.6 INSPECTION OF WORK

All work is subject to inspection by the City to ensure compliance with these Rules and Regulations. Work shall be left open and uncovered until approved by the City. The customer shall cooperate with those making the inspection and assist in the performance of the operational tests required.

3.7 RECORD (AS-BUILT) DRAWINGS

The applicant, customer, or owner shall submit as-built record drawings to the City before a service start-up is made.

All changes in the work constituting departures from the original design drawing shall be accurately recorded on two sets of drawings and submitted to the City for approval prior to construction.

SECTION 4 – FACILITIES OPERATION

4.1 OFF-SITE RECYCLED WATER FACILITIES

Operation, maintenance, and monitoring of all of the City's off-site recycled water systems including, but not limited to, recycled water transmission and distribution mains, service lines, valves, connections, storage facilities, and other appurtenances and properties up to and including the City's meter, shall be under the management and control of the City. No other persons except authorized representatives of the City shall have any right to enter any portion of the foregoing. No other persons except authorized representatives of the City shall have any right to operate, adjust, repair, change, alter, move or relocated any portion of the off-site recycled water system.

4.2 ON-SITE RECYCLED WATER FACILITIES

4.2.1 Customer's Responsibilities

The customer or owner shall be responsible for the safe and efficient operation, maintenance and upkeep of their on-site facilities. However, the City shall also have the right to monitor and inspect the on-site operation of the customer's facilities. The City or authorized representatives of the City shall monitor and inspect the entire recycled water distribution facility, including customer facilities and for these purposes shall have the right to enter upon the customer's premises during reasonable hours. Reasonable hours shall include hours when irrigation is being performed, which is typically between 10:00 p.m. and 6:00 a.m. Except in emergencies the City and other parties authorized by the City shall be entitled to enter upon the customer's premises with reasonable notice to the customer for on-site inspection during reasonable hours to verify that the customer's facilities are in conformance with the provisions of these Rules and Regulations and all applicable permits.

The customer shall notify the City of any and all updates or proposed changes, modifications of additions to the on-site facilities. Changes shall be approved by the City and shall be designed and constructed according to the requirements, conditions and standards set forth in these Rules and Regulations and other County requirements.

The customer shall comply with any and all applicable Federal, State, and local statutes, ordinances, regulations, contracts and requirements prescribed by the City.

It shall be the responsibility of the customer to notify the City of any and all failures of the recycled water system or violations of these Rules and Regulations. Failures or violations may include but are not limited to cross-connections, runoff conditions, ponding conditions, windblown spray conditions, unapproved uses, unprotected drinking fountains, unprotected public facilities, hose bibs and fire hydrants.

The customer shall keep a written log of all system failures and violations including corrective action taken. The log shall be reviewed by the City regularly.

4.2.2 Designation/Responsibility of the Recycled Water Site Supervisor

Each recycled water customer shall designate a Recycled Water Site Supervisor. The Recycled Water Site Supervisor shall be a person accepted and approved by the City to operate and maintain the on-site facilities and irrigation systems, and to assume the responsibilities outlined here below. The City shall require that the designated Recycled

Water Site Supervisor obtain instruction in the use of recycled water, such instruction being provided or approved by the City. He/she shall be the contact person for the customer in all matters between the user and the City concerning the operation of the on-site system and the use of recycled water. It shall be the responsibility of the customer to notify the City whenever a change of the Recycled Water Site Supervisor occurs. Subsequently, the customer shall be responsible to obtain the City's acceptance and approval of any newly designated Site Supervisor. The Recycled Water Site Supervisor will have the following responsibilities:

a) To oversee recycled water service and maintain on-site facilities using Best Management Practices (BMPs).
b) To ensure that all operations personnel are trained and familiarized with the use of recycled water, including all pertinent information contained in these Rules and Regulations and those applicable portions of the California Code of Regulations.
c) To furnish operations personnel with operating instructions, maintenance instructions, controller charts, and record drawings to ensure proper operation in accordance with the facilities design and these Rules and Regulations and all applicable permits.
d) To operate and control the customer's recycled water system in order to prevent direct human consumption of recycled water and to control and prevent run-off.
e) To carry out ongoing regular maintenance and upkeep to ensure the continued operation of all system elements within the requirements of these Rules and Regulations.
f) To prevent cross-connections to potable water systems, and also to protect the recycled water system from contamination from cross-connections to other sources.
g) To ensure that maintenance and inspection of backflow prevention assemblies is done regularly on an annual basis as per requirements of regulatory agencies, or more often in those instances where successive inspections indicate repeated failures.
h) To report to the City any and all failures in the on-site facilities whether or not such failures may result in violations.
i) The implementation of an Operations and Irrigation Management plan that provides for detection of leaks, and correction either within 72 hours of learning of a leak, or prior to the release of 1,000 gallons.

4.2.3 Operation and Control of On-site Recycled Water System

The goal is to minimize overspray and runoff and confine recycled water to the use area. In addition, to the extent possible, the operation of the irrigation system shall be during periods of minimal public use of the approved area. Such periods of operation shall remain within any general period of recycled water irrigation operation specified by the City.

Operation and control measures of on-site recycled water systems shall include, but not limited to, the following:

a) On-site recycled water facilities shall be operated in such a manner to prevent or control surface flows or windblown sprays of recycled water across boundary lines, or into areas not approved for recycled water use.

b) The system design shall avoid spray patterns that tend to accumulate recycled water to produce ponding and/or run-off on public rights-of-way or adjoining areas not approved for recycled water use.
c) It is not practical to completely eliminate overspray or runoff. Excessive irrigation with recycled water which results in excessive runoff of recycled water, or continued irrigation of recycled water during periods of rain is prohibited.

4.3 WARNING SIGNS

Warning signs are required to inform the public that recycled water is being used. Signs shall be required at site entrances, any customer field office, maintenance building, or yard within the approved use area, except as required by the regulatory agencies on a case-by-case basis. Warning notices and labels shall be posted on designated facilities such as controller panels, quick couplers, or blow-off valves on trucks and temporary construction facilities.

4.4 MONITORING AND INSPECTION

The City, State Water Board DDW, and/or Regional Water Quality Control Board, or authorized representatives of any of these agencies shall have authority to monitor and inspect the entire recycled water system including both on-site and off-site facilities. The City shall conduct monitoring programs, as it deems necessary, to ensure that customer's recycled water facilities are being operated in accordance with these Rules and Regulations, including the provision that cross-connections between potable water facilities and the recycled water facilities do not exist. In carrying out these functions the City, the State Water Board DDW, and/or the Regional Water Quality Control Board, or authorized representatives of any of these agencies shall have the right to enter any customer's premises during reasonable hours upon presentation of proper credentials. Reasonable hours shall include hours when irrigation is being performed to ascertain whether the user is complying with the City's Rules and Regulations for Recycled Water. The customer shall indemnify and hold the City harmless for any damage, loss, or injury alleged to have been caused by City personnel while inspecting on-site facilities, except where the City's sole negligence is duly established.

Each time there is a change of either owner or customer on any commercial or industrial premises, the owner or customer shall notify the City immediately, The City will then reassess the level of protection required. Also, any alterations to existing on-site facilities that may affect required protection levels must be reported immediately to the City.

SECTION 5 – RECYCLED WATER SERVICE RATES

5.1 GENERAL

All rate and fees are set by the City Council of the City of Lincoln. The current rate and fee schedule is available from Consolidated Utility Billing.

Applicants for recycled water service shall pay their fair share for the construction of facilities needed to deliver recycled water to the applicant's property. All fees and estimated construction costs shall be paid prior to construction; however, the City may reimburse the applicant for a portion of the cost of such facilities as set in Section 5.4.

5.2 CHANGE OF RATES OR CHARGES

The City reserves the right to change the schedule of recycled water rates, service charges and any other charges, deposits, or fees at any time. These changes are subject to the terms of any existing recycled water service permits (and/or agreements) and will be made by appropriate action of the City.

5.3 TEMPORARY SERVICE

The charges for recycled water sold through temporary meters shall be billed and paid as specified by the City.

5.4 FINANCIAL PARTICIPATION BY THE CITY

Under certain circumstances, the City may contribute to the cost of constructing the facilities needed to deliver recycled water to an applicant's property. Subject to the availability of funds, the City may:

a) Reimburse an applicant for costs incurred to install oversized facilities.
b) Elect to participate in or construct lateral lines, main lines, reservoirs, pumping stations or other facilities, as determines necessary, and/or as funds are available.

APPENDIX A – GLOSSARY

City of Lincoln – Water Recycling

Recycled Water Use

GLOSSARY

AFY	Acre-Feet per Year
Agricultural Use	Water used for the production of crops and/or livestock and the preparation of these products for market
Agricultural User	Any person (as defined herein) engaged in irrigation of food, fodder, fiber, seed, or nursery crops for commercial purposes.
Air-Gap Separation	A physical break between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the top rim of the vessel, and in no case less than 1 inch.
ANSI	American National Standards Institute.
Applicant	An Owner or authorized representative of a potential reuse site who applies for recycled water service under terms of the appropriate regulations. An approved Applicant becomes a User.
Application Rate	The rate at which irrigation water is applied to a design or use area, expressed in inches per hour.
Approved Backflow Preventer	A device installed to protect the potable water supply from contamination by non-potable water, such as treated wastewater. This device shall be approved by the State Water Board Division of Drinking Water (DDW) and the City.
Approved Check Valve	A check valve that seats readily and completely. It must be carefully machined to have free moving parts and assure water tightness. The face of the closure element and valve seat must be bronze or other non-corrodible, non-sticking material. The closure element (e.g. Clapper) shall be internally weighted or otherwise internally equipped to promote rapid and positive closure in all sizes where this feature is obtainable.
Approved Double Check Valve Assembly	An assembly of at least two independently acting approved check valves including tightly closing shut-off valves on each side of the check valve assembly and suitable leak-detector drains plus connections available for testing the water tightness of each check valve.
Approved Use	An application of recycled water in a manner, and for a purpose, designed in a user agreement issued by the City and in compliance with all applicable Regulatory Agency requirements
Approved Use Area	A site with well-defined boundaries, designated in a user agreement issued by the City to receive recycled water for an approved use and acknowledged by all applicable Regulatory Agencies.

As-Built Drawings	Record drawings that show the completed facilities as constructed or modified.
ASTM	American Society for Testing Materials.
Automatic System	Controllers, valves, and associated equipment used to program and operate irrigation systems for the efficient application of recycled water.
Auxiliary Water Supply	Any water supply on or available to the premises other than the City potable water or recycled water supplies.
AWWA	American Water Works Association
Commercial Use	Water used for toilets, urinals, sewer trap priming, decorative fountains, and related uses.
Connection Fee	A fee imposed by the City for obtaining recycled water service from the City by means of its recycled water facilities.
Construction Use	An approved use of recycled water to support approved construction activities, such as soil compaction and dust control during grading.
Cross-Connection	Any physical connection between any part of a water system used or intended to supply water for drinking purposes and any source or system containing water or substance that is not or cannot be approved as safe, wholesome, and potable for human consumption.
DDW	State Water Board Division of Drinking Water.
DHS	State of California Department of Health Services.
Direct Beneficial Use	The use of recycled water, which has been transported from the point of treatment or production to the point of use without an intervening discharge to waters of the State.
Discharge	Any release or distribution of recycled water to a use area or disposal site/mechanism. All discharges of recycled water must be approved by regulatory agencies.
Dual or Multiple Water Systems	Systems that provide two or more grades of water to the same area - one potable and the others non-potable. The quality, quantity, reliability and pressure available from each system vary with the sources and intended uses for each grade of water.
Effluent	Treated wastewater discharged from a Wastewater Treatment Plant.
Gray Water	All wastewater generated in the household, excluding toilet wastes and kitchen sinks, includes wastewater from the bathroom sinks, baths, showers, laundry facilities, and dishwashers.
Industrial Process Water	Water used for industrial processes such as cooling, flushing, and other related uses.

Infiltration Rate	The rate at which water penetrates the soil surfaces and enters the soil profile, expressed in inches per hour.
Irrigation Period	The time, from start of water flow to end, which a specific area receives recycled water by direct irrigation application, no matter how often the specific area is irrigated – that is, length of the duty cycle.
Irrigation Use	An approved use of recycled water for landscape irrigation as defined for recycled water under Title 22, Division 4, Chapter 3 of the California Code of Regulations.
Landscape Impoundment	An open body of recycled water on a use site that is utilized for aesthetic enjoyment or which otherwise serves a function not intended to include public contact.
Landscape Irrigation/use	Recycled water used for the propagation and maintenance of trees, shrubs, ground cover and turf. This plant material is intended for erosion control and aesthetic value, not for resale/profit purposes.
Non-potable Water	Water that has not been treated for, or is not acceptable for, human consumption in conformance with federal, state, and local water standards. Non-potable water includes recycled water.
Off-site	Designates or relates recycled water facilities up to and including water meter that are owned and operated by the City.
On-site	Designates or relates to facilities owned and operated by the User.
Operations Personnel	Any employee of a User, whether permanent or temporary, or any contracted worker whose regular or assigned work involves the supervision, operation or maintenance of equipment on any portion of on-site facilities using recycled water.
Operator	Any person, persons or firm, who by entering into an agreement with a User is responsible for operating on-site facilities.
Owner	Any holder of legal title, contract purchaser, or lessee under a lease with an unexpired term of more than one (1) year, for property for which recycled water service has been requested or established.
Permit	A processed and approved application package to, and agreement with, the City for recycled water service.
Point of Connection (POC)	This is the point where the User's system ties to the City's recycled water distribution system, usually at the water meter.
Ponding	Unintentional retention of recycled water on the surface of the ground or other natural or manmade surface for a period following the cessation of an approved recycled water use activity such that a hazard or potential hazard to the public health results.
Potable Water	Water that is safe, pure and wholesome, does not endanger the lives or health of human beings and conforms to the latest edition of the California Safe Drinking Water Act, or other applicable

	standards.
PSI	Pounds per square inch. The most common unit of pressure measurement.
Rate and Fee Schedule	The schedule of all rates, charges, fees and assessments to be made concerning the use of recycled water served by the City as approved or as amended by the City.
Recreational Impoundment	An open body of recycled water located on a use site that may be used for unrestricted body contact (swimming, wading) or restricted non-body contact (boating, fishing) recreation.
Recycled Water	Non-potable water that results from a high level of treatment of municipal wastewater and which is approved for purposes other than drinking water through Title 22 of the California Code of Regulations.
Regulatory Agencies	Those public agencies legally constituted to protect the public health and water quality, such as the State Department of Public Health, the California Regional Water Quality Control Board and the local City or County Health Department.
Reduced Pressure Principle Device (RPPD)	A backflow preventer incorporating not less than two check valves, and automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing.
Run-off	Recycled water that is intentionally or incidentally allowed to drain outside the approved recycled water irrigation area.
RWQCB	Regional Water Quality Control Board.
Secondary Effluent	Wastewater which has been treated by gravity sedimentation to remove settleable solids remaining after the primary biological treatment process.
Service	The furnishing of recycled water to a User through a metered connection to the on-site facilities.
Service Connection	The City facilities between the City recycled water distribution system and the customer's recycled water service valve, including but not limited to, the meter, meter box, valves, and piping equipment.
Site Supervisor	A qualified person designated by the User to provide liaison with the City. This person should be responsible for the installation, operation and maintenance of the recycled and potable water systems and also prevention of potential hazards. They should have the knowledge and authority to carry out any requirements of the City, and should be available to the City at all times.
Standard Specifications	Specifications adopted by the distributor for construction of water and nondomestic water facilities.
Tertiary Effluent	Secondary effluent which has been disinfected and filtered. Full

	body contact is not allowed unless certain requirements are fully met.
Unauthorized Discharge	Any release or spill of recycled water that violates the Rules and Regulations of the City or all applicable Federal, State or local statues, regulations, ordinances, contracts or other requirements.
User	Any person, persons or organization (including, but not limited to, any private company or corporation, public utility, municipality or other public body or institution) issued a recycled water Users' Permit by the City. The User and Owner may be the same entity.
User Agreement	An agreement issued by the City to a recycled water service Applicant after the satisfactory completion of the service application procedures. This Agreement forms a service agreement between the User and the City that legally binds the User to all conditions stated in the Agreement and all applicable City requirements.
Violation	Noncompliance with any condition or conditions of the City's Rules and Regulations, User Agreement, water recycling requirements issued by the Regional Board and/or Title 22 of the California Code of Regulations by any person, action or occurrence, whether willfully or by accident.
Windblown Spray	Dispersed, airborne particles of recycled water that can be transmitted through the air to locations other than those approved for the direct use of recycled water.

APPENDIX B – REGULATORY FRAMEWORK

City of Lincoln – Water Recycling

Recycled Water Use

REGULATORY FRAMEWORK

State Water Board:

- Establishing general policies governing the permitting of recycled water projects.
- Protecting water quality and sustaining water supplies.
- General oversight over recycled water projects.
- Review of Regional Water Board permitting practices.
- Leading the effort to meet recycled water use goals set forth in the Recycled Water Policy.
- The development of a general permit for irrigation uses of recycled water.

State Water Board, Division of Drinking Water (DDW):

(Responsibilities previously held by the California Department of Public Health (CDPH))

- The protection of public health and drinking water supplies.
- The development of uniform water recycling criteria appropriate for particular uses of recycled water.
- Regional Water Boards rely on the expertise of DDW for the establishment of permit conditions needed to protect public health.

Regional Water Quality Control Board (RWQCB):

- The protection of surface and groundwater resources with the issuance of permits that implement DDW's recommendations, the Recycled Water Policy, and applicable law.
- Use their authority to the fullest extent possible to encouraae use of recvcled water.

California Department of Water Resources (CDWR):

- Reviewing and updating the California Water Plan.
- Evaluating the quantity of recycled water use, and planning for the potential future uses.
- Relies on State Water Board and RWQCBs for data.
- Shares the authority to allocate and distribute bone funding with the State Water Board.

City of Lincoln (City):

- Master Reclamation Permit (R5-2005-0040-01)
- May authorize specific reclamation projects (services) on a case-by-case basis.
- Enforce rules and regulations for Users governing the design and construction of recycled water use facilities and use of recycled water in accordance with Title 22, and the Master Reclamation Permit.
- The development of administrative procedures and User Agreements.

California Public Utilities Commission (CPUC):

- Approving rates and terms of service for the use of recycled water by investor-owned utilities.

APPENDIX C – OBTAINING RECYCLED WATER SERVICE

City of Lincoln – Water Recycling

Recycled Water Use

OBTAINING RECYCLED WATER SERVICE

SUMMARY OF STEPS TO OBTAIN RECYCLED WATER SERVICE

NOTE: The following sequence of events is general in nature and is for illustration only. Please check with the City of Lincoln, Department of Public Services for the appropriate process.

1. Potential User contacts the City of Lincoln Department of Public Services for recycled water service, and the City responds in a timely manner.
2. Potential User must have irrigation plans stamped by a registered landscape architect or a registered civil engineer.
3. Potential User submits a recycled water service application and pays the application fee.
4. The City reviews the application. If approved, the User submits two sets of plans and all applicable information outlined in Section 3.5 of the City's Rules and Regulations and User Reclamation Plan, for system conversions see Section 2.10 of the City's Rules and Regulations.
5. After review and correction, City then submits plans and User Reclamation Plan to the State Board DDW (if applicable) prior to construction.
6. DDW reviews the detailed plans and User Reclamation Plan for recycled water service.
7. Upon approval from DDW, the customer constructs facilities with inspection by the City.
8. The customer submits Record Drawings the City.
9. The City provides copy of Record Drawings to DDW.
10. Upon customer's request City performs final inspection and operational testing.
11. City to verify customer's onsite supervisor has received proper training and certification.
12. If the final inspection passes, the City grants final approval for service.
13. The City issues Recycled Water Service Permit.
14. The customer initiates recycled water service.

APPENDIX D – RECYCLED WATER USE PERMIT APPLICATION

City of Lincoln – Water Recycling

Recycled Water Use Permit Application

RECYCLED WATER SERVICE

1. GENERAL

Property or Development Name: _____

Customer Name: _____

Name of Company: _____

Mailing Address: _____

City/State/Zip Code: _____

Phone: _____ Office _____Cell

Project/Site Name: _____

Project/Site Address: _____

City/State/Zip Code: _____

Property Owner(s): _____

Mailing Address: _____

City/State/Zip Code: _____

Phone: _____ Office _____Cell

Legal Description of the Property: _____

_____

_____

2. RECYCLED WATER SUPERVISOR:

Name: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Phone: _____ 24-hour Phone: _____

Email: _____

3. RECYCLED WATER USE INFORMATION (Check all that apply)

3.1 Use of Recycled Water: __Landscape Irrigation __Commercial Use __ Industrial Use __Agricultural Use __Construction Use __Groundwater Recharge __ Wildlife Habitat __Recreational __Impoundments ___Other: _____

3.2 Brief description of use(s): _____

3.3 Total Irrigated Area: _____ acres Plant Types: _____

Site Topography (Slopes): _____ Soil Types: _____

3.4 Estimated Demand:

Total Quantity: _____MG/year

Maximum at POC: _____GPM (Total)

Min. Pressure: _____psi

Hours/Day: _____

Days/Week: _____

3.5 Number of Service Connections: _____

Number of meters requested: _____ Size of Meters: _____

3.6 Select: _____ New System ____ Converted System

3.7 Current irrigation source (if applicable): _____

3.8 How are pipes identified: ___Color Coded __Stenciled __Tape Wrap __ Other: _____

3.9 Are there special construction requirements? ___Yes ___No

If yes, explain: _____

_____

3.10 Date desired to initiate service: _____

3.11 Duration of service (temporary, interim, construction use, permanent): _____

3.12 Additional information: (include special conditions affecting service): _____

_____

_____

Please include the following items:

a) Items to be submitted with the Initial Application:
    a. Location and vicinity map showing the demarcation of the recycled water use area
    b. Attachment of a properly notarized affidavit
    c. Check or money order for required fees
b) Items to be submitted subsequent to the approval of the application:
    a. Drawing of the project area which shall include and show:
        i. Location and vicinity map
        ii. Specific recycled water use area
        iii. Specific potable water use areas
        iv. Location of service connections
        v. Size of service connection
        vi. Main line locations
        vii. Gate valve locations
        viii. Warning sign locations

I, the customer, have read and understand the City of Lincoln's Rules and Regulations for Recycled Water Use and Distribution and agree to restrict recycled water use for the purposes described in this application. I agree to use recycled water in accordance with these Rules and Regulations and all other applicable documents. I understand that recycled water may not be compatible with certain types of vegetation because of its chemical composition. I agree that the City will not be liable for damages that may occur to vegetation or for damages which may occur due to uses of recycled water for purposes not included in this application.

Customer's Signature: _____ Date: _____

[The City to complete the following]

STATUS OF APPLICATION:

___ Approved

___ Sent to State Water Board DDW for Approval

___ The Customer needs to submit required fees

___ The Customer needs to submit additional information

___ The Customer denied recycled water service

___ Returned to applicant

Comments: _____

_____

Service connection(s) size approved ____Yes ____ No

If not, why? _____

Service location approved? ___ Yes ____ No

If not, why? _____

Use(s) approved? ___ Yes ___ No Comments: _____

Can the City provide requested recycled water service with existing facilities ___ Yes ___ No

If not, what are the constraints? _____

Is recycled water main extension required? ___ Yes ___ No

Comments: _____

Will this system be initially connected to the potable water system? ___ Yes ____ No

Describe level and method of backflow protection: _____

_____

Reviewed by: _____ Date: _____

Title: _____

APPENDIX E – USER RECLAMATION PLAN

City of Lincoln – Water Recycling

Recycled Water Use Permit Application

USER RECLAMATION PLAN

1. GENERAL

Property or Development Name: _____

Customer Name[1]: _____

Name of Company: _____

Mailing Address: _____

City/State/Zip Code: _____

Phone: _____ Office _____Cell

Project/Site Name: _____

Project/Site Address: _____

City/State/Zip Code: _____

APN: _____

Property Owner(s)[1]: _____

Mailing Address: _____

City/State/Zip Code: _____

Phone: _____ Office _____Cell

Current Zoning: _____

Property Use: _____

Legal Description of the Property: _____

_____

_____

1) If property owner and customer differ, please provide consent from the owner of the property on supplemental notarized form.

2. RECYCLED WATER SITE SUPERVISOR:

Name: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Phone: _____ 24-hour Phone: _____

Email: _____

3. RECYCLED WATER USE INFORMATION

Intended recycled water use: _____

Brief description of use(s): _____

Estimated Demand:

Total Quantity: _____MG/year

Maximum at POC: _____GPM (Total)

Min. Pressure: _____psi

Hours/Day: _____

Days/Week: _____

Number of Service Connections: _____

Number of meters requested: _____ Size of Meters: _____

4. NEW SYSTEMS

New systems must submit all information outlined in Section 3.5 of the Rules and Regulations. Including civil site plans and specifications prepared by a civil engineer, mechanical engineer, or a landscape architect registered with the State of California.

Site plans are to include the following, indicate if provided:

____ Delineation of the proposed recycled water use area

____ Proposed meter location and size

____ Estimated peak flow through the meter, and yearly recycled water requirement

____ Size and type of all recycled water service connections

____ On-site recycled water use facilities

____ Layout of existing or proposed potable water lines

____ Areas where recycled water is specifically excluded

____ Service pressure at the meter as provided by the City (psi)

____ Topographic contours of the site, or if not available sufficient information to determine elevations differences at the site

____ Drainage direction

____ Location of wells (state if none exist)

____ Vertical and horizontal separation of potable water lines, storm drains, and sanitary sewers

____ Location of water fountains, potable water hose bibs, outdoor eating areas and other public facilities (state if none exist)

____ Proposed locations of warning signs

Additional information to be provided for Irrigation Systems:

____ Irrigated area to be served through the recycled water meter (square feet or acres)

____ A pipe schedule listing pipe sizes and materials of construction

____ Valve types and sizes

____ The following for each type of sprinkler head, sprinkler radius (feet), operating pressure (psi), flow (gpm), sprinkler pattern, manufacturer, model number and all pertinent information

____ Drip irrigation information and all pertinent equipment

____ Estimates of application rate, soil texture, and soil infiltration rate.

____ Pressure requirements, hourly delivery rates, and wetting pattern of the sprinklers

____ Programmable control information

____ Standard Recycled Water Notes found in Section 3.5.5 of the Rules and Regulations

5. RETROFIT SYSTEMS

Are Record Drawings provided with Application? _____

Current irrigation source (if applicable): _____

How are pipes identified: ___Color Coded __Stenciled __Tape Wrap __ Other: _____

Estimated system age: _____

Controller Type: _____

Are there hose bibs? _____

Please provide a revised site plan that includes system modifications, warning sign locations, delineation of the Use Area, wells, POCs drinking fountains and all available information required above for new systems. Indicate above if provided.

6. OPERATION AND MAINTENANCE

The City of Lincoln requires that each site supervisor develop an Operations and Irrigation Management Plan ensure compliance with the City's Rules and Regulations for recycled water use. This plan must be available upon request to the Regional Water Quality Control Board or the State Board Division of Drinking Water. Please attach a copy of the Operations and Irrigation Management Plan.

The Operations and Irrigation Management Plan is to include:

- Cross connection control
- Inspection and maintenance of backflow preventers
- Proper installation, operation, and maintenance of recycled water systems
- Measures to avoid ponding and significant run-off
- The use of Best Management Practices (BMPs) and the application of recycled water at reasonable agronomic rates considering soil, climate, and nutrient demand
- Measures to ensure that irrigation ceases 48 hours prior to a storm event, during a storm event and within 24-hours after precipitation
- Irrigation doesn't occur at wind velocities greater than 30 mph
- Consideration for nutritive demand of the landscape
- Irrigation infiltrates within a 48-hour period
- Regular monitoring to ensure compliance with all Rules and Regulations

Describe the reclaimed water management facilities: _____
_____
_____
_____

Type of irrigation (spray, drip, etc.):_____
Points of Connection (POC): _____
_____

Control System: _____

Describe any potential cross connections: _____
_____
_____

Are there drinking water wells within 1,000 feet of the use area? _____

Describe how the recycled water system will be operated and maintained in order to comply with the City of Lincoln's Rules and Regulations and all other applicable recycled water regulation (attach additional sheets if necessary): _____
_____
_____
_____
_____
_____
_____

APPENDIX F – RECYCLED WATER SERVICE PERMIT

City of Lincoln – Water Recycling

Recycled Water Use

RECYCLED WATER SERVICE PERMIT

CUSTOMER ACCOUNT NUMBER: _____

Customer Name: _____
Relationship to property: _____
Phone: _____ Office _____Cell
Mailing Address: _____
City/State/Zip Code: _____

Project/Site Name: _____
Project/Site Address: _____
City/State/Zip Code: _____
Property Owner(s): _____
Mailing Address: _____
City/State/Zip Code: _____
Phone: _____ Office _____Cell

RECYCLED WATER SUPERVISOR

Name: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Phone: _____ 24-hour Phone: _____
Email: _____

RECYCLED WATER USE INFORMATION

Approved Use(s)
1. _____
2. _____
3. _____

Approved Use Area(s)
1. _____
2. _____
3. _____

Total Irrigated Area: _____ acres

Recycled Water Demand:

Meter Account	Meter Size	Min. Pressure (psi)	Max Flow (GPM)	Area Served (AF/year)	Yearly Consumption
Totals:					

This is a: _____ New System ____ Converted System

Method of recycled water pipe identification:

___Color Coded __Stenciled __Tape Wrap __ Other: _____

Recycled water service initiated on: _____

This is a: ___Permanent ___ Temporary ____Interim ___Construction recycled water service to stop on: _____

Rate charged for service: _____ $/gallon plus applicable charges as follows:

_____

_____

Special Requirements/Conditions: _____

_____

_____

FINAL INSPECTION BY THE CITY:

I have inspected the recycled water system governed by this permit and attest that the construction and operation of this system are in accordance with the City's Rules and Regulations for Recycled Water Use and Distribution.

Inspector: _____ Date: _____

Title: _____

CUSTOMER AGREEMENT:

I have reviewed the City's Rules and Regulations for Recycled Water Use and Distribution, and agree to operate this recycled water service in accordance with all provisions of this permit and all applicable documents. I agree to be responsible for training and supervising all personnel under my control who will be involved in operating the recycled water system.

I agree that no changes to the recycled water system will be made without issuance of an amended permit. I am aware of any/all fines and penalties to be assessed for any/all violations of these Rules and Regulations for Recycled Water Use and Distribution.

Customer's Signature: _____ Date: _____

APPENDIX G – RECYCLED WATER TRUCK PROGRAM PERMIT

City of Lincoln – Water Recycling

Recycled Water Use Permit

RECYCLED WATER TRUCK PROGRAM

1. USER INFORMATION

User's Name: _____

Name of Company: _____

Mailing Address: _____

City/State/Zip Code: _____

Office Phone: _____

Primary Contact: _____

Title: _____

Cell Phone or Other Phone: _____

Email: _____

2. TRUCK INFORMATION

Provide the following information for the truck(s) for which a permit is requested. The City of Lincoln staff must inspect each truck to determine that it is equipped with the necessary air gap before decal issuance.

Truck Trailer # (if applicable)	License Plate Number	Capacity of Tank or Storage Containers	Vehicle Equipped with Air Gap?	Decal #s

3. RECYCLED WATER USE INFORMATION (Check all that apply)

Use of Recycled Water: __Compaction __Dust Control __ Irrigation __Power Washing

__Sewer Flushing __Street Cleaning ___Other:_____

RECYCLED WATER MUST NOT BE USED FOR STORM DRAIN FLUSHING

Application Method: __Tank Truck __Spray __Wash Water ___Other: _____

Location of Application: _____

This Recycled Water Use Permit must be available for inspection at all times. The recycled water user/user's agent must carry two copies in the truck and present one copy at City's Wastewater Treatment and Reclamation Facility (WWTRF) Security Gate for water pickups at that location only. This Permit is subject to all requirements and restrictions specified by the applicable Regional Water Quality Control Board and the State Water Board Division of Drinking Water.

Where you expect to apply recycled water:

Location 1: _____

City: _____

Address: _____

Location 2: _____

City: _____

Address: _____

Location 3: _____

City: _____

Address: _____

Location 4: _____

City: _____

Address: _____

(Attach separate sheet if necessary)

4. RECYCLED WATER USE SIGNS

User agrees to install, maintain, and keep in place while using recycled water three magnetic signs (on both sides and rear of each truck) identifying that recycled water is in use. City will provide the first set of signs at no charge; replacement signs to be paid for at cost of user.

User must initial here to acknowledge these requirements: _____ (initials)

5. RECYCLED WATER USE GUIDELINES AND REQUIREMENTS

The Recycled Water User Guidelines ("Guidelines") which contain requirements and restrictions for the use of recycled water in construction, and incorporated herein for reference. User agrees to abide by all of the requirements and restrictions contained in the Guidelines and Regional Board/Public Health Recycled Water Requirements. User has identified the person below as the person responsible for implementing worker/public protection requirements and the Regional Board/Public Health Recycled Water Requirements at each site (e.g. humans are not to drink recycled water or use it for preparing food, etc.).

In the event there is a recycled water spill, questions on compliance requirements, or User notices a use not in accordance with requirements stated herein, User shall contact the City of Lincoln immediately at (916) 434-2450.

Name of Responsible Person: _____

6. FEES, RATES, AND CHARGES

There is a processing fee of _____ to process the initial application/permit. ____ will be kept as a security deposit and will be refunded when the Permit is terminated less any outstanding usage charges. The processing fee for the initial application/permit must be paid in advance. For Permit extensions, an annual processing fee of ____ shall be paid in advance prior to the issuance of new decals.

The initial usage charge imposed by the City of Lincoln shall be _____ per 1000 gallons. The City will prepare an invoice quarterly in the year in which charges for the recycled water are assessed, calculated by multiplying the 1000 gallons of water delivered to Recycled Water User during the previous quarter by the cost per 1000 gallons established.

The User has thirty (30) days from the date of invoice to pay the quarterly invoice. If payment is not received a 10% penalty charge will be applied if payment is not received within sixty (60) days of invoice date. In addition, permit will be suspended and a $10 per day late fee will be applied.

7. METHOD AND PLACE OF GIVING NOTICE, SUBMITTING BILLS AND MAKING PAYMENTS

All notices, bills, and payments shall be made in writing and may be given by personal delivery or by mail. Notices, bills, and payments sent by mail shall be addressed as follows:

_____
_____
_____
_____

8. VEHICLE REGISTRATION AND INSURANCE REQUIREMENTS

Permit holder must provide and attach copies of current vehicle registration (for each truck) and the following insurance requirements: 1) Vehicle Liability; 2) Commercial Liability; 3) Workers' Compensation.

9. INDEMNIFICATION

User agrees to accept all responsibility for loss or damage to any person or entity, including the City of Lincoln, and to indemnify, hold harmless, and release the City, their officers, agents, employees, from and against any actions, claims, damages, liabilities, disabilities, or expenses, that may be asserted by any person or entity, including User, that arise out of, pertain to, or relate to any act, omission or negligence of User. User agrees to provide a complete defense for any claim or action brought against the City based upon a claim relating to User's act, omission or negligence User's obligations hereunder apply whether or not there is concurrent negligence on City's conduct. City shall have the right to select their legal counsel at User's expense, subject to User's approval, which shall not be unreasonably withheld. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or compensation payable to or for User or its agents under workers' compensation acts, disability benefits acts, or other employee benefit acts.

10. PERMIT VALIDITY PERIOD/TERMINATION

This Permit shall be valid from the date of issuance until _____, unless it is terminated as provided below. This Permit may be terminated by City if the City determines that User has violated any of the Guidelines, the Regional Board/Public Health Recycled Water Requirements, or any of the other requirements of this Permit. Termination shall be effective immediately upon notification by the City by phone, fax, email, or mail.

11. NO ENTITLEMENT TO WATER/SUPPLY SUBJECT TO AVAILABILTIY

This Permit does not entitle User to any quantity of recycled water. Supply of recycled water to User is subject to availability as determined by the City of Lincoln and to any federal, state or local requirements which limit supply or availability. To the extent recycle water is available, supply shall be on a first-come, first-served basis. Entities with Recycled Water Agreements with the City shall have priority over User in supply of recycled water.

12. PERMIT NON-TRANSFERABLE

This Permit is issued only to User as specified in Section 1 of this Permit above. It may not be transferred to any other entity or person.

AUTHORIZATION

User is authorized to use recycled water from Recycled Water Truck Program identified above in accordance with the City's Recycled Water Truck Program Guidelines and recycled water use requirements and restrictions of the applicable Regional Water Quality Control Board and the State Water Quality Control Board Division of Drinking Water.

Name (print): _____

City Engineer or Public Services Director

Signature: _____

Date: _____

CERTIFICATION

I certify that I am an authorized agent for the User cited in this application and that I have authority to bind the User to the requirements of this permit and program. I hereby certify under penalty of perjury that the information provided in this permit and in any attachment is true and accurate to the best of my knowledge. I also certify that I have read the applicable recycled water user rules and regulation of the applicable Regional Water Quality Control Board and State Water Board Division of Drinking Water and the City's Recycled Water Truck Program Guidelines and agree to abide by them.

Signature of User: _____

Print Name: _____

Title: _____

Company: _____

Date: _____

APPENDIX H – USER GUIDELINES, REGIONAL BOARD/PUBLIC HEALTH RECYCLED WATER REQUIREMENTS FACTSHEET

City of Lincoln – Water Recycling

Recycled Water User Guidelines

REGIONAL BOARD/PUBLIC HEALTH RECYCLED WATER REQUIREMENTS

ALLOWED USES

The City of Lincoln's Master Reclamation Permit (Order No. R5-2005-004-01) allows uses of reclaimed water that are Identified in Chapter 3, Division 4, Title 22, California Code of Regulations (CCR), Section 60301 *et. seq.* (hereafter Title 22).

- Agricultural Irrigation*
    - Food crops where recycled water contacts the edible portion of the crop, including root crops
    - Ornamental nursery stock and sod farms
    - Pasture for animals (including milk animals for human consumption)
    - Orchards
    - Vineyards
    - Nonfood baring trees
    - Fodder crops
    - Etc.
- Landscape Irrigation
    - Parks and playgrounds
    - School yards*
    - Residential Landscaping*
    - Unrestricted-access golf courses
    - Cemeteries
    - Freeway landscaping
    - Any other irrigation uses non prohibited by other provisions of the California Code of Regulations (CCR)*
- Construction use
    - Dust Control
    - Compaction
    - Cleaning outdoor work areas
    - Mixing concrete
    - Flushing sanitary sewers
    - Backfill consolidation around piping
    - Priming drain traps

** Some uses require the development of a Use Area Report. Other approved uses that require additional City review and reporting include:*

- Surface water impoundments
- Groundwater recharge projects
- Dual Plumbed Systems
- Wildlife habitat
- Industrial process water that will not contact workers
- Industrial or commercial cooling or air conditioning
- Industrial boiler feed water
- Flushing Toilets and urinals

- Decorative fountains
- Commercial laundries
- Structural fire fighting
- Artificial snow making
- Commercial car washes

REQUIREMENTS FOR USE

The use of recycled water may not cause degradation of groundwater in accordance with the State Board's anti-degradation policy. The following restrictions/prohibitions are implemented to assure that:

- Reclaimed water is not discharged to surface waters;
- The by-pass or overflow of untreated or partially treated reclamation water is prohibited;
- Excessive irrigation does not result in in excessive runoff;
- Overspray or runoff is minimized; and
- Reclaimed water is not use or stored within 50 feet of any well used for domestic water supply.

RECLAIMED WATER PROHIBITIONS

1. The discharge of recycled water to surface water is prohibited.
2. The by-pass or overflow of untreated or partially treated recycled water from the wastewater treatment plant, any intermediate unit process, or the reclamation distribution system to the point of use is prohibited.
3. Excessive irrigation with recycled water that results in excess runoff of recycled water, or continued irrigation of recycled water during periods of rain is prohibited.
4. Overspray or runoff associated with normal sprinkler use shall be minimized.
5. Application of recycled water within 50 feet of any well used for domestic water supply is prohibited
6. Impoundment of recycled water within 100 feet of any well used for domestic water supply is prohibited.
7. Use of recycled water that is conducted without using proper Best Management Practices (BMPs) and that would result in either direct or indirect discharges to surface waters or a surface water drainage course is prohibited.
8. Spray irrigation with recycled water when wind velocities exceed 30 mph is prohibited.
9. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in concentration or in a mass that causes degradation of groundwater quality.
10. The use of recycled water shall not cause pollution or nuisance as defined by Section 13050 of the California Water Code (CWC).

RECLAIMED WATER SPECIFICATIONS

1. The use of reclaimed water shall not cause degradation of any water supply.
2. Reclaimed water shall be managed in conformance with the regulations contained in Title 22.
3. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All reclamation distribution system piping shall be purple or adequately wrapped with purple tape.
4. Reclaimed water controller, valves, and similar appurtenances shall be affixed with reclaimed water warning signs, and shall be equipped with removable handles, locking mechanisms, or some other means to prevent public access or tampering. The contents of the signs shall conform to Section 60310 of Title 22. Quick couplers and sprinkler heads, if used shall be of a type or secured in a manner, which permits operation only by authorized personnel. Hose bibs that the public could use shall be eliminated.
5. Perimeter warning signs indicating that reclaimed water is in use shall be posed as prescribed in the Users Reclamation Plan (if applicable), which is subject to approval by the Regional Board and State Water Board DDW.
6. Reclaimed water shall not be allowed to escape from the authorized use areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.
7. Direct or windblown spray of reclaimed water shall be confined to the designated land application area and shall be prevented from entering outdoor eating areas, dwellings, drinking water facilities, food handling facilities, and other locations where the public may be present. In addition, direct or windblown spray of reclaimed water shall not enter surface watercourses.
8. A 15-foot buffer zone shall be maintained between any watercourse and the wetted area produced during land application of reclaimed water.
9. Application of recycled water to land shall not be performed within 24 hours before a forecasted storm, during precipitation, or within 24 hours after any precipitation event, nor when the ground is saturated.
10. A minimum freeboard of two feet shall be maintained at all times in any reservoir or pond containing reclaimed water, except with written authorization by the Regional Board's Executive Officer.
11. All reservoirs and ponds shall be adequately protected from erosion, washout, and flooding from a rainfall event having a predicted frequency of once in a 100 years.
12. There shall be at least ten-foot horizontal and one-foot vertical separation at crossings between all pipelines transporting reclaimed water and those transporting domestic supply, with the domestic supply above the reclaimed water pipeline, unless approved by the State Water Board DDW.
13. There shall be no cross-connections between potable water supply piping and piping containing reclaimed water. Supplementing reclaimed water with potable water shall not be allowed except through an air-gap separation or, if approved by the State Water Board DDW, a reduced-pressure principle back flow device.
14. Areas irrigated with reclaimed water shall be managed to prevent ponding conditions conducive to the proliferation of mosquitos and other disease vectors, and to avoid

creation of a public nuisance or health hazard. The following practices shall be implemented at a minimum:

   a. All applied irrigation water must either infiltrate within a 48-hour period, or a mosquito abatement plan, approved by the Placer Mosquito Abatement District, must be implemented when water is not infiltrated with a 48-hour period.
   b. Ditches receiving irrigation runoff, not serving as wildlife habitat, shall be maintained free of emergent, marginal, and floating vegetation.
   c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitos shall not be used to store recycled water.

15. The reclaimed water piping system shall not contain any hose bibs, except at the treatment facility.
16. The User shall arrange for the provision of mosquito surveillance and control by Placer Mosquito Abatement District when reclaiming by irrigation of rice.
17. The User shall provide accessibility through ways and means to possible mosquito sources and monitoring sites where recycled water is stored or used. This should include increased widths or ice contour levees or built-up areas that allow ingress and egress of Placer Mosquito Abatement District personnel and equipment.

STORAGE POND LIMITATIONS

1. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
3. The dissolved oxygen in the upper zone (1 foot) of wastewater in ponds shall not be less than 1 mg/L.
4. Ponds shall not have a pH less than 6.5 or greater than 8.5 as a daily average.
5. Ponds shall be managed to prevent breeding of mosquitos. In particular,
   a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
   b. Weeds shall be minimized.
   c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

APPENDIX I – RECYCLED WATER USER GUIDELINES, USE IN CONSTRUCTION FACTSHEET

City of Lincoln – Water Recycling

Recycled Water User Guidelines

USE IN CONSTRUCTION

ALLOWED USES

The California Code of Regulations, Title 22 Section 60307 allows the use of recycled water for various construction uses described herein. In addition, this Guideline has been approved by the State Water Board Division of Drinking Water. Recycled water is NOT allowed for drinking, washing, or animal water supply.

REQUIREMENTS FOR USE

- Vehicles used for collecting and distributing recycled water for use in construction shall:
    - Have an adequate tank and plumbing system to ensure that leaks and ruptures will not occur due to normal use.
    - Either be equipped with two risers, one for potable water and one for recycled water, or each tank used shall be equipped with approved air-gap separation between the filler tube and the tank.
    - Have color-coded risers, hoses, and fittings: blue for potable water and purple for recycled water.
    - Be equipped with uniquely sized fittings to prevent accidental connection between the potable and recycled water systems.
    - Be equipped with spray heads/nozzles configured to minimize runoff, ponding, or spray drift.
    - Be equipped with control valves configured such that recycled water can be applied in a controlled fashion on the site and completely retained during transit.
    - Be clearly labeled and specified in the "Signage Requirements" section on Page 2.
- Prior to use, _____ will inspect Users' vehicles to ensure compliance with the requirements listed above.
- Each vehicle tank used to store and/or transport recycled water must be flushed and disinfected prior to storage and/or transport of potable water or recycled water of better quality.
- User must maintain a log recording details of all recycled water deliveries (date, location, volume, and end use).
- Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor.
- Sites shall be designed and operated using Best Management Practices (BMPs) as stated below, or as revised by the City of Lincoln, to prevent recycled water spray, mist, or surface flow from either leaving the site or reaching:
    1. Any storm drain or surface water with year-round flow located adjacent to the Site;
    2. Areas with public access (e.g. dwellings, designated outdoor eating areas, or food handling facilities);

3. Drinking fountains, unless specifically protected with a shield device.

BEST MANAGEMENT PRACTICES

- For dust control adjacent to surface waters, install runoff barriers, such as vegetative strips, collection system, or 100-foot buffers.
- Maintain distance buffers if applying recycled water near sensitive land uses.
- Do not apply recycled water for dust control during strong winds.
- The application method must not cause ponding of water. For example: avoid excessive application volumes, use after heavy rains, or application to excessively uneven surfaces.
- Recycled water must not run off the site where it is applied. Conduct visual inspections to determine the necessary delivery rates and volumes. If run-off cannot be restricted by application method (for example, if the ground surface is strongly sloped or the soil has low water permeability), runoff needs to be collected via drainage system and reused.
- If hand watering is used, keep the hose low to the ground and point it in the direction of the wind to prevent spray drift.
- Signage should be displayed at the site of storage, during watering, and while the area is still wet (see "Signage Requirements" on Page 2).
- When watering is completed, drain hose and return hose to secure position. Ensure that there is no risk that recycled water may be used for drinking purposes or animal water supply.

HEALTH AND SAFETY GUIDELINES

- All workers that are likely to be present during recycled water use are required to have training in the proper use of recycled water. Supervisory personnel and Site supervisors should be held accountable to ensure that employees are using recycled water properly.
- It is the responsibility of the User to train all operations personnel so they are familiar with the use of recycled water. Training for operations personnel should include, but not be limited to, awareness of the following:
    1. Working with recycled water IS SAFE if common sense is used and if appropriate regulations are followed.
    2. Recycled water, although highly treated, is non-potable.
    3. Conditions such as ponding and runoff are not allowed.
    4. Good personal hygiene must be followed (e.g. wash hands after working with recycled water, do not consume food or drink while working with recycled water, cover wounds to prevent contact with recycled water).
    5. Cross-connections between the recycled water system and the potable water system must not be allowed to exist.

Report any accidental spills of recycled water or personal hygiene issues that have received medical attention to the City of Lincoln for action and record keeping. The City of Lincoln will initiate normal incident management procedures. (916) 434-2450 during normal business hours, or (916) 645-4040 after hours.

SIGNAGE REQUIREMENTS

Vehicle-Mounted Recycled Water Storage Tanks

While using vehicle-mounted recycled water for use in construction, the User must install, maintain, and keep in place three magnetic signs (on both sides and the rear of each vehicle, at the outlet) indicating that recycled water is in use. The signs must contain the words "RECYCLED WATER –DO NOT DRINK" in 2-inch high letters on a purple background and the "Do Not Drink" symbol, as shown to the right. All labels and signs must be placed where they can easily be seen by the personnel using the vehicle.

Other Equipment and Devices

All stationary pipe, materials, and equipment used to carry recycled water onsite (such as pipes, air vacuum relief valves, pressure reducing valves, pumps, pump control valves, etc.) must be properly identified. If the User installs any stationary recycled water equipment, information on required markings and tagging should be requested from the City of Lincoln.

USER AGREEMENTS

All potential recycled water users who receive recycled water from the City of Lincoln (City) must meet the City's requirements and must enter into a written agreement. The City reserves the right to take any action necessary with respect to the operation of the User's onsite recycled water operations in order to safeguard public health and to meet applicable regulations and permits.

APPENDIX J – RECYCLED WATER USER GUIDELINES, INFORMATION FOR SITE SUPERVISORS

City of Lincoln – Water Recycling

Recycled Water User Guidelines

INFORMATION FOR SITE SUPERVISORS

The customer shall designate a Recycled Water Site Supervisor who shall be responsible for the prevention of any cross-connections on the property, and in the event of a cross-connection with the potable water system, the customer shall immediately shutoff the main recycled water supply valve and depressurize the recycled water system to prevent further mixing with the potable supply, and shall immediately advise the City of the occurrence of the cross-connection. The local and State health officers shall be immediately advised by the City so that appropriate measures may be taken to control any contamination or pollution.

The Recycled Water Site Supervisor shall be a person accepted and approved by the City to operate and maintain the on-site facilities and irrigation systems, and to assume the responsibilities outlined here below. The City shall require that the designated Recycled Water Site Supervisor obtain instruction in the use of recycled water, such instruction being provided or approved by the City. He/she shall be the contact person for the customer in all matters between the User and the City concerning the operation of the on-site system and the use of recycled water. It shall be the responsibility of the customer to notify the City whenever a change of the Recycled Water Site Supervisor occurs. Subsequently, the customer shall be responsible to obtain the City's acceptance and approval of any newly designated Site Supervisor.

RESPONSIBLITIES OF THE SITE SUPERVISOR

- To oversee recycled water service and maintain on-site facilities using Best Management Practices (BMPs).
- To ensure that all operations personnel are trained and familiarized with the use of recycled water, including all pertinent information contained in these Rules and Regulations and those applicable portions of the California Code of Regulations.
- To furnish operations personnel with operating instructions, maintenance instructions, controller charts, and record drawings to ensure proper operation in accordance with the facilities design and these Rules and Regulations and all applicable permits.
- To operate and control the customer's recycled water system in order to prevent direct human consumption of recycled water and to control and prevent run-off.
- To carry out ongoing regular maintenance and upkeep to ensure the continued operation of all system elements within the requirements of the Rules and Regulations.
- To prevent cross-connections to potable water systems, and also to protect the recycled water system from contamination from cross-connections to other sources.
- To ensure that maintenance and inspection of backflow prevention assemblies is done regularly on an annual basis as per requirements of regulatory agencies, or more often in those instances where successive inspections indicate repeated failures.
- To report to the City any and all failures in the onsite facilities whether or not such failures may result in violations.
- The implementation of an Operations and Irrigation Management plan that provides for detection of leaks, and correction either within 72 hours of learning of a leak, or prior to the release of 1,000 gallons.

SITE SUPERVISOR DO'S AND DON'TS

DO:

- Install and maintain warning signs at all points of entry (both pedestrian and vehicular)
- Install and maintain labels and tags on recycled, non-potable and potable water systems
- Operate irrigation system:
    - Between 10 p.m. – 6 a.m., or when site is unoccupied, if automatically controlled (unless other restrictions apply)
    - At other times if manually controlled and supervised (that is, trained use site staff is present) to ensure the recycled water doesn't come in contact with the public
    - At any time if use site has restricted public access
- Use quick couplers instead of hose bibbs on recycled water systems
- Contact water purveyor if any water system (non-potable, potable or recycled) modifications are anticipated
- Immediately contact water purveyor, recycled water producer and local Health Department if any of the following has occurred:
    - A recycled water line break, spill or off-site discharge of recycled water
    - A violation of water recycling requirements
    - A cross-connection between the recycled and potable water systems
- Educate/train site workers on safe use and restrictions of recycled water
- Keep site records and as-built drawings up-to-date and accessible
- Assist and cooperate during Periodic Visual Inspections
- Assist and cooperate during periodic Cross-Connection Testing

DON'TS:

- Don't drink recycled water
- Don't use recycled water to wash hands or any other parts of body
- Don't remove recycled water identification signs, tags or labels
- Don't cross-connect two dissimilar water systems (recycled to potable)
- Don't allow recycled water to contact drinking fountains, eating areas, or any area in which food may contact the recycled water
- Don't allow recycled water to pond or puddle
- Don't allow excessive amounts of recycled water to runoff the use site property by either overspray or overwatering
- Don't use recycled water on an unapproved site
- Don't put hose bibs on recycled water systems (unless public access is restricted)
- Don't use the same equipment on both recycled water and domestic water systems (for example, quick couplers, tools, etc.)
- Don't modify any water system without prior approval of water purveyor and local Health Department

Operations and Irrigation Management Plan

Prior to commencing irrigation with recycled water, the Use Area Site Supervisor shall develop an Operation and Irrigation Management Plan to be available upon request to the Central Valley Regional Water Quality Control Board (CVRWQCB) or State Water Board Division of Drinking Water (DDW). The Operations and Irrigation Management Plan should implement best management practices (BMPs) and contain the following:

- Regular inspections should be conducted by the User of the entire recycled water system including sprinkler heads, spray patterns, piping and valves, pumps, storage facilities, lakes, controllers, signage, etc. Immediately correct any problems.
- All notification signs, labels and/or tags should be checked for their proper placement and readability. Replace damaged or unreadable signs, labels or tags.
- Special attention should be given to spray patterns to eliminate ponding, runoff and wind-blown spray conditions.
- Establish and maintain an accurate records-keeping system of all inspections, modifications and repairs.
- Broken sprinkler heads, faulty spray patterns, leaking pipes or valves, etc. must be repaired as soon as the malfunction becomes apparent.
- A maintenance program for backflow prevention assemblies that includes at least annual testing by a tester certified by the American Backflow Prevention Association (ABPA) or AWWA must be carried out. Records of annual tests, repairs and overhauls must be kept by the user with copies forwarded to the City and the local Health Department.

BEST MANAGEMENT PRACTICES (BMPs)

Best Management Practices (BMPs) shall be developed and implemented to achieve a safe and efficient irrigation system. The following are recommended BMPs for municipal landscape irrigation:

- Maintenance of irrigation controller equipment and software to ensure optimum duration and frequency for irrigation cycles.
- Testing to ensure adequate irrigation dry out time before the Use Area will be used by the Public and that the majority of irrigation occurs in evening or early morning to avoid the heat and/or windy parts of the day.
- As needed, aerate the soil to improve infiltration of air and water into soil.
- Maintain good horticultural practices: fertilization, mowing, de-thatching, aeration, and pest control, as necessary to create the best growing environment for landscape vegetation.
- Implement low impact development practices to minimize runoff that contains recycled water.
- Routinely adjust sprinkler heads so they achieve 80% head to head coverage throughout their intended arc. There are no obstructions that would interfere with the free rotation and smooth operation of any sprinkler. The system is tested biannually so adjustments can be made.
- Routinely adjust valves or pressure regulators so that the systems are operating at the pressure required by the sprinkler heads. Routinely test pressures with a pressure gage to maintain appropriate pressure levels.
- Routinely test the accuracy of time clocks and recalibrate or repair as necessary (i.e. at seasonal time changes).
- Repair or replace broken risers, sprinklers, valves, etc. as soon as they are discovered; replace with appropriate make and model of equipment to main uniformity though out the system.
- Routinely check backflow devices, pumps, etc. for leaks and repair or replace as necessary.
- Routinely clean screens and backwash filters to keep systems operating optimally.

CUSTOMER EMERGENCY RESPONSE PLAN PROCEDURES

In the event it is determined that a violation of these Rules and Regulations has occurred, the customer shall immediately notify the City of Lincoln. It shall be the responsibility of the customer to initiate action that will correct the conditions having caused the violation. If, in the opinion of the City the violation constitutes and immediate danger to the public health, then Service shall be terminated immediately by shutting off the meter and locking it. Service shall be resumed only after the violation has been corrected to the satisfaction of City.

If the violation is determined to be of lesser degree, then a timetable for completing the corrections shall be negotiated with the City by the customer. Corrections not being made in accordance with the timetable shall also result in the termination of Service by shutting off the meter and locking it.

If a cross connection is detected during the annual cross connection control test, or at any other time a backflow incident occurs or is suspected, the following procedures will be implemented immediately:

1. Keep the potable water system pressurized.
2. Shut down the recycled supply into the facility at the meter immediately.
3. Post notification at all potable water fixers, of potential cross-connection and restrict access to potable water.
4. Notify the City by telephone immediately, this notification is to be followed by a written notice within 24 hours. The written notice is to include an explanation of the nature of the cross-connection, date and time discovered, and steps taken to mitigation the issue.
5. Investigate the cause or location of the cross connection and eliminate the cross connection if found.
6. Collect potable water samples and perform bacteriological analyses and TDS. The bacteriological analyses are to be performed by a State of California approved testing laboratory. Water samples should be collected from the closest possible point to the cross connection.
7. Conduct a cross connection control test in coordination with the City and appropriate Health Departments to verify that all cross connections have been eliminated.
8. If the bacteriological samples conducted are positive, flush the potable water system and disinfect by maintaining a chlorine residual of at least 50 mg/L for 24 hours.
9. Flush the system after 24 hours; collect water samples and perform bacteriological analyses.
10. If the bacteriological samples indicate negative results, obtain approval from the City and Health Departments before placing the systems back in service.

CITY OF LINCOLN

RECYCLED WATER SITE INSPECTION CHECK LIST

Name of Customer: _____
Name/Location of Use Area: _____
Reporting Period: _____

Date of Inspection_____ Inspected By: _____

Observations:	**Y**	**N**
1. Evidence of substantial amount of recycled water leaving the authorized irrigation site in the form of surface flow, Estimated Volume: _____ *		
Evidence of ponding of recycled water and/or mosquito breeding due to ponding		
Breaks or leaks in irrigation system		
Have any repairs or alterations been made to the recycled water system since the date of the last inspection?		
Unusual odor from recycled water		
Recycled water signs, tags, stickers, and above-ground pipe markings not posted or are not readable		
Spray or mist contacting any drinking fountains, unless protected by shielding devices		
Spray or mist entering dwellings or food handling facilities		
Recycled water used for purposes other than irrigation, unless specified on permit for this site		
Substantial amount of recycled water entering a stream, flood control channel, or storm drain in the form of run-off or direct spray, Estimated Volume: _____ *		
Physical connection between recycled water system and potable water system, * (**contact City staff immediately, (916) 434-2450**)		
Has the recycled water Site Supervisor, key contact, or property owner or manager changed since the last inspection? If so please provide current information.		

If any of the observations noted with an * are "yes", make telephone report immediately to the City, complete Violation Report Form and mail, fax, or email a copy of "Violation Report" to City within one working day.

Indicate corrective action taken for all other "yes" observations (cite item number and attach additional sheets as necessary):

_____

_____

_____

I certify under penalty of law that the information in this report and any attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, to the best of my knowledge and belief, is true, accurate, and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fines and imprisonment for knowing violations.

_____ _____

Signature of Customer's Recycled Water Site Supervisor Date

CITY OF LINCOLN

IRRIGATION COVERAGE CHECKLIST

Use Area Site Name: _____

Address: _____

Inspected By: _____

Date Test Conducted: _____

Turn on the irrigation system and observe runoff patterns. Record locations of runoff:

Observations:	**Y**	**N**
1. Evidence of recycled water overspray		
2. Evidence of recycled water run-off from the use area		
3. Odor of recycled water		
4. Leaks or breaks in the irrigation system pipe or tubing		
5. Broken or faulty drip irrigation system emitters or spray irrigation sprinklers		
6. Inadequate warning signs, tags, stickers, and above ground pipe markings are posted		
7. Does spray, mist or runoff enter a dwelling, designated outdoor eating area, drinking fountain, adjacent property, food handling facility, or pool? If so please provide details: _____		
8. Does the site appear to have inadequate drainage? Indicated by: ___ Standing Water ___ Flooding ___ Soggy Areas ____ Other:_____		

Indicate corrective action taken for all "yes" observations (cite item number and attach additional sheets as necessary):

_____

_____

_____

I certify under penalty of law that the information in this report and any attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, to the best of my knowledge and belief, is true, accurate, and complete. I am aware that there are significant penalties for submitted false information, including the possibility of fines and imprisonment for knowing violations.

_____ _____

Signature of Customer's Recycled Water Site Supervisor Date

CITY OF LINCOLN

RECYCLED WATER USE

VIOLATION REPORT

Name of Customer: _____

Name and Location of Site: _____

Affected water body (if any): _____

Violation date & time: _____ Duration: _____

Violation Type: ____ Runoff or direct spray entering stream, flood control channel or storm drain

____ Other _____

Estimated gallons of discharge or direct spray: _____

Describe the Event: _____

_____

_____

Corrective Actions Taken to stop violation and fix problem: _____

_____

_____

_____

Violation reported by: _____ Title: _____

Violation reported to:

____ City of Lincoln, Department of Public Works

Telephone: (916) 434-2450

Please email this report to: public.services@lincolnca.gov

APPENDIX K – RECYCLED WATER USER GUIDELINES, CROSS CONNECTION CONTROL PROGRAM FACTSHEET

City of Lincoln – Water Recycling

Recycled Water Use

CROSS-CONNECTION CONTROL TEST

General

As part of the statewide requirements for the use of recycled water, each reuse site must pass a cross-connection test. The following briefly describes the methodology, activities and procedures to conduct the required testing for each site. Prior to any testing, the cross-connection control specialist from the City of Lincoln will notify the State Water Board Division of Drinking Water (DDW) and the County Environmental Health Department of the proposed cross-connection test. The notification will take place a minimum of one week before the actual test date and will include the time and location of the proposed testing. Upon completion of testing, the cross-connection control specialist will submit a written report to the State Board Drinking Water Division's Lassen District Office summarizing the results of the testing. The report will be submitted within two weeks after the testing occurs. The report will include copies of actual recorder charts from the pressure recorders if used during the testing. The following describes the cross-connection testing activities.

PRE-TEST MEETING

A pre-test meeting will take place with the designated site supervisor of the site to discuss the general cross-connection testing procedures and to schedule the actual cross-connection testing. A date and time for the testing will be agreed upon and questions and concerns will be addressed.

EVALUATE SPECIFIC SITE REQUIREMENTS

Site specific requirements and constraints, if any, for interruption of potable water will be determined. For sites where an interruption of the potable water supply is unacceptable, specific site requirements will be evaluated. Each site will be evaluated on a case-by-case basis to determine if a temporary water supply is required or if alternative facilities could be utilized.

POTABLE WATER SYSTEM TEST

This phase of the cross connection test requires shutdown of the potable water system. The test duration shall be as directed by the City of Lincoln with a typical test lasting from 12 hours to 24 hours but no test shall be for less than 4 hours. An example procedure for this phase of the test is as follows:

Attach a pressure recorder to the number four-test cock of the backflow device on the potable water system. The potable water system will then be depressurized at the backflow device using the upstream shut-off valve. Open the number one test cock. This will release any water that leaks past the closed shut-off valve and not affect the pressure recorder. The still pressurized irrigation system control valves are to be operated and irrigation system operation is to be observed during this phase of the test. In lieu of a pressure recorder, each fixture in the potable water system can be operated to verify the potable water system is depressurized.

IRRIGATION SYSTEM TEST

The test procedure is then reversed and the irrigation system shall be shut-down for 24 hours, described as follows:

A pressure recorder is to be connected to the irrigation system. This can be accomplished by a connection to the irrigation backflow assembly similar to the Potable Water Test. The irrigation system is to be depressurized while the potable water system remains pressurized. A complete drain down of the irrigation system is not required. The irrigation meter should be locked after it is depressurized to prevent any unauthorized turn-on of the meter. The irrigation system is to remain shut-down for 24 hours while the potable water system is operated normally. While the system is depressurized the master control panel for the irrigation system is to operate the control valves through their normal irrigation cycle. In lieu of a pressure recorder, each fixture on the irrigation system can be operated to verify the system is depressurized.

OVERSPRAY AND COVERAGE TEST

Part of the cross connection testing requirements includes an overspray and coverage test of the irrigation system to ensure that the system is functioning properly; operating efficiently and that overspray and ponding are minimized. The overspray and coverage tests are normally conducted after the site is connected to the recycled water system. This is primarily due to the variation in the potable and recycled water system pressures.

TEST REPORT

Upon successful completion of the cross-connection testing, the cross-connection control specialist for the City shall make a written report to State Board Drinking Water Division's Lassen District Office. The report will include photocopies of the pressure recorder charts if used, description of the testing activities including time of events and initial and final pressure reading, any unusual incidents that occurred and a recommendation that the site has passed the required testing and should be given final approval to use recycled water. If the testing fails, only a verbal notification will be made to the DDW describing the possible reason for the failure, what action will be taken to remedy the situation and that another test will be required.

CROSS-CONNECTION TESTING PROCEDURE

The following are general guidelines for the testing procedure and may be modified with the approval of the State Water Board DDW, City, and local Health Department.

1. Potable water may be used during the initial testing of the on-site recycled water system, with the potable water supply separated from the proposed recycled water system by an approved RP assembly until the system has been checked for cross-connections.

2. The irrigation (future recycled water) system should be drained and remain deactivated for an adequate period of time based on site-specific characteristics to allow for sufficient depressurization.

3. At the end of the shutdown period, all of the irrigation system outlets should be tested throughout the entire site for cross-connections by checking each outlet for flow. This should be done at the quick couplers (located on the normally pressurized main irrigation line) and by cycling the irrigation clocks (observing the spray decrease) to determine if there is any flow. If there is no flow detected in any of the outlets that would suggest a cross-connection, the connection to the irrigation system may then be reactivated.

4. The potable water to the domestic uses on the site will then be shut off at the potable water meter. The domestic water system must be drained and remain deactivated for an adequate period of time based on site-specific characteristics to allow for sufficient depressurization.

5. At the end of the shutdown period, all of the use site's domestic water fixtures should be tested for cross-connections by operating each fixture and checking for flow. The potable water inlet should then be checked to detect if there is backpressure or significant backflow. If no flow is detected at the inlet or in any of the fixtures that would suggest a cross-connection, the potable water connection may then be reactivated.

APPENDIX B

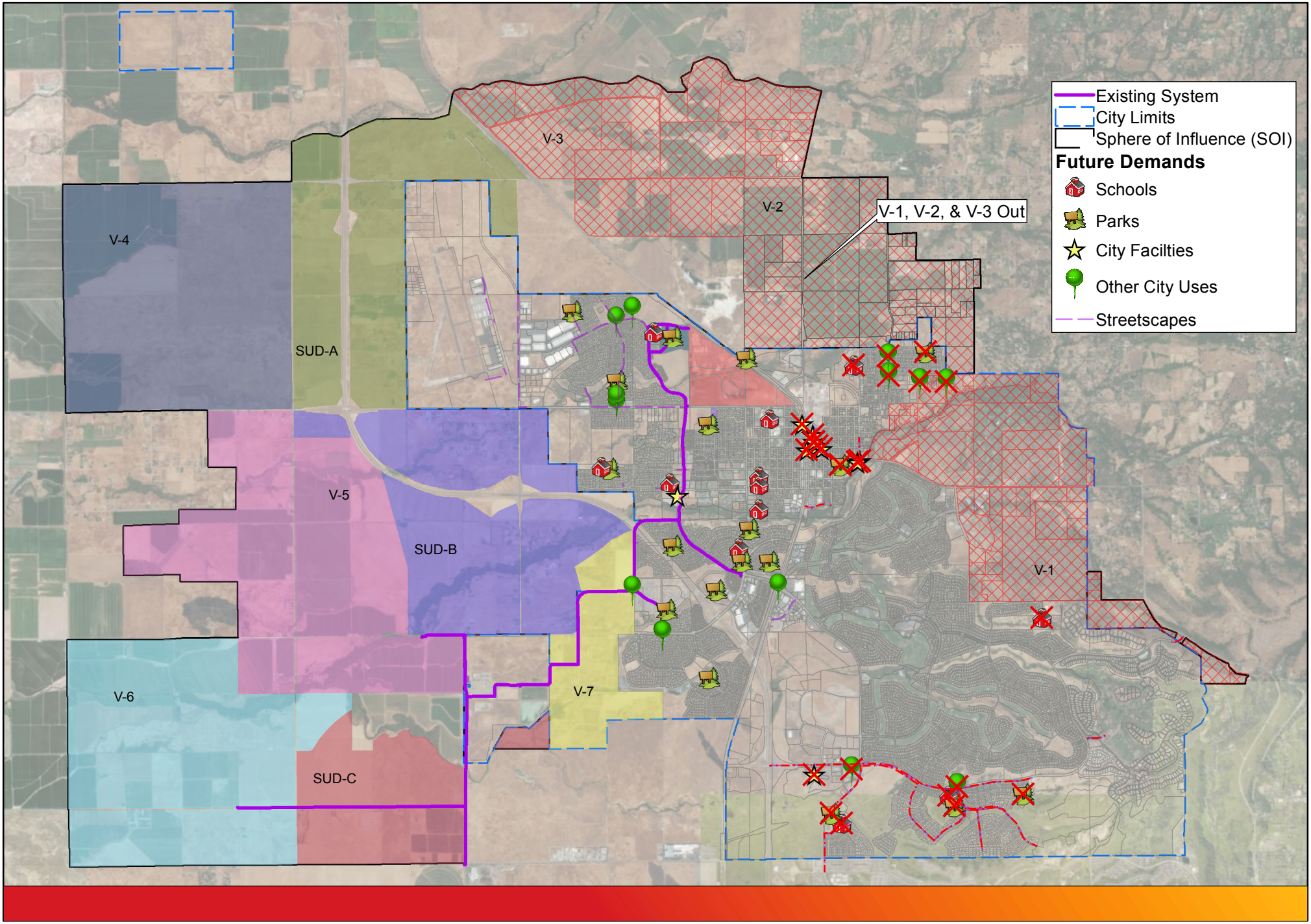
Recycled Water Demand Details

Table 1 - Demands No Longer within Service Area (Elevation > 160 feet above sea level)

Meter Name	Alias	Demand Type	In/Out	Maximum Month Demand (gpm)	Peak Hour Demand (gpm)
#54-City Hall Irrigation	#54 City Hall-irrigation	Streetscape	Out	0.8	2.4
#21 12 Bridges Dr. (65 to EJP)	#21 12 Bridges Dr. 65 to EJP)	Streetscape	Out	0.0	0.0
#22 12 Bridges Median (EJP to Eastridge Dr.)	#22 12 Bridges Median (EJP to Eastridge Dr.)	Streetscape	Out	50.0	150.1
#24 Southcreek Dr. (guess)	#24 Southcreek Dr.	Streetscape	Out	5.5	16.4
#25 EJP (12 Bridges to Wilson Park)	#25 EJP (12 Bridges to Wilson Park)	Streetscape	Out	0.0	0.0
#26 Westview Dr. and EJP South end of EJP	#26 Westview Dr. and EJP South end of EJP	Streetscape	Out	4.4	13.2
#27 East Ridge Dr. (12 Bridges to Southcreek Dr.)	#27 East Ridge Dr. (12 Bridges to Southcreek Dr.)	Streetscape	Out	5.0	15.1
#28 Eastridge Dr. Open Space Fontage-Southcreek to Old Kenmare	#28 Eastridge Dr. Open Space Frontage - Southcreek to Old Kenmare	Streetscape	Out	0.0	0.0
#29 12 Bridges Dr. Open Space, (EJP to Southcreek Dr.)	#29 12 Bridges Dr. Open Space (EJP to Southcreek Dr.)	Streetscape	Out	0.0	0.0
#30 Eastridge Dr. (old Kenmare to End of Eastridge)	#30 Eastridge Dr. (old Kenmare to End of Eastridge)	Streetscape	Out	4.7	14.2
#31 Bradborne Dr.	#31 Bradborne Dr.	Streetscape	Out	20.4	61.3
#32 Eastside of Eastridge (12 Bridges to Old Kenmare)	#32 Eastside of Eastridge(12 Bridges Dr. to Old Kenmare)	Streetscape	Out	2.9	8.8
#33 12 Bridges Dr. (Eastridge to (end of Landscape East of Dunlewy)	#33 Total	Streetscape	Out	7.2	21.5
#34 Catta Verdera Frontage	#34 Total	Streetscape	Out	18.1	54.4
#35 12 Bridge Entry at Sierra College Blvd	#35 12 Bridges Entry at Sierra College Blvd	Streetscape	Out	0.0	0.0
#38 Ravine Meadows Pump Station- End of Ferrari Way	#38 Ravine Meadows Pump Station - End of Ferrari Way	Streetscape	Out	0.0	0.0
#39 Parking Lot F St. Btwn 6th &7th	#39 Parking Lot F St. Btwn 6th & 7th	Streetscape	Out	0.9	2.7
#40 Park Lot corner of F and 6th Street	#40 Parking Lot corner of F and 6th Street	Streetscape	Out	0.0	0.0
#42 Parking Lot between E and F behind Civic Center	#42 Parking Lot between E and F behind Civic Center	Streetscape	Out	0.0	0.0
#43 Cobble area East Ave. (193 to 6th St)	#43 Cobble area East Ave. (193 to 6th Street)	Streetscape	Out	0.0	0.0
#45 Gateway Drive and E St	#45 Gateway Dr. and E St.	Streetscape	Out	2.1	6.3
#59 Station 33 Irrigation	#59 Station 33-Irrigation (197)	Streetscape	Out	1.1	3.2
Twelve Bridges Elementary School	12 Bridges ES-Total	School	Out	38.3	114.9
Twelve Bridges Middle School	12 Bridges MS-Total	School	Out	87.3	261.9
Carlin C. Coppin Elementary School	Carlin Copin ES	School	Out	3.9	11.8
Coyote Pond Park	Coyote Pond	Park	Out	3.1	9.2
McBean Memorial Park	McBean-Total	Park	Out	80.2	240.5
Palo Verde Park	Palo Verde	Park	Out	17.7	53.1
Twelve Bridges Park	Twelve Bridgees-Total	Park	Out	25.8	77.3
Wilson Park, Lincoln, CA	Wilson	Park	Out	26.0	78.0
Beerman's Plaza	Beerman's Plaza- Total	Facilities	Out	14.4	43.2
Lincoln Public Library- Twelve Bridges	Twelve Bridges Library	Facilities	Out	0.0	0.0
590 5th St- Carnegie Library	Carnegie Library	Facilities	Out	1.4	4.2
Lincoln City Hall	City Hall	Facilities	Out	3.8	11.5
511 5th St- Civic Center	Civic Center	Facilities	Out	0.2	0.6
Lincoln Community Center	Community Center	Facilities	Out	0.9	2.8
Lincoln Fire Station No. 33, 17 McBean Park Dr	Fire Station 33	Facilities	Out	0.2	0.5
McBean Pool	McBean Pool	Facilities	Out	3.0	9.0
Old City Hall	Old City Hall	Facilities	Out	0.0	0.1
Lincoln Police Department	Police Department	Facilities	Out	0.3	1.0
#23 Drainage Channel at South Creek Entry	#23 Drainage Channel at Southcreek Entry	Streetscape	Out	0.0	0.0
#36 Foxworth Estates	#36 Total	Streetscape	Out	2.4	7.2
#37 the Grove East	#37 The Grove East 12th Street	Streetscape	Out	0.8	2.4
#46 KB Homes Frontage	#46 KB Homes Frontage and Outfall McCourtney & Virginiatown Rd.	Streetscape	Out	5.3	16.0
#49 Cobble Area East of Chevron on EJP	#49 Cobble Area East of Chevron on EJP	Streetscape	Out	0.0	0.0
#58 1452 McCourtney- Irr (97)	#58 1452 McCourtney-Irr (97)	Streetscape	Out	3.0	9.1
Reservoir Del Web Tanks (99)	Resevoir Del Web Tanks (99)--Trees by Res Tanks	Other Depts	Out	7.6	22.9

Table 2 - Demands Remaining within Service Area (Elevation < 160 feet above sea level)

Meter Name	Alias	Demand Type	In/Out	Maximum Month Demand (gpm)	Peak Hour Demand (gpm)
#55 Station 34- Irrigation	#55 Station 34-irrigation	Streetscape	In	1.7	5.0
#1 Nicholas Rd. (Joiner Pkwy to Teal Hollow Dr.)	#1 Total	Streetscape	In	0.7	2.2
#2 Lakeside Drive (Nicholas Rd to Venture Dr.)	#2 Total	Streetscape	In	4.4	13.2
#3 Venture Dr. (Teal Hollow Dr. to Lakeside Dr.) (shared w/#4)	#3 Venture Dr. (Teal Hollow Dr. North to Lakeside Dr.)-shared with #4 Teal Hollow North	Streetscape	In	1.1	3.3
#4 Teal Hollow North (Venture Dr. to Meadowland wy)	#4 Teal Hollow North (Venture Dr. to Meadowland Wy)	Streetscape	In	0.0	0.0
#5 Teal Hollow South (Nicholas Rd. to Floradale Wy)	#5 Teal Hollow South (Nicholas Rd. to Floradale Wy)	Streetscape	In	2.9	8.8
#8 Lakeside Greenbelt? (Guess)	#8 Lakeside Greenbelt	Streetscape	In	1.9	5.6
#7 Venture McClain Corridor (Shared with Brown Park) ?	#7 Venture McClain Cooridor-shared with Brown Park	Streetscape	In	0.0	0.0
#6 Joiner (Nicholas Rd. to Lakeside Dr.)	#6 Joiner (Nicholas Rd. to Lakeside Dr.)	Streetscape	In	Existing	
#10 City Corp Yard	#10 Total	Streetscape	In	9.7	29.1
#11 Airport Office	#11 Airport Office	Streetscape	In	1.2	3.7
#12 Nicholas Rd./Aviation Cobble Area?	#12 Nicholas Rd./ Aviation Cobble Area	Streetscape	In	0.0	0.0
#13 Aviation Parkway	#13 Aviation Pkw	Streetscape	In	9.0	26.9
#14 Joiner Pkwy Islands (Nicholas Rd. to Moore Rd.)	#14 Total	Streetscape	In	Existing	
#15 Third Street Sound Wall? (Guess)	#15 3rd Street Soundwall	Streetscape	In	0.6	1.7
#16 Mariner Circle	#16 Mariner Circle	Streetscape	In	0.1	0.3
#17 2D Entry, Moore Delaney ? (Guess)	#17 2D Entry, Moore Delaney	Streetscape	In	0.0	0.0
#18 Sterling Parkway	#18 Sterling Pkwy	Streetscape	In	1.3	4.0
#41 Parking Lot corner of 4th and H street	#41 Parking Lot corner of 4th and H Street	Streetscape	In	0.2	0.6
#44 First and Fuller Median	#44 First and Fuller Median	Streetscape	In	0.0	0.0
#51 Orly Court	#51 Orly Court	Streetscape	In	1.5	4.4
#19 3D South, Moore Rd. Frontage	#19 3D South, Moore Rd. Frontage	Streetscape	In	0.3	0.9
1878-1880 Flightline Dr. (99) Leased Hangars at Airport	1878-1880 Flightline Dr. (99)--Leased hangars at Airport	Other Depts	In	1.9	5.7
1790 Flightline Dr. (99)-- City Hangars at Airport	1790 Flightline Dr. (99)--City Hangars at Airport	Other Depts	In	0.1	0.2
1245 Fiddyment Rd Bypass (97)- WWTRF	1245 Fiddyment Rd Bypass (97)--WWTRF	Other Depts	In	14.7	44.0
1245 Fiddyment Rd Main (99)-- WWTRF	1245 Fiddyment Rd Main (99)--WWTRF	Other Depts	In	21.5	64.5
Creekside Oaks Elementary School	Ckeekside Oaks ES	School	In	3.9	11.7
Glen Edwards Middle School	Glen Edwards MS- Total	School	In	9.0	27.1
Lincoln High School *legacy demand	Lincoln HS	School	In	104.0	312.0
Lincoln Crossing Elementary School	Lincoln Crossing ES	School	In	4.4	13.3
Foskett Ranch Elementary	Foskett ES	School	In	19.6	58.9
First Street School	First Street ES	School	In	12.5	37.4
Foskett Regional Park	Foskett Regional-Total	Park	In	Approved	
Jimenez Park	Jimenez Park	Park	In	12.4	37.1
Joiner Park	Joiner	Park	In	Phase 2	
Machado Park	Machado	Park	In	Phase 2	
Markham Ravine Park	Markham	Park	In	3.5	10.6
Pete Demas Park	Pete Demas	Park	In	5.7	17.0
Peter Singer Park	Pete Singer- Total	Park	In	Phase 2	
Scheiber Park	Scheiber	Park	In	8.1	24.2
Sheffield Park	Sheffield- Total	Park	In	8.7	26.0
Auburn Ravine Park	Auburn Ravine	Park	In	10.3	30.8
Aitken Park	Aitken-Shared with Sorrento Pkwy #52 & 53	Park	In	Approved	
Brown Park	Brown-Shared w/#7 Venture/McClain	Park	In	7.3	21.8
2555 Lincoln Blvd	2555 E Lincoln Pkwy-irr (99)	Park	In	0.2	0.5
Lincoln Fire Department No. 34	Fire Station 34	Facilities	In	0.3	0.9
#9 Lakeside Joiner Streetscape	#9 Lakeside Joiner Streetscape	Streetscape	In	3.1	9.3
#20 Sorrento, Farrari Ranch rd.	#20 Sorrento, Ferrari Ranch Rd.	Streetscape	In	9.3	27.8
#47 Joiner Overcrossing	#47 Joiner Overcrossing	Streetscape	In	0.0	0.0
#52 Sorrento and Moore Rd	#52 Sorrento and Moore Rd	Streetscape	In	0.0	0.0
#53 F Ranch/Sorrento Pkwy	#53 F Ranch/Sorrento Pkwy	Streetscape	In	0.0	0.0
#56 Lakeside Dr #5 (97)	#56 Lakeside Dr. #5 (97)	Streetscape	In	1.9	5.8
#57 Lakeside Dr #2 (97)	#57 Lakeside Dr. #2 (97)	Streetscape	In	2.2	6.5
First Street Cemetery	First Street Cemetery	Cemetery	In	37.4	112.2
Santa Clara Street Cemetery	Santa Clara Street Cemetery	Cemetery	In	9.4	28.3

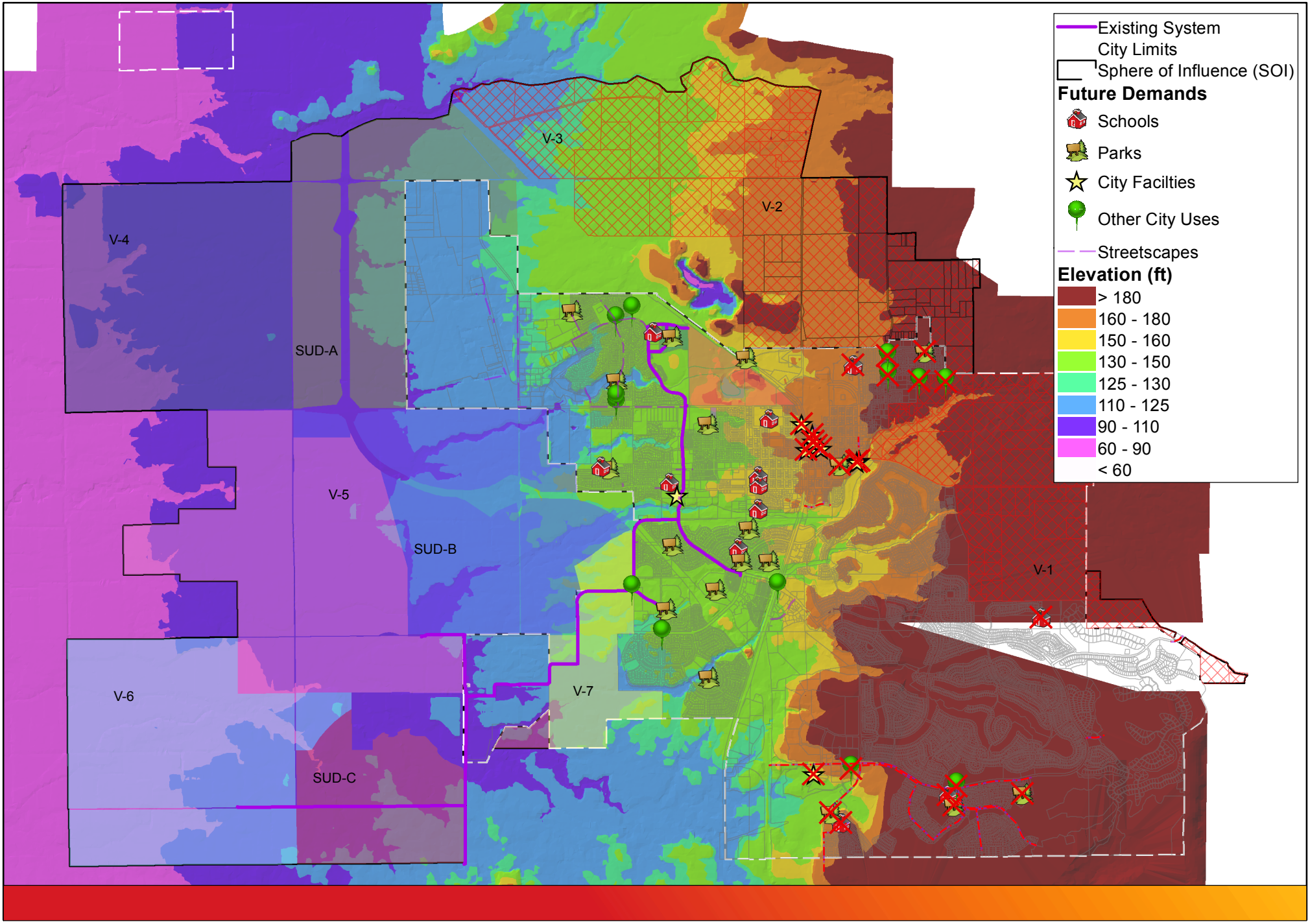


Stantec

0 2 Miles

1 inch = 5,812 feet

Figure 1
Revised Demands
City of Lincoln - Reclamation Master Plan

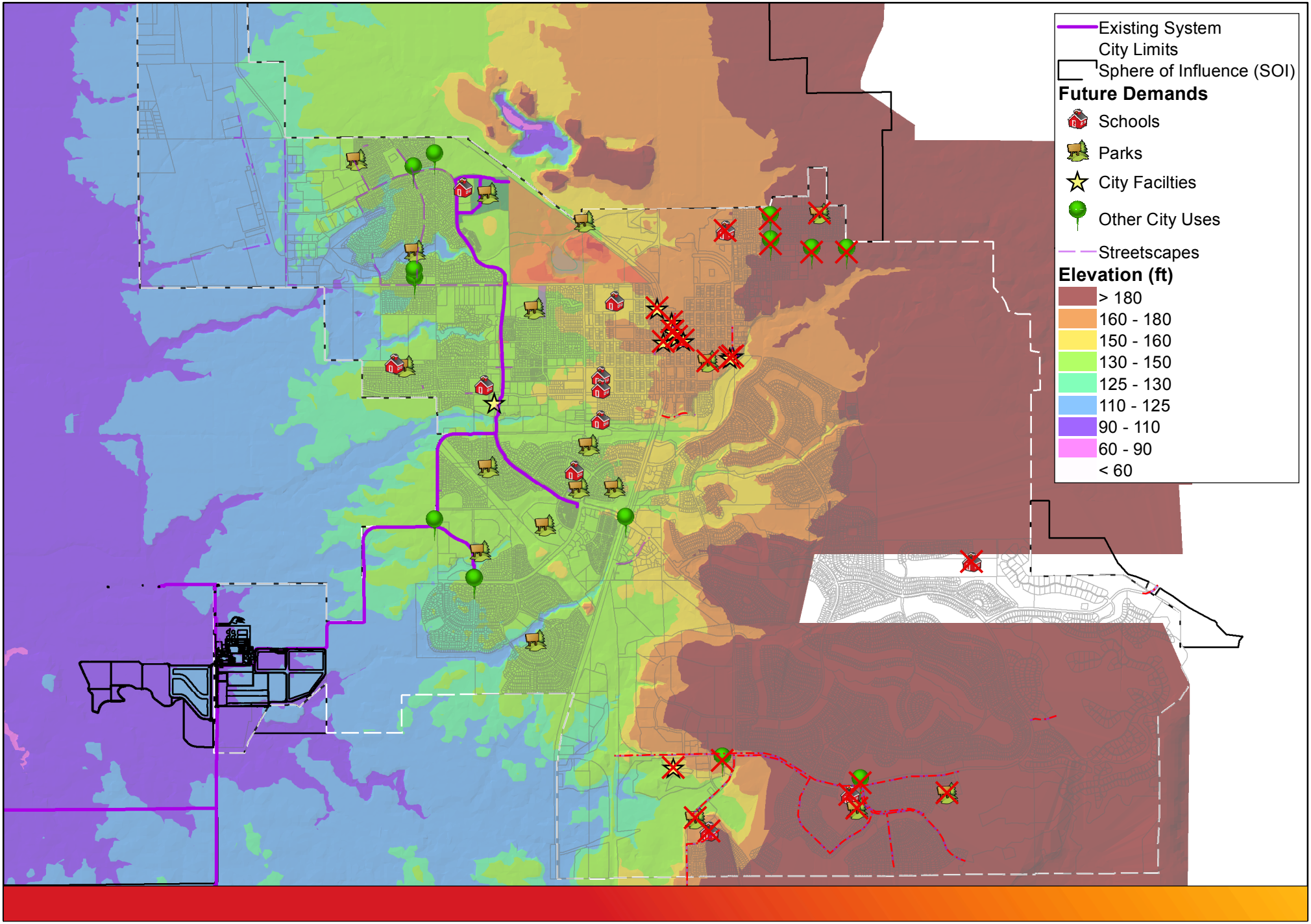


Stantec

0 2 Miles

1 inch = 5,812 feet

Figure 2
Revised Demands - Elevation
City of Lincoln - Reclamation Master Plan



Stantec

0 1.8 Miles

1 inch = 4,430 feet

Figure 3
Revised Demands - City Limits
City of Lincoln - Reclamation Master Plan